ABSTRACT

ADDOR, MARY LOU. An Interpretative Inquiry into Natural Resources and Environmental Leadership: Understanding the Nature of a Leadership Development Experience. (Under the direction of Dr. Susan J. Bracken.)

The purpose of this Interpretative Phenomenological Analysis (IPA) study was to explore the experiences of natural resources and environmental leaders who participated in a leadership development institute that advanced a new way of thinking about how to influence integrative solutions to complex environmental issues. In this model, additional dimensions were added to the construct of leader, leadership, and leadership development.

Constructivism serves as the main theoretical lens for this research and helps explain how human beings interpret or construct ideas, objects, and facts in specific contexts.

Situating these experiences within adult learning theory, the researcher analyzed the experiences of 11 institute participants from 1999-2008. Representing a mix of leaders from the public, private, and non-profit sectors, including a local community leader, the participants remained anonymous to each other throughout the study.

Natural resources and environmental leadership is best understood as a process that involves two levels of influence (individual and organizational) and two types of influence relationships (internal and external) (Portugal & Yukl, 1994). Leadership is more likely to be successful if leaders understand how the influence processes at the individual and organizational level are interrelated, internally and externally. Without interrelationships between key individuals inside and outside organizations, policies and programs are unlikely to be implemented (Portugal & Yukl, 1994), and collaboratives are unlikely to be initiated.

For the 21st century, leadership development will prove to be an integrative strategy that links leader development with leadership development with more emphasis on the post-industrial definition of leadership offered by Rost (1993a, p.145): “Leadership is not what leaders do, but it is what leaders and followers do together, meaning the essence of leadership is the relationship, not the leader.”

The Natural Resources Leadership Institute (NRLI) is an adult learning model that demonstrates an integrative strategy of leader development and leadership development,
leading to the expansion of cross-sectoral and cross-cultural interrelationships between leaders, organizations, and inter-organizational networks. A system of learning, it is simultaneously joint, cooperative, vertical, horizontal, and interdisciplinary in its character, philosophy, and structure, a conceptual framework to help “learn our way out” (Finger & Verlaan, 1995, p. 505).

An analysis of the participants’ individual stories documented a collective experience that occurred over a 10-year period. The overarching research question for this study: What was the nature of the experiences of leaders who participated in a natural resources leadership institute?, revealed five primary themes from the in-depth and rich perspectives of the participants:

1. Context of the NRLI Learning Experience
2. The Practicum: Planning for Change in Inter-organizations
3. The Rationale for Leadership Development
4. Integration of Leader Development and Leadership Development
5. Shaping a Learning Community or Cultivating a Community of Practice

The results of this study contributed an interpretative body of knowledge about the nature of experiences of leaders who participated in a natural resources leadership institute and how this knowledge:

1. Intersects with a contemporary and historical body of knowledge in adult education, leadership and leadership development, environmental conflict resolution, and qualitative research on leadership and leadership development;
2. Enriches our understanding about the many facets and complex nature of leadership in the natural resources and environmental profession;
3. Links actions and impacts in an environmental-socio-economic context between local, county, state, regional, and national initiatives; and
4. Contributes to the preparation of natural resources and environmental leaders for the 21st century.
An Interpretative Inquiry into Natural Resources and Environmental Leadership: Understanding the Nature of a Leadership Development Experience

by
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DEDICATION

This dissertation is dedicated to the memory of:

Colonel H. and E. Addor, my first mentors and educators…
Grossmother, the quintessential teacher and grandmother…
Dr. Colleen Wiessner. “It is a privilege to be an educator,” Colleen would say. Indeed, she lived this mantra, transforming many of us to learn how to bring our creativity, humanity, and inquiry, but most of all, our voice into the scholarly process of education. Though she may not be near as I write the final chapter, she will share in the story.

This dissertation is dedicated to:

My brother and his family for all their support…
The eleven NRLI Fellows who graciously joined me on this journey to share their stories and the meanings of their stories…
Those who dream and tire, yet never abandon their goal of cultivating themselves in spite of whatever adversity is before them.
BIOGRAPHY

Mary Lou (Lou) Addor was born in Bexar County, Texas. She has resided in various locations throughout her life including England, Germany, Texas, Arizona, California, Ohio, Utah, Virginia, and Washington. She currently lives in North Carolina.

Lou received a Bachelor of Liberal Arts from St. Andrews Presbyterian College and from North Carolina State University, a Master of Parks, Recreation and Tourism Management, as a recipient of the Thomas I. Hines scholarship. Lou is an alumna of the Boulder Outdoor Survival School (BOSS), formerly of Brigham Young University.

Lou has extensive experience in program development and leadership, and process management of multi-party stakeholder processes. She has served in various capacities with VisionQuest’s west coast wagon trains and wilderness camps, with Pecos River Learning Center, an organizational development program, and the Natural Resources Leadership Institute at North Carolina State University.

Lou serves on several national committees and initiatives: the National Roster of Environmental Conflict Resolution Practitioners of the U.S. Institute of Environmental Conflict Resolution and the Steering Committee of the University Network for Collaborative Governance of the Policy Consensus Initiative. She is a new member of the Public Deliberation Community of Practice of eXtension.

Locally, Lou volunteers in her community as president of her homeowner’s association, a Wake County Firewise Community. Firewise is program of the National Fire Protection Association.

She is Interim Director of the Natural Resources Leadership Institute and an Extension Specialist for Personal and Organizational Development with the NC Cooperative Extension at North Carolina State University.
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Natural Resources Leadership Institute (NRLI). An institute of the North Carolina Cooperative Extension at North Carolina State University. With strong fundamental roots in the Progressive philosophy of adult education, the NRLI is both a means to prepare learners as well as an instrument of social change (Elias & Merriam, 1995). The needs, interests, and experiences of the learners are key elements in the learning process, recognizing the unlimited potential people have to develop through education. Promoting learning by thinking as well as by doing, the long-term goal of the NRLI is building the capacity for collaborative decision-making around natural resources in North Carolina and in dissemination of the NRLI model (Natural Resources Leadership Institute, 2010).

Environmental Leadership. Environmental leadership is “the ability of an individual or group to guide positive change toward a vision of an environmentally better future” (Gordon & Berry, 1993, p. 3).

Refining this distinction, Egri and Herman (2000) posit that environmental leadership is “the ability to influence individuals and mobilize organizations to realize a vision of long term ecological sustainability” (p. 572).

Natural Resources Leadership. Natural resources leadership may be defined by what makes it effective as opposed to what it is. For example, Cornett and Thomas (1995) suggest most effective natural resources professionals have a vocation and influence beyond their immediate positions, and their effectiveness comes from constant learning, being open to and seizing opportunities, and pursuing a vision.

Newman, Bruyere, and Beh (2007) identified characteristics of effective leadership in natural resources management and specifically how service learning can prepare future natural resources leaders.

Management. Management,” however, says Rost (1993a), “is an authority relationship between at least one manager and one subordinate who coordinate their activities.
to produce and sell particular goods and/or services” (p. 145). Management is typically
decisive, efficient, objective, and in control, ensuring a hierarchical process is followed.

**Leadership.** “Leadership, from a post-industrial perspective,” says Rost (1993a), “is
an influence relationship among leaders and followers who intend real change that reflect
their mutual purposes” (p. 145). Leadership is not what leaders do, but it is what leaders and
followers do together, meaning the essence of leadership is the relationship, not the leader
(Rost, 1993a).

According to Yukl (1998), “Leadership is often defined in terms of traits, behavior,
influence, interaction patterns, role relationships, and occupation of an administrative
position” (p. 2).

Similarly, Bass (1990a) points out:

Leadership has been conceived as the focus of group processes, as a matter of
personality, as a matter of inducing compliance, as the exercise of influence, as
particular behaviors, as a forum of persuasion, as a power relation, as an instrument to
achieve goals, as an effect of interaction, as a differentiated role, as initiation of
structure, and as many combinations of these definitions. (p. 11)

And then Bass (1990a) describes “leadership as an interaction between two or more
members of a group that often involves a structuring or restructuring of the situation
and the perceptions and expectations of the members” (p. 19).

**Leader Development and Leadership Development.** “Development is a process of
interaction” (Blakely, 1965, p. 2). Day (2000) advocates a distinction between leader
development and leadership development.

Leader Development is the emphasis on intrapersonal development of the individual
leader, on the knowledge, skills, and abilities associated with formal leadership roles, and
building human capital of those leading aspects of an organization or the organization (Day,
2000). Organizations focus training resources on the development of their human capital or
their leaders. According to Gardner (2006), the development emphasis is on intrapersonal
competencies such as self-awareness, self-regulation, and self-motivation.
Leadership Development, on the other hand, is social capital development, as distinguished by Dixon (1993); leadership development is building the capacity for groups of people to learn their way out of unforeseen challenges and problems or in anticipation of unforeseen circumstances.

Leader development, defined by VanVelsor and McCauley (2004) is “the expansion of a person’s capacity to be effective in leadership roles and processes” (p. 2). Three central assumptions are contained in this definition of development: (a) improving the individual capacities, (b) developing what makes someone effective in a variety of roles and processes, both formal and informal (as opposed to what makes him or her a leader), and (c) individuals can expand their capacities to facilitate their effectiveness (Van Velsor, McCauley, & Moxley, 1998).

A definition VanVelsor and McCauley (2004) pose for leadership development is similar to their definition of leader development: “leadership development is the expansion of the collective capacity to be effective in leadership roles and processes” (p. 18). Emphasizing the internal influence of the organization than the interrelationships between key individuals inside and outside organizations as characterized by Portugal and Yukl (1994), Dixon’s definition of leadership development has been accentuated throughout the research.

Dixon (1993) describes leadership development as building the capacity for groups of people to learn their way out of unforeseen challenges and problems, or in anticipation of unforeseen circumstances. Leadership development is primarily focused on interpersonal development; on the knowledge, skills, and abilities that build networked relationships among individuals to enhance cooperation and resource exchange in creating organizational value (Day, 2000). According to Gardner (2006), building one’s interpersonal competence helps form an accurate understanding of others and relationships, allowing one to understand and work with others. “Leadership development,” says Day (2000), “can be thought of as an integration strategy by helping people to understand how to relate to others, coordinate their efforts, build commitments, and develop extended social networks by applying self-understanding to social and organization imperatives” (p. 586).
Brungardt (1996) reasons that leadership development is a continuous learning process that spans an entire lifetime, “where knowledge and experience build and allow for even more advanced learning and growth, and that every stage of development in the life cycle promotes, encourages, and assists in one’s leadership potential” (p. 83). He includes both formal and structured educational activities in his definition as well as unstructured activities such as childhood development and adult life experiences. More than a program for developing leadership, Brungardt’s definition emphasizes a continuous learning process explaining how leaders develop over a lifetime; and thus his definition serves as a theoretical perspective for this research.
CHAPTER 1
INTRODUCTION

“The major problems in the world are the result of the difference between how nature works and the way people think.” (Gregory Bateson, n.d.)

The purpose of this interpretative study was to explore in depth the experiences of natural resources and environmental leaders who participated in a leadership development institute and situate these experiences within adult learning theory. Employing an alternative model of leadership tailored for natural resources and environmental leaders, the Natural Resources Leadership Institute (NRLI) advanced a new way of learning about how to influence integrative solutions to complex environmental issues. By analyzing their individual stories as a collective experience that occurred over a 10-year period, this study created an opportunity to explore the nature of the participants’ experiences and how these experiences contribute to the future of leadership development for natural resources and environmental leaders.

Rationale for the Research

Natural resources and environmental leadership is essential for responding to 21st century environmental problems and our future well-being (Gordon & Berry, 2006; Portugal & Yukl, 1994). Developing these leaders is a vital and pressing challenge for our time; it is important to develop leaders who are skilled in a discipline (Gardner, 2008) and skilled in interdisciplinary problem solving (Clark, Stevenson, Ziegelmayer, & Rutherford, 2001). There is substantial interconnectedness between natural and human systems, and the span of connections is widening such that significant changes that are occurring within these systems are now cross-scale, in both space and time, and half a world away (Capra, 1996; Holling, 1995). “We are,” says Blakely (1958), “one another’s physical environment” (p. 7).

The Environment in Context: A Brief Look

With a more connected world, human alteration of Earth is extensive and growing exponentially; human action has transformed between one-third and one-half of the land...
surfaces (Vitousek, Mooney, Lubchenco, & Melillo, 1997). Though changes to the environment have occurred since the beginning of time, unprecedented impacts, particularly from globalization, have changed ecosystems far more rapidly and extensively than in any other comparable time in history (Andrews, 1999; Clover, 2003; Finger & Asun, 2001; Marsh, 2003; McNeil, 2000; O’Sullivan, 1999; United Nations Millennium Ecosystem Assessment, 2005). While changes to natural systems have enhanced the economic welfare of developed countries, the increase in goods and services has amplified the demands and degradation of natural systems and exacerbated poverty and famine, in particular for indigenous people (O’Sullivan, 1999; United Nations Millennium Ecosystem Assessment, 2005; World Resources Institute, 2005).

Overpeck (2008) posits that new and formidable environmental challenges associated with climate change will eventually affect the availability of water and coastal communities, with sea level rise. Future challenges and predictions include scarcities of energy and food, an increase in invasive species and loss in bio-diversity, habitat fragmentation, and overexploitation of renewable resources and depletion of limited resources. Intensification of degradation to air, water, and soil, and other environmentally sensitive areas will result from continued rapid landscape transformation (Andrews, 1999; Heinz III Center, 2008; United Nations Millennium Ecosystem Assessment, 2005; World Resources Institute, 2005). Furthermore, new and emerging environmental issues may force policy decisions such as the dramatic rise in ice sheet instability (Overpeck et al., 2006) or the mega-discharge of pharmaceuticals into public resource waters (CBS News, 2009).

Prominent scientists such as Lovejoy (2007), Overpeck (2008), Sachs (2004), Vitousek et al. (1997), Holling, Gunderson, and Ludwig (2002), and researchers with the Resilience Alliance (2010), are examining changes to ecological systems and the rate at which these systems changes are occurring. In 2005 and 2008, teams of researchers contributed to two comprehensive state-of-the-environment reports, the Millennium Ecosystem Assessment (United Nations Millennium Ecosystem Assessment, 2005) and the State of the Nation’s Ecosystems (Heinz III Center, 2008). As one society takes the necessary
steps toward improvements, other areas in the world continue to suffer from famine, poverty, and war as a direct result of natural resources conflicts (Clover, 2003; Finger & Verlaan, 1995; Haugen, 2006). In spite of an uncertain future, scientists and decision-makers are expected to anticipate and define what is yet to come as they develop approaches to either reverse or mitigate the impacts of current and long-standing ecological challenges while maintaining our quality of life.

**Characteristics of Ecological Issues**

Ecological and sociocultural consequences of industrial development continue to be interlinked (Finger & Asun, 2001). Transcending political, jurisdictional, institutional, and geographic boundaries, environmental challenges represent layers of uncertainties and complexities (Bacow & Wheeler, 1987; Finger & Asun, 2001; Foster, 1993; Gordon & Berry, 1993; Gray, 1989; Sirmon, 1993). Six characteristics distinguish the inherent complexity and difficulties in managing ecological issues:

1. Complex interactions between natural and human systems, which often require multifaceted responses;
2. An emotionally charged and contentious context when competing interests or values surface;
3. Reliance on a scattered and less than integrated science base;
4. An integration of knowledge across a wide array of areas of understanding, disciplines, and attitudes;
5. A level of uncertainty and unintended consequences; and
6. A long time toward determination of options and solutions (Gordon & Berry, 2006).

During the past few decades, an atmosphere of decision gridlock has prevailed over regional resources, environmental policies, and management strategies in North America, Australia, and Europe, a polarization characterized by Holling (1995) as:

Conflicts are extreme, mutual suspicions dominate, and cooperation seems the road to personal defeat. Identifying an enemy and utterly destroying him or her seems
more important than finding win/win solutions. The result can be ecosystem deterioration, economic stagnation, and growing public mistrust. Alternatively, the result can be an abrupt reevaluation of the fundamental source of the problems, a redirection of policy toward restoration, and implementation of a process of planning and management that provides continually updated understanding as well as economic or social product. (p. 3)

Notwithstanding, leadership within public, private, and non-profit organizations including communities and non-industrial landowners, face numerous fiscal, social, and policy demands in addressing the transsocietal challenges and ramifications that result from an growing population (Gordon & Berry, 2006). “Maintaining populations, species, and ecosystems in the face of those changes, while maintaining the flow of goods and services they provide humanity, will require active management for the foreseeable future” (Vitousek et al., 1997, p. 499). Active management, then, must operate within a context of increased complexities, conflicting and competing values and beliefs, where ecological degradation cannot be separated from social, political, economic, and cultural problems (Finger & Asun, 2001).

**A Two-Fold Paradox**

It is a paradox, that humans flourish in spite of ecological changes, that the world has not collapsed (Holling, Gunderson, & Ludwig, 2002). The paradox is two-fold: ecological systems are resilient to change; and humans are persistent, creative, and able to learn (Holling et al., 2002). Examples abound of the tenacity and the ingenuity of humankind, including the willingness to learn from mistakes (O’Sullivan & Taylor, 2004). Ecological successes and transformation are evident in America’s history: the return of the bald eagle; improved water quality in rivers, lakes, and streams resulting in part from policies like the Clean Water Act (1972); innovations that have engendered efficient sanitation systems or reduced resource use through the process of recycling (Andrews, 1999).

Holling (1995) expressed unease with calls for action dominated exclusively by prophesies of impending crisis and doom. Doomsday calls for immediate action ignore what Holling refers to as “remarkable advances, learning, and understanding that have occurred
over the years”; and they “ignore the opportunities for conversations among and actions by previously polarized individuals that increase understanding and the ability to develop and apply integrated and adaptive policies” (p. 16).

“Learning, especially adult learning,” in the words of Robert Blakely (1965), is “fundamental to the solution of all social problems” (p. 54). Holling, Gunderson, and Ludwig (2002) recognize that nature, like human nature, is evolving; that “natural ecological systems have the resilience to experience wide change and still maintain the integrity of their functions”; and that “people’s adaptive capabilities have made it possible not only to persist passively, but also to create and innovate when limits are reached” (p. 18). Recognition of these evolutionary principles opens the door for competing scientific perspectives to distinguish where different types of stability loss occur in human and natural systems; where there is reversibility and irreversibility; and where cross-scale interactions occur. A role for learning (and programming) is inter-connections across disciplines so that ecological, economic, evolutionary, and social systems and the linkages between those systems can be understood and improved.

**Learning Our Way Out**

Blakely’s (1952) keynote address to the Second National Conference of the Adult Education Association, emulated provocative issues for his audience to ponder concerning the connections between human and natural systems, and the role of science in managing those systems:

In science, the delight at being able to weaken the ancient enslavement to nature still overbalances the new threat of destruction. The enchantment of methods distracts attention from consequences.

Are the unintended consequences of the application of science to the physical world an example of the senseless forces of history’s compulsions? Or, are they the product of our failure to deal intelligently with all the results of scientific development as these reveal themselves in the functioning of our society? (n.p.)

A current example of the sophisticated application of science with unintended consequences was the recent April 20, 2010 explosion that destroyed the offshore Deepwater
Horizon drilling rig. British Petroleum (BP) recently acknowledged they were unprepared to respond to a catastrophic deepwater oil spill in the Gulf of Mexico (Nelson & Geller, 2010). The magnitude of the unintended consequences has been profoundly significant, with immediate loss to the natural wildlife and aquatic species and their habitats, and the cultural and economic structure of coastal communities. The long-term significance of the Gulf oil spill to public health, the economy, and the environment remains unknown above and below the water line (Environmental Protection Agency, 2010a, 2010b).

Unintended consequences are not surprising. Western thinking traditionally separates natural history and human cultural history. For example, within adult education, there is a greater emphasis on inter-human problems to the exclusion of relationships between humans and the natural world; the dwelling on human-centeredness outside the context of natural history ignores long-standing connections of human and natural systems (O’Sullivan, 1999).

Similarly, ecological issues are often viewed in isolation rather than as the result of interactions among three complex systems: environmental, economical, and social. Ecological situations such as restoration, regional resource management, biodiversity, sustainable development, and global change require an understanding of the connections between nature and people in different settings, performing different roles (Holling, 1995). Ewel (2001) elucidated:

Simply understanding how an ecosystem functions is not enough to be able to manage it; rather it is essential to incorporate the perspectives of other disciplines like economics or sociology into the management plans, and to communicate any rationales and strategies effectively to the interested parties. (p. 721)

This disconnect brings to the forefront the habits of mind Mary Bateson (2000) reiterates in Steps to an Ecology of Mind, a book George Bateson, first wrote in 1972. George Bateson indicated that four habits of mind aggravate the relationship between the human and natural condition. The four habits are the:

1. search for short term solutions that worsen the problem over time, often mirroring it;
2. isolated focus on individuals, organisms, or species;
3. tendency to let technological possibility or economic indicators replace critical reflection and examination; and
4. maximization of single variables like profit rather than optimizing the relationships among a complex set of variables.

In order to change habits of mind and focus on the interactions among three complex systems, the environment, society, and the economy, unlearning and new learning become imperative prerequisites for ecological management and the survival of economies and civilization (Finger & Asun, 2001; Michael, 1995). How a learner comes to know what he or she knows, and why a learner values what he or she values, is part of deutero-learning (learning to learn), a process that result in habits of mind, and a process that can change habits of mind (Bateson, 2000b, 2000c). Superimposing and interconnecting many feedback loops, we solve problems and form habits that we apply to the solution of classes of problems (Bateson, 2000b). Critical thinking and self-reflection can lead to modifications or changes in the underlying meaning, and thereby, transforming understanding (Mackeracher, 2009). Welton (1987) posited that transforming societal structures is premised on the ability of adults to learn new ways of seeing the world and acting on the new information and perceptions.

The next frontier of learning should address the human and natural connections, demonstrating how learning can contribute to organizational change and transformation while accounting for vested interests and power structures that maintain the status quo (Finger & Asun, 2001). In their introductory statements to Organization and Environment, Foster, Jermier, and Shrivastava (1997) affirm that responding to the challenges between society and nature will require a spectrum of knowledge. From the natural, physical, social, and behavioral scientists to the scholars in the humanities, to the non-scientists and activists, who are technically skilled, and socially, artistically, and spiritually inspired contributors, all would be considered part of the spectrum. Strengthening the importance of convening “other ways of knowing,” through dialogue and deliberation, will generate new ecological
understandings (Adler & Birkhoff, 2004; Clover, 2003, 2005). Finger and Verlaan (1995) offer a conceptual framework that “there is no individual way out of the ecological crisis; rather a new system of learning is required, one that is simultaneously joint, cooperative, vertical, horizontal, and interdisciplinary in its character, philosophy, and structure” (p. 505).

Solutions or responses to environmental problems require communication, understanding, and collaboration among diverse disciplines and traditions (Christensen, 2006). Westley (2002), Gunderson, Holling, and Light (1995) indicate a key element in managing environmental complexities is when “individuals and small groups of individuals exert extraordinary influence performing certain distinct roles within and outside their organizations” (p. 334). Portugal and Yukl (1994) and Viluksela (2007) agree that effective leadership exerts extraordinary influence within and outside the organization as a response to social and environmental problems while facilitating sustainable and collaborative solutions (Wondelleck & Yaffee, 2000; Yaffee, 1995).

**New Paradigm for Leadership**

If active management is indeed a mission for the future, as Vitousek et al. (1997) indicated, it will take leadership, perhaps a new definition of leadership, and a change in habits of mind about how to prepare leaders for the current and emerging environmental challenges they will face (Addor, Cobb, Dukes, Ellerbrock, & Smutko, 2005; Day, 2000; Gordon & Berry, 1993). Rost (1993a), in his seminal critique of traditional leadership theory and studies, has challenged society to look toward a post-industrial paradigm of leadership, one focused beyond the leader and the development of his or her personal qualities and skills. Rost (1993a) argues that the concept of “leadership” is more complex than that of a leader in a position of authority; rather, it is a dynamic interplay between the role of follower and leader, as to what occurs in leadership.

Distinguishing the present leadership paradigm as leader-centric, chiefly influenced by industrialized thinking, Rost (1993a) characterizes this archetype as one with a:

1. structural-functionalist view of organizations,
2. view of management as the preeminent profession,
3. individualist or leader-centric focus of leadership,
4. dominant objective of goal achievement,
5. selfinterested and individualistic outlook,
6. utilitarian and materialistic ethical perspective,
7. rational, technocratic, linear, quantitative, and scientific in methodology and language. (p. 180)

According to Rost (1993a), the industrial paradigm values and norms used to describe leadership equate management with leadership. “Management,” says Rost (1993a), “is an authority relationship between at least one manager and one subordinate who coordinate their activities to produce and sell particular goods and/or services” (p. 145). Management is typically decisive, efficient, objective, and in control, ensuring a hierarchical process is followed. “Leadership, from a post-industrial perspective,” says Rost (1993a), “is an influence relationship among leaders and followers who intend real change that reflect their mutual purposes” (p. 145). Leadership is not what leaders do, but rather it is what leaders and followers do together, meaning the essence of leadership is the relationship, not the leader (Rost, 1993a). The post-industrial characteristics of leadership include:

1. A relationship based on multi-directional interactions and noncoercive influence. 
   The interactions can be vertical, horizontal, diagonal, and circular, meaning the leaders can influence the followers, and the followers can influence the leader.
2. Persuasion rather than authority, influencing relationships through discourse, reputation, personality, purpose, status, and content of message.
3. Leaders and followers who form the dynamic interplay of the relationship, meaning they both are doing leadership. Often there is more than one leader and more than one follower, and they may switch and share roles. The inequality in the relationship is due to the unequal influence patterns, not because of one’s position in the relationship.
4. Purposeful intention in the relationship, for seeking and promoting substantial change. The relationship of leadership is present, even if the change does not occur in the present but does so in the future.

5. Intended changes that reflect the mutually developed purposes of the leaders and followers (Rost, 1993a).

Rost (1993a) contends that current models of leadership are inadequate for resolving serious challenges facing the modern world. Along with other researchers, he is calling for a new paradigm of leadership to address 21st century issues like environmental challenges (Addor et al., 2005; Apps, 1994; Burns, 2003; Chrislip & Larson, 1994; Clark et al., 2001; Egri & Frost, 1994; Egri & Herman, 2000; Gordon & Berry, 1993, 2006; Heifetz, 1994; Peine, Long, & Noltenius, 2005; Wheatley, 1999; Yaffee, 1995).

What are other leadership aspects for the 21st century, in particular for natural resource and environmental leadership? Johnson (2008) stated, “effective leaders are effective not because they have more knowledge or experience than ineffective leaders; rather it is because they have a more valid and effective way of handling the complex issues they face” (p. 85). The difference is the mental models or meaning structures of the individual leaders, and the way they choose to view and respond to their world. Rather than simply relying on new information that increases one’s knowledge or depth of knowledge about a particular subject, transformative learning experiences can help develop new mental models for handling complex phenomena. Feyerherm (1994) confirms a similar finding in her research owing to the essential nature of an inter-organizational context and the management of meaning. Surfacing assumptions through divergent thinking, and then converging on common meaning, helps incorporate multiple meaning into a collective purpose and outcome.

Leadership as an influential process (Burns, 1978) can mobilize, and create change both within organizations and between organizations to share in finding solutions to environmental problems. Ignoring the systemic nature of leadership processes creates the illusion that traditional leaders, leaders of authority and position, should be the focus of
leadership studies (Allen, Stelzner, & Wielkiewicz, 1998b). Portugal and Yukl (1994) define two characteristics of effective natural resource and environmental leadership for the 21st century as:

1. Understanding the dichotomy of interrelatedness, the importance of internal and external relationships, and being able to reconcile the diverse and often competing demands in these relationships.

2. Looking for integrative solutions that minimize costs that yield economic and environmental benefits. (Portugal & Yukl, 1994)

Natural resources and environmental leaders who recognize the dichotomy of interrelatedness and the importance of relationships within and outside the organization are more likely to be successful. Due to the complexity of socio-economic-environmental issues, the influence process requires leadership and a shared effort at various levels within the organization and between external colleagues, stakeholder groups, and other external organizations.

Leadership that can be learned, is responsive to the characteristics of environmental issues, and is purpose-driven, is necessary to solve environmental problems (Allen et al., 1998b; Gardner, 1990; Gordon & Berry, 1993). Leadership that increases the capacity to learn new ways of understanding, defining, and solving complex problems, and gives voice to those who are detrimentally affected by globalization, is essential in adapting to these kinds of challenges (Clover, 2003; Heifetz, 1994). Leadership of the 21st century requires skills and forethought, responsiveness to the characteristics of socio-economic-environmental issues within a given culture, geographic location, and interaction between the human and natural systems.

Allen and colleagues (1998b) advocated drawing upon ecological principles in order to understand the role that future leadership processes can play in creating a sustainable and generative future. Leadership, shaped by the ability to continuously learn and evolve, is a process that brings people, ideas, and other systemic elements into new relationships so that organizations can develop strategies to cope with adaptive challenges. Globalization and
competition for resources, in conjunction with differences of opinion on how to manage natural resources and environmental issues, necessitates a diverse repertoire of leadership skills including transformational behaviors, conflict management, problem solving skills, and building partnerships and coalitions with various internal and external stakeholders (Addor et al, 2005; Brewer, 2004; Dietz et al., 2004; Egri & Herman, 2000; Feyerherm, 1994; Levi, 1999; Manolis et al., 2008; Portugal & Yukl, 1994; Westley, 2005; Yaffee, 1995). These goals are necessary for successful leadership in the 21st century (Christensen, 2006; Egri & Herman, 2000; Portugal & Yukl, 1994; Westley, 2005).

Leadership that shares power, personally and organizationally, is very different from leadership that amasses power and seeks to defend hierarchies of authority (Crowfoot, 1993). Historically, leadership has emphasized hierarchical systems, positions of title that build and maintain resources to create the capacity for change, excluding shared models of leadership and leadership exercising multiple roles (Gordon & Berry, 2006; Heifetz, 1994; Manolis et al., 2008; Rost, 1993a; Senge, 1996). A new paradigm of leadership incorporates characteristics or values such as collaboration, common good, and diversity. A structure is created for the participation and the leadership of others, one that can enhance the meaning making process (Mackeracher, 2009). Consensus-oriented processes can generate a mutual educational framework built on the collective knowledge and discussions of stakeholders to achieve a purpose (Rost, 1993a). Although the post-industrial paradigm of leadership is not “the” solution, it is a means for transforming the current situation.

**New Paradigm for Leadership Development**

Development is a process of interaction. An individual is the interaction within the organism of new experiences with an ever-growing structure of previous experiences. A society is the interaction of individuals with individuals. A country is the interaction of a people and their land. These processes are all linked and extended in time. (Blakely, 1965, p. 2)

Day (2000) advocates creating distinctions between leader development and leadership development. Leader development, or the development of human capital, is the emphasis on intrapersonal skill development of the individual leader, often someone with a
formalized leadership role who is leading an organization. Leadership development, or the development of social capital, is the emphasis on interpersonal development through enhancing cooperation and resource exchange, including growing partnerships and relationships.

In leader development, the emphasis is on skill development of the individual leader, often someone with a formalized leadership role who is leading an organization or aspects of the organization (Day, 2000). Organizations focus training resources on the development of their human capital or their leaders. The development of the leader emphasizes intrapersonal competencies, specifically the problem solving capacity to understand and work with oneself (Gardner, 2006). Other intrapersonal capacities include critical thinking, self-reflection, and self-control, resulting in self-awareness (Mackeracher, 2009).

Leadership development, on the other hand, is social capital development (Day, 2000). Dixon (1993) elaborates further that leadership development is the process for building the capacity of groups to learn their way out of unforeseen challenges and problems or in anticipation of unforeseen circumstances. Day (2000) posited, “leadership is developed through the enactment of leadership; leadership emerges with the process of creating shared meaning, both in terms of sense-making and in terms of value-added” (p. 605). Thus, the emphasis of leadership development is interpersonal development, in particular the problem solving capacity to understand and work with others (Gardner, 2006). Other interpersonal capacities are engaging in dialogue with others (Mackeracher, 2009) that enhance cooperation and resource exchange, and grow partnerships and relationships.

The contrast between leader development as intrapersonal, traditional, and managerial, and leadership development as interpersonal, shared, and relational, illustrates the differences between the two concepts as well as areas of convergence in order to form an integrative development strategy. A part of good leadership is the ability to lead by being willing to be led (Burns, 1978). An effective understanding of leadership requires relating to others, building relationships, and applying self-understanding through interconnections and the continued development of intrapersonal competence (Allen et al., 1998b).
Leadership also maintains a definable skill set necessary to perform on-the-job functions such as GIS mapping or wildfire management (Clark et al., 2001; Gardner, 2008). A discipline is essential, for instance, to improve organizational effectiveness, protect species, and prevent ecosystem loss. Yet leaders must be explicitly versed in intrapersonal and interpersonal skill development to have the wherewithal for interdisciplinary problem-solving, critical thinking, observation, management, and technical proficiency (Clark et al., 2001). Some researchers have begun to examine the skills that future natural resources and environmental leaders will need for the 21st century (Brewer, 2004; Dietz et al., 2004; Gordon & Berry, 1993, 2006; Manolis et al., 2008; Portugal & Yukl, 1994; Westley, 2005) and have determined that program design, planning, and ultimately, preparation of future leadership is extremely important.

The principle of continuous learning shapes 21st century leadership by putting into practice new ways to deal with issues about self and others that contribute to the value and the development of relationships, interconnections, and the situation or context. For the 21st century, leadership development will prove to be an integrative strategy that links leader development as well as leadership development with more emphasis on the post-industrial definition of leadership offered by Rost (1993a):

an influence relationship among leaders and followers who intend real change that reflect their mutual purposes. Leadership is not what leaders do, but it is what leaders and followers do together, meaning the essence of leadership is the relationship, not the leader. (p. 145)

Leadership in this model is viewed as an influential process that can mobilize and create change within and between organizations (Burns, 1978). Durant, Fiorino, and O’Leary (2004) suggested that building a “results-based sense of common purpose among diverse public, private, and nongovernmental stakeholders” might involve a leadership development model that trains leaders to manage the interactions between and within each leader’s organization.
**Limitations of Current Research**

The four major limitations in the existing knowledge are in adult education, leadership, leadership development, and qualitative research in leadership and leadership development.

**Adult Education**

The leadership literature in adult education is focused on leadership in the field of adult and continuing education, on the adult educator as administrators, program planners, leaders of associations, and communities. The leadership literature in adult education most often describes leadership as an administrative function (Courtney, 1990). Additional studies, like Fleming and Caffarella’s (2000), distinguish types of leadership, characteristics, actions, beliefs, and values of adult educators as leaders, in an effort to understand the perspectives of adult and continuing educators on leadership. Defining the context and dimensions of leadership, one implication of their study is the need for research focused on the follower or on those subject to “leadership.” Bartling and Bartlett (2005) conducted a study on the self-perceived leadership behaviors and styles of adult educators to demonstrate a profession of individuals with transformational qualities. Qualities suited for *Leadership for the Emerging Age*, Apps (1994) characterized the move toward the future as one that is shifting from mechanistic attitudes of objectivity, control and predictability, competition and efficiency, and singular ways of knowing to one of shared power, multiple knowledge sources, and relationships, and one with a high level of uncertainty.

“Environmental concerns have largely been neglected in adult education discourse and practice,” say Clover and Hill (2003, p. 1). Examples of the growing body of literature include environmental adult education, ecological learning theory, and socio-environmental change (Belanger, 2003; Clover & Hill, 2003); the role of transformative learning in building an ecozoic vision, one where human and natural processes align (O’Sullivan, 1999); and the contribution of adult learning to organizational change and transformation, taking into account vested interests and power structures (Finger & Asun, 2001). Discussions about environmental concerns in adult education are primarily focused on raising awareness about
ecological destruction. Others theorize that the ultimate challenge to adult education is in its role to help *learn our way out* through individual and collective learning that transforms organizations (Finger & Asun, 2001; Finger & Verlaan, 1995). Clover and Hill (2003) posit,

> More opportunities that are educational are required in order for adults to come together and collectively share experiences and learn from each other, challenge assumptions and discursive norms, and create new knowledge for socio-environmental change. Environmental adult education is one framework within which adult educators can facilitate collective learning opportunities for adults around ecological concerns in order to formulate concrete responses. (p. 1)

Leadership development is another learning framework that adult educators can use to facilitate learning opportunities around ecological concerns. Adult educators, as program planners, can help prepare critically reflective learners to learn collectively and plan for change in a directive way.

**Leadership**

Largely, the existing literature on leadership focuses on understanding and developing leaders to lead organizations, particularly within corporations, the military, religious institutions, and public administration, emphasizing hierarchical systems and positions of authority (Gordon & Berry, 2006; Heifetz, 1994; Kellerman, 1999; Manolis et al., 2008; Rost, 1993a; Senge, 1996). Leadership is often equated with levels of authority and particularly the supervision of others. The leader-centric literature is particularly appropriate in understanding how individuals are expected to influence the contributions of others in supporting and achieving the organization’s mission and vision (Day, 2000).

An aspect of leadership that is largely unexamined is natural resources and environmental leadership (Dietz et al., 2004; Gordon & Berry, 2003; Manolis et al., 2008; Newman et al., 2007). Leadership involved in solving complex socio-economic-environmental issues is not limited to one affiliation, agency, partnership, or profession. Rather, leaders who might be able to manage or resolve these issues come from all three sectors: public, private, and non-profit (Addor et al., 2005). Hence, natural resources and environmental leaders provide leadership from within their respective organizations and with
other organizations and communities as a collaborative response to environmental concerns (Addor et al., 2005; Beierle & Cayford, 2002; Kettl, 2002). Sufficient attention has not been given to understanding the dynamics of the learning processes that occur as these leaders work within and across sectors with other organizations (Holmqvist, 2003), particularly in the area of stakeholder decision-making processes (Feyerherm, 1994; Westley, 2002).

Furthermore, while natural resources and environmental leaders may be in a managerial or specialist positions with a specific area of expertise such as enforcement of regulatory policy, they may or may not supervise others (Manolis et al., 2008). According to Senge (1996), truly innovative and adaptive companies recognize healthy leadership ecology requires three kinds of leaders: front line leaders, such as branch managers, project leaders, and other credible front-line performers; internal networkers, such as front-line workers, in-house consultants or trainers, and professional staff; and executive leaders or senior leaders, who are considered final decision-makers within an organization. The initiative of front-line leaders drives the change effort; the internal networkers generate innovative practices to accomplish purposes and goals; and the executive leadership provides support that ensures the success of the change effort.

Although the historical and current literature contributes significantly to understanding leadership in practice and theory, the existing literature is incomplete without examination and discourse in the areas of natural resources and environmental leadership. The literature is particularly inadequate in suggesting solutions for preparing leaders who spend a significant portion of their time working at an inter-organizational level to address the existing and future environmental challenges they face (Allen et al., 1998a; Feyerherm, 1994; Gordon & Berry, 1993, 2006; Portugal & Yukl, 1994; Vredenburg & Westley, 2002; Westley, 2005). The importance of examining natural resources and environmental leadership cannot be overstated.

**Leadership Development**

Another aspect of leadership that is largely unexamined is preparing natural resources and environmental leadership for the 21st century (Brewer, 2004; Conger, 1998; Dietz et al.,
2004; Manolis, 2008). This includes successional leadership planning in addition to preparing natural resources and environmental leaders to lead within their organization and lead with other organizations in response to the environmental challenges.

While there is a growing urgency to address the unprecedented environmental issues being faced, Peine et al. (2005) and Westley (2005) contend there is a new urgency in preparing both emerging leaders in all sectors to respond to environmental challenges given the impending loss of leadership and experience that will result with the retirement of the baby boomers. Making up a third of the work force, the retirement of the baby-boomer generation is expected to create a dearth in the capacity of the workforce, taking with them the skills, experience, and the institutional knowledge that years of on-the-job training and professional development have fostered. With the mass exodus of the baby boomers, it is crucial to consider how to prepare future leaders who will respond to current issues and face new environmental challenges.

According to Peine et al. (2005), roughly half of the federal work force was eligible for retirement in 2008, which included leaders in the Environmental Protection Agency, the U.S. Forest Service, and the Department of Interior, all of whom manage highly controversial and complex environmental issues. Other sectors of leadership will experience the ramifications of the baby-boomer retirement phase, including private and non-profit sectors such as educational institutions (Wiessner & Sullivan, 2007).

Training and development has traditionally focused on the development of leaders with formal or supervisory authority within an organization (Day, 2000). However, as Day (2000) stresses, focusing primarily on intrapersonal, or leader development ignores 50 years of research that documents the complex interaction between the leader, and the social and organizational environment. The existing development literature falls short in two areas: in examining development programs that incorporate both leader and leadership development, and particularly in examining the development of natural resources and environmental leadership.
Leadership of the 21st century will require the skills and responsiveness to the six ecological characteristics identified Gordon & Berry (2006). While traditional business models of leadership praise short-term organizational achievements and competitiveness, socio-economic-environmental issues often require long term planning and assessment, iterative decision-making, and diverse participation from many kinds of professionals and citizens. Leadership and the development of leadership is a form of learning that cannot be separated from the larger cultural context (Gardner, 1990).

**Qualitative Research in Leadership and Leadership Development**

Qualitative research is typically underutilized in studies on leadership (Conger, 1998; Ospina, 2003). One possible explanation for underutilization is that some researchers may limit qualitative inquiry to descriptive or exploratory analysis of leadership. Conger (1998) and Ospina (2003) challenged this explanation, due to the complexity of the leadership phenomenon. Qualitative research can and should play a role throughout the leadership investigative process. “Leadership involves multiple levels of phenomena, possesses a dynamic character, and has a symbolic component” (Conger, 1998, p. 109). The advantages of conducting qualitative research on leadership are identified as (Conger, Bryman, & Alvesson as cited in Ospina, 2003):

- flexibility to follow unexpected ideas during research and explore processes effectively;
- sensitivity to contextual factors;
- ability to study symbolic dimensions and social meaning; and
- increased opportunities to develop empirically supported new ideas and theories, in-depth and longitudinal explorations of leadership phenomena, and for more relevance and interest for practitioners. (p. 2)

In addition to underutilization of qualitative research on leadership studies, Conger (1998) raised additional concerns about the shortage of qualitative studies on the development of leadership.
Purpose of the Research

The purpose of this interpretative study was to explore in depth the experiences of natural resources and environmental leaders who participated in a leadership development institute and situate these experiences within adult learning theory. Employing an alternative model of leadership tailored for natural resources and environmental leaders, the institute advanced a new way of thinking about how to influence integrative solutions to complex environmental issues. By analyzing their individual stories as a collective experience that occurred over a 10-year period, this study explored the nature of the participants’ experiences and how these experiences contribute to the future of leadership development for natural resources and environmental leaders.

Research Question

The overarching research question for this study was: What was the nature of the experiences of leaders who participated in a natural resources leadership institute?

Significance of the Research

The significance of this research was introducing an adult learning model in leadership development tailored to natural resources and environmental leaders as a way to facilitate integrative solutions to complex resource and environmental problems. In this model, additional dimensions are added to the construct of leader, leadership, and leadership development.

The results of this study contributed an interpretative body of knowledge about the nature of experiences of leaders who participated in a natural resources leadership institute and how this knowledge:

1. Intersects with a contemporary and historical body of knowledge in adult education, leadership and leadership development, environmental conflict resolution, and qualitative research on leadership and leadership development;

2. Enriches our understanding about the many facets and complex nature of leadership in the natural resources and environmental profession;
3. Links actions and impacts in an environmental-socio-economic context between local, county, state, regional, and national initiatives; and

4. Contributes to the preparation of natural resources and environmental leaders for the 21st century.

Natural Resources and Environmental Leadership is best understood as a process that involves two levels of influence (individual and organizational) and two types of influence relationships (internal and external) (Portugal & Yukl, 1994). Leadership is more likely to be successful if natural resources and environmental leaders understand how influence processes at the individual and organizational level are interrelated. Without interrelations between key individuals inside and outside organizations, policies and programs are unlikely to be implemented (Portugal & Yukl, 1994); and collaboratives are unlikely to be initiated.

For the 21st century, leadership development will prove to be an integrative strategy that links leader development as well as leadership development with more emphasis on the post-industrial definition of leadership offered by Rost (1993a):

…an influence relationship among leaders and followers who intend real change that reflect their mutual purposes. Leadership is not what leaders do, but it is what leaders and followers do together, meaning the essence of leadership is the relationship, not the leader. (p. 145)

The Natural Resources Leadership Institute is one adult learning model that demonstrates an integrative strategy of leader development and leadership development, leading to the expansion of cross-sectoral and cross-cultural interrelationships between leaders, organizations, and inter-organizational networks. A system of learning, it is simultaneously joint, cooperative, vertical, horizontal, and interdisciplinary in its character, philosophy, and structure, a conceptual framework to help “learn our way out” (Finger & Verlaan, 1995, p. 505). Shifting from hierarchical models of leadership to heterarchial models that bring together both elements of networks and organizations is proving to be the most relevant structure for the 21st century (Sandmann & Vandenberg, 1995).

Presented throughout using the voices of the participants, an analysis of their individual stories documented a collective experience that occurred over a 10-year period. In
response to the overarching research question for the study: *What was the nature of the experiences of leaders who participated in a natural resources leadership institute?*, five primary themes emerged from the in-depth and rich perspectives of the participants:

1. Context of the NRLI Learning Experience
2. The Practicum: Planning for Change in Inter-organizations
3. The Rationale for Leadership Development
4. Integration of Leader Development and Leadership Development
5. Shaping a Learning Community or Cultivating a Community of Practice

Based on the findings in Chapter 5, implications for practice were engendered, including implications tailored specifically for the institute. A section on recommendations for future research followed implications for practice and conclusions of the research.

**Summary**

The purpose of this interpretative study was to explore the experiences of natural resources and environmental leaders who participated in a leadership development institute that advanced a new way of learning about how to influence integrative solutions to complex environmental issues. Situating these experiences within adult learning theory, the study analyzed the experiences of 11 institute participants from 1999-2008, representing a mix of leaders from the public, private, and non-profit sectors, including a community leader.

Introduced early in the chapter was the importance of ensuring that natural resources and environmental leaders for the 21st century can be responsive and prepared for the challenges they will face. As the interconnectedness between human and natural systems expands, leadership will be essential for ensuring the health and resilience of natural and human systems. Restoring, managing, sustaining, and/or mitigating natural systems will remain strategic into the future even as new approaches, technologies, plans, and policies are developed. Natural resources and environmental leadership has a crucial role in managing the current and anticipated environmental challenges and will play a significant role in the 21st century.
A glimpse of the current ecological situation was presented. Rather than viewed in isolation, ecological issues can be seen as interactions between social-economic-environmental circumstances (Holling, 1995). Six characteristics convey the complexities and difficulties involved in traversing the political, institutional, geographic, and jurisdictional boundaries, and reduce the chances of maintaining natural systems when competing with the drive to maintain the flow of goods and services. The paradox is that the world probably should have collapsed, but it has not, in part because of humankind’s ingenuity and ability to learn; and in part because ecological systems are resilient (Holling, 1995).

The four habits of mind, reiterated by Mary Bateson (2000) in her *Foreword* section, are said to disadvantage connections between human and natural systems. For those willing to learn new ways of seeing the world and act on new information, change is possible. Finger and Verlaan’s (1995) conceptual framework cautions that, “there is no individual way out of the ecological crisis; rather a new system of learning is required” (p. 505). This will take rethinking the relationship between learning and organizations. Although organizations are dynamic, they are also powerful, comprised of vested interests and actors who prefer the status quo. The vision of a new learning system, according to Finger and Verlaan (1995), is one that values an interdisciplinary character, philosophy, and structure, and operates simultaneously both vertically and horizontally in a joint and cooperative manner.

A new paradigm of leadership is needed to respond to the complex problems of the 21st century. “Leadership, from a post-industrial perspective,” says Rost (1993a), “is an influence relationship among leaders and followers who intend real change that reflect their mutual purposes” (p. 145). Based on Rost (1993a), the essence of leadership is the relationship, not the leader.

For the 21st century, leadership development will prove to be an integrative strategy between the two concepts: leader development and leadership development. The former will be based on intrapersonal skill development and the latter on interpersonal skill development.
A review of the literature review identified four areas where significant contributions can be made. Within the adult learning literature, natural resources and “environmental concerns have largely been neglected in adult education discourse and practice,” say Clover and Hill (2003, p. 1). Aspects of considerable promise are how adult learning can contribute to organizational change and transformation, taking into account vested interests and power structures (Finger & Asun, 2001), in particular using social learning theory as a means to describe the leadership development process. In conjunction, andragogy, as an adult learning theory, was used to describe leader development, with its primary focus on the self-actualization of the individual. Both andragogy and social learning theory describe the value of knowledge that is gained from experience.

One aspect of leadership that is largely unexamined is natural resources and environmental leadership (Dietz et al., 2004; Gordon & Berry, 2003; Manolis et al., 2008; Newman et al., 2007). The literature has focused instead on leading organizations within corporations and other institutions or on the individual characteristics of leaders within a particular profession (Bartling & Bartlett, 2005; Fleming & Caffarella, 2000). Natural resources and environmental leaders who recognize the dichotomy of interrelatedness and the importance of relationships within and outside of the organization are more likely to be successful.

The third literature area is leadership development. Preparation is certainly one aspect of effective leadership. Examples of leadership development literature for natural resources and environmental leaders are limited (Addor et al., 2005; Newman et al., 2007; Westley, 2005). Given the ongoing retirement of the baby boomer generation, it becomes critical to prepare natural resources and environmental leaders in their roles as environmental decision-makers and in preparation for current and future ecological challenges.

The fourth area is the underutilization of qualitative research in the studies on leadership and leadership development (Conger, 1998; Conger & Toegal, 2002). The phenomenon of leadership appears to be multi-dimensional, and qualitative research can play a role in understanding how leadership is carried out in its various dimensions.
Using an Interpretative Phenomenological Analysis (IPA) approach, this study examined the experiences of natural resources and environmental leaders who participated in a leadership development institute that advanced a new way of learning about how to influence integrative solutions to complex environmental issues. Having analyzed their individual stories as a collective experience that occurred over a 10-year period, this study created an opportunity to explore the nature of the participants’ experiences and how these experiences contribute to the future of leadership development for natural resources and environmental leaders.

A major implication of this research is the introduction of a leadership development model that allows adults to “come together and collectively share experiences and learn from each other, challenge assumptions and discursive norms, and create new knowledge for socio-environmental change” (Clover & Hill, 2003, p. 1).

The leadership development model offered here is another learning framework from within which decision-makers, educators, scientists, and implementers can begin to facilitate dialogue and deliberation in order to develop options for environmental-socio-economic concerns.
CHAPTER 2
LITERATURE REVIEW

A lack of a common definition about leadership should not preclude research into the natural resources and environmental leadership. Ospina explains (2003):

A post-modernist approach to leadership research is in its early stages. Rejecting the search for a “grand” theory of leadership, Alvesson invites researchers to take seriously the ambiguity of “leadership” itself. Knowledge about leadership cannot emerge through fixed procedures organized to arrive at abstract conclusions, he argues. Researchers must create more open forms of inquiry, focus on local patterns, and acknowledge that meaning is jointly constructed with participants. (p. 6)

This literature review combines multiple studies and demonstrates their collective relevance to understanding a particular issue and explaining a relationship (Schwandt, 2001). In this interpretative process, the researcher gives meaning to what has been read and organizes the literature in an effort to support and communicate the value of learning and leadership research. The literature review is part of the framework for establishing the importance of the study; it serves as a benchmark for comparing the results of the research with other studies in the literature (Creswell, 1994). Conducted in the “spirit of interpretive scholarship,” the literature review for this study (Eisenhart as cited in Schwandt, 2001):

examined conventional and historical wisdom in order to reveal something surprising, startling, or new, demonstrated how the meaning of human action varies by socio-cultural context, and provided links to the current discourse to cause thinking about the subject to expand. (p. 232)

Egri and Frost (1994) reported that gaining a richer and deeper understanding of environmental leadership often involves the iterative and ongoing process of qualitative research, one that requires self-reflection, adjustments in data analysis, and responses to prior frameworks and understandings.

Conceptual Framework

A conceptual framework helps guide and inform inquiry about phenomena, though seldom does it embody the phenomenon in all of its complexities, only a representation of it
(Denzin & Lincoln, 2005). A conceptual framework provides an emerging explanation of the key factors, constructs, or variables to be studied, and the presumed relationships amongst a “mountain of particulars” (Miles & Huberman, 2004, p.18).

The conceptual framework for this study included:

- the larger context of the environmental-socio-economic issues and the characteristics of those issues,
- the multiple perspectives of the natural resources and environmental leaders,
- the distinction and importance of recognizing leader development and leadership development,
- the two-dimensional influence relationship between the leader and the organization both internally and externally, and
- constructing meaning from experience.

In Figure 1, the environmental-socio-economic context is focused particularly on ecological issues, the basis of the conceptual framework. Enclosed within this larger context of the conceptual framework are the characteristics of ecological issues as identified by Gordon and Berry (2006), which include:

- Six characteristics distinguish the inherent complexity and difficulties in managing ecological issues:
  - Complex interactions between natural and human systems, which often require multifaceted responses;
  - An emotionally charged and contentious context when competing interests or values surface;
  - Reliance on a scattered and less than integrated science base;
  - An integration of knowledge across a wide array of areas of understanding, disciplines, and attitudes;
  - A level of uncertainty and unintended consequences; and
  - A long time toward determination of options and solutions.
Figure 1. Environmental-Socio-Economic Context
Each researcher approaches the world with a set of ideas, an interpretative framework or theory that specifies an epistemology or set of questions to be examined in specific ways using a particular methodology or framework for analysis (Denzin & Lincoln, 2005). These beliefs constitute the interpretative paradigm of the researcher, including the conceptual framework, and any prior explanations the researcher brings to the study process (Denzin & Lincoln, 2005).

For the novice qualitative researcher, it is a confounding process to determine an appropriate theoretical fit from the various theoretical paradigms. An interpretative framework, advises Patton (2002), provides guidance to the researcher and serves as a basis for interaction among researchers, though that same framework and its principles can impede interaction across multiple perspectives. “All research is interpretative; it is guided by the researcher’s set of beliefs and feelings about the world and how it should be understood and studied” (Denzin & Lincoln, 2005, p. 22).

Although there is not agreement on what the general theoretical traditions are, the tension in recognizing and contrasting these traditions serves to develop and inform the researcher. Understanding the researcher’s perspectives about the world is crucial to understanding the framework of the study. There are numerous theoretical paradigms to distinguish qualitative inquiry, including variations and evolutions of these conceptual frameworks. Although overlaps are evident in the classifications of theoretical paradigms, there are distinctions and contradictions. Denzin and Lincoln (2005) depicted qualitative frames of inquiry as research strategies and instead proposed four major interpretive paradigms: positivism, post-positivism, constructivism-interpretative, critical, and feminist-post-structural. Contrasted with their list is one developed by Lincoln and Guba (2005), who analyzed five major interpretative paradigms as a general theoretical foundation for qualitative research: positivism, post-positivism, critical theories, constructivism, and participatory. For this study, the interpretative paradigm is constructivism, particularly social construction, and critical social-environmental theory as presented and examined in the subsequent sections of the literature review.
**Natural Resources and Environmental Leadership**

For the purposes of the study, natural resources and environmental leadership is defined as the ability of an individual or group to influence, guide, and mobilize positive change toward a shared vision for long-term sustainability. For the purposes of this research, natural resources and environmental leaders represent working professionals of public entities including local, state, and federal agencies; working professionals of non-governmental organizations such as environmental and conservation groups; private entities including consultants, business, industry, and corporate leaders; educators who provide outreach or educational training on natural resources or environmental topics; scientists who research natural resources or environmental topics; and community and grassroots leaders and volunteers.

The Natural Resources and Environmental Leadership conceptual framework acknowledges the differences and the relationship between developing leaders (the human capital) and developing leadership (the social capital) as introduced by Day (2000). The former emphasizes the development of individual capabilities, and the latter emphasizes building networked relationships among individuals to enhance cooperation and resource exchange. Effective leadership requires attention to both kinds of capital, the human and the social, in a blend of the interpersonal and intrapersonal aspects that comprise leadership development (Goethals, Sorenson, & Burns, 2004).

A two-dimensional approach to natural resources and environmental leadership exists. However, this aspect is not illustrated in the Figure 1; rather, the brief narrative discusses the importance of the influences and relationships both within an organization and between organizations. As described by Portugal and Yukl (1994), this process involves two levels of influence (individual and organizational), and two types of influence relationships (internal and external). Leadership, as an influential process (Burns, 1978), can mobilize, and create change both within organizations and between organizations that share in finding solutions to environmental problems.
Review of Constructivism and Social Constructionism

Constructivism serves as the main theoretical lens for this research, and specifically, social constructionism, a strand of constructivism that emphasizes social process and interaction (Patton, 2002). Constructivism, as an ontological concept helps explain how human beings interpret or construct ideas, objects, and facts in specific linguistic, historical, or social contexts (Schwandt, 2001).

Constructivism emerged as the leading symbol of human learning as critics such as Vygotsky challenged behaviorism and information-processing approaches as being too narrow and intrapersonal (Liu & Matthews, 2005). Constructivism is an elusive term (Schwandt, 2001). Rather than being a single unified theory, constructivism is a cluster of related perspectives (Merriam & Brockett, 1997). Neither perfunctorily nor mechanically derived, constructivists accept that knowledge is socially constructed within the constraints of the learning environment. “Constructivists invent concepts, models, and schemes to make sense of experiences, and continually test and modify these constructions in light of new experiences” (Schwandt, 2001, p. 38).

With roots in sociology, Denzin and Lincoln (2005) posited that a “constructivist paradigm assumes a relativist ontology (there are multiple realities), a subjectivist epistemology (knower and respondent co-create understandings), and a naturalistic (in the natural world) set of methodological procedures” (p. 24). Therefore, knowledge can be defined as the meaning that people make of their experiences since the learner is central to the learning process. Built on the thesis of ontological relativity, constructivists study multiple realities shaped by cultural and linguistic constructs, and the interpretations of human beings (Patton, 2002).

Influential constructivist theorists include educational psychologists Piaget, Papert, Von Glaserfield, and Vygotsky; sociologists Berger, Gergen, and Luckmann; and the eminent educator, Dewey. Schwandt (2001) contends that there are two broad strands of constructivism: radical constructivism (or psychological constructivism) and social constructivism. Some constructivists are concerned with the two poles of constructing
knowledge, from the individual or cognitive perspective to the social constructivist perspective. Phillips (1995) describes three dimensions of constructivism. The first dimension is the individual psychological or quintessential constructivism as proposed by Piaget. The second dimension is a continuum of constructivists from the creator to the instructor, willing to consider knowledge constructed by the individual as well as knowledge constructed by human communities. The third dimension is active constructivism, in which the knower is not a spectator of the knowledge construction but rather is an organic part of the situation to be identified.

The following section includes an examination of the philosophical roots of constructivism, including the three particular strands of constructivism: cognitive, radical, and social constructionism.

**Cognitive Constructivism**

Piaget, a biologist and child development psychologist, explored how children constructed knowledge. Long regarded as the father of cognitive development, he made significant contributions in the realm of educational psychology (Phillips, 1995). Through biological mechanisms such as motor skill development and psychological mechanisms such as language and conceptual development, Piaget theorized how children developed and matured through various stages (Ackermann, 2001). For Piaget, children were not only building their view of the world but also held views of the world as they interacted within it. The individual learner made sense of the interactions and assimilated them into a developing or existing framework if the new knowledge or experience aligned with the learner’s internal representation of the world.

Cognitive constructivism describes how the “individual cognitive agents [individual learners] understand the world and make their way around in it by using mental representations that they have constructed” (Nola & Irzik, 2005, p. 151). Each learner creates mental models or schemas, and these models become more sophisticated through the ongoing process of accommodation and assimilation. For Piaget, the process of accommodation and
assimilation occurred within the independent child, not as a direct result of instruction but because of the interaction (Ackermann, 2001).

Like Piaget, Vygotsky was also a pioneering child psychologist who explored how children constructed and developed knowledge. Whereas Piaget theorized that children constructed knowledge through biological and psychological mechanisms, Vygotsky focused on the role of society in the development of children (Phillips, 1995). For Vygotsky, children developed on two planes: first in an interpersonal process where knowledge could be constructed with others, and then on an intrapersonal process within the child (Liu & Matthews, 2005). Hence, young learners needed the help of adults to support them as they were learning how to think and interact within their world. Vygotsky studied the use of cultural artifacts, such as tools, language, and people, as potential resources for drawing out cognitive potential within individuals (Ackermann, 2001).

**Radical Constructivism**

Radical constructivism, promoted by Von Glaserfield, stated that cognizing agents construct all knowledge (Phillips, 1995). A precept of radical constructivism similar to cognitive constructivism is that knowledge is not passively received but rather is built up by the cognizing agent as the learner interacts with the experience (Nola & Irzik, 2005). Two tenets of radical constructivism distinguish it from other dimensions of constructivism: “the function of cognition is adaptive, in the biological sense of the term, tending towards fit or viability; and cognition serves the subject’s organization of the experiential world, not the discovery of an objective ontological reality” (Nola & Irzik, p. 153).

The concept of knowledge is an adaptive function within the human brain, a process intended to help the learner cope or self-organize with viable interpretations of the world and experiences, toward some point of balance or equilibrium, rather than to determine an objective reality. Perhaps the most far-reaching characteristic of radical constructivism is the radical idea that no object exists independently of the human mind. For example, the chair, the table, the neighborhood, and the solar system all are simply constructs of the human experience. Nola and Irzik (2005) take radical constructivism to task with this particular
aspect. Though each person’s experience may be private and subjective, knowledge is a product of cognitive acts that occurs through interaction within a context; constructed knowledge and understanding could not exist nor an be effort made toward sameness in meaning without this interaction. While the object “chair” is a social construct in the naming of it and in the definition of it, it is the feel of chair and the context in which the chair is situated that verifies that the object “chair” is located within context.

**Social Constructivism and Social Constructionism**

Crotty (as cited in Patton, 2002) distinguished social constructivism as “meaning-making activity of the mind” and social construction as the “collective generation and transmission of meaning about some phenomena relative to its social contexts” (p. 97). Often used interchangeably with social constructivism, social constructionism became prominent with the publication of *The Social Construction of Reality* by Peter Berger and Thomas Luckmann, who contend that all knowledge is derived from and maintained through social interaction (Schwandt, 2001). According to Schwandt, social constructivism can be viewed as either a weak or a strong theory of knowing. Weak constructivists do not contend that every object or idea is a social construct, and they do not deny an ontological reality of an idea, object, or fact. Alternatively, strong constructivists remain devout relativists, interpreting the world as a sociolinguistic product of historically situated interactions (Schwandt, 2001).

Truth or the true meaning about any aspect of existence can only be conjectured; it is relative and contingent on the methods and paradigms within which it is generated (Patton, 2002). Strong constructivism, then, confronts empirical truth, and any notion that knowledge progresses over time into a coherent, immutable, and unchallenged worldview. Knowledge, rather than being absolute across space and time, is socially constructed through human communication relative to the space and time in which the construction occurs. Left unexamined and even unchallenged, a social construction can become culturally embedded or institutionalized by the social group that constructed the knowledge, with its own language
and realities. For the constructivists, this can create a power imbalance, as it serves only those ideological interests.

Constructivism, a widely used philosophy, refers to constructing knowledge about reality, not constructing reality itself (Patton, 2002), which is an important distinction, given the number of definitions and descriptions about constructivism. While cognitive and radical constructivism as theories of knowing have their critics, cognitive constructivism is more commonly endorsed. A core element of constructivism is that knowledge is not passively received but rather is built up by the cognizing agent as the learner interacts with the experience. Other core elements of constructivism include recognizing that multiple perspectives exist about knowledge and knowledge development, and that it is human communication, a social and cultural construction, that can shape, distort, and structure understanding.

**Constructivism in Relation to Environmental Decision-Making**

Constructivism, state Nola and Irzik (2000), is one of the most widely accepted theories among science educators, though it is not without skeptics (Patton, 2002; Phillips, 1995; Rorty, 1999). Kuhn (1966) argues that science does not steadily progress toward and accumulate a body of knowledge about how the world works. Instead, there are periodic revolutions or paradigm shifts in which scientific inquiry transforms what some may consider a preferred approach to accessing a worldview or grand theory of the world. Kuhn (1996) asserts that science, similar to other disciplines, is organized around agreed upon and preconceived constructs of traditions and socially constructed ideas. These agreed upon constructs make research possible by allowing the researchers to focus on the phenomena.

Kuhn (1966) contends that periodic scientific revolutions, such as the great science wars in the 1960s and 1970s, come about through three distinct stages. During the prescience stage, a paradigm is developed as its proponents construct its meaning. This is followed by the normal science stage (or the stage at which scientists are routinely experimenting within the paradigm, enlarging it through problem solving). The third stage occurs when the research results cannot conform to the paradigm. Initially the researcher may be faulted until
the uncharacteristic results prevail; these characteristics are either accommodated or assimilated into the assumptions about the paradigm, or a new paradigm evolves.

Because of Kuhn’s influential work, great challenges, and debates commenced in the fields of social and natural sciences, resulting in additional paradigms of thought such as post-positivism, pragmatism, and constructivism. Although the great science wars are not necessarily over, the very nature of inquiry, reflection, and dialogue has engendered researchers who want to conduct research differently. They have moved beyond the dichotomous and orthodox debate of quantitative and qualitative, into thinking about what is appropriate and situationally responsive to the purpose of the research, the questions being raised, and the issues under examination.

Increasingly, the world is faced with dramatic and unprecedented challenges and changes such as rapid landscape transformations, especially near urban areas; the diminished capacity for agricultural production, renewable resources, and availability of nonrenewable resources due to overuse or harvest; scarcities of energy resources; the awakening of complex environmental health concerns due to improper waste management and general pollution of air, soil, and water; and conflicts over scarce resources such as safe drinking water (World Resource Institute, 2005). What is most confounding and raises the level of concern exponentially, is the rate, scale, and combination of change, both episodic and gradual, from local to global areas, and the combination of cross-scale changes (Vitousek et al., 1997). Environmental changes that occur faster than can be understood, assessed, or adapted to, raise levels of uncertainty and unpredictability regarding risks to human and natural systems.

Holling et al. (2002) recognized that nature, like human nature, is evolving; that “natural ecological systems have the resilience to experience wide change and still maintain the integrity of their functions” (p. 18); and that “people’s adaptive capabilities have made it possible not only to persist but also to create and innovate when limits are reached” (p. 18). Recognition of these evolutionary principles opens the door for competing scientific perspectives, including constructivism, post-modernism, post-positivism, and pragmatism.
Natural and social scientists have begun in earnest to develop integrative theories and mechanisms (Holling & Gunderson, 2002) from their respective disciplines in order to understand and determine implications of human and natural systems transformations. Primarily at a macro level, or those areas that span regional and international boundaries and multiple spatial and temporal scales.

Social scientists such as Andrews (1999), Bacow and Wheeler (1987), Beierle and Cayford (2002), Bingham (1986), Blackburn and Bruce (1995), Clark et al. (2001), Holling and Gunderson (2002), Wondelleck and Yaffee (2000), and Yosie and Herbst (1998) have been concerned with how to support decision-makers in addressing these changes. Natural and social scientists, in partnership with local and regional leaders, are utilizing the results of research and on-the-ground efforts to encourage interagency and international cooperation on environmental problems. Cooperative and collaborative efforts can generate better decision-making among specialists of policy, management, and science at both the micro and macro level. These endeavors of interdisciplinary thinking and collaborative efforts are enormously beneficial in resolving environmental conflicts and opening discussions for further understanding and effective problem solving.

Holling et al. (2002) examined the paradox of why the world has not collapsed and humans live on in spite of ecological changes and transformations. The paradox, according to Holling et al. (2002), is two-fold: in part because ecological systems are resilient to change and in part because humans are persistent, creative, and capable of learning. A key to managing these complexities occurs “when individuals and small groups of individuals exert extraordinary influence performing certain distinct roles within and outside their organizations” (Gunderson, Holling, & Light as cited in Westley, 2002, p. 334).

Very little is known as to how leaders and other key stakeholders make sense of and manage environmental-social-economic complexities from within their organization and when working at an inter-organizational level external to their organizations. What are the kinds of roles they have? What decisions are made and at what levels? Continuing to learn directly from environmental and natural resources leaders can only aid in understanding how
these leaders make sense of and manage these complexities and how leadership development can help these leaders in carrying out their roles and responsibilities.

**Constructivism Appropriateness in Relation to Leadership**

As scholars debate the development of a general leadership theory, some are specifically looking at the value of using a constructionist lens to understand how leadership emerges (Densten & Gray, 2001) and develops in organized systems. As a community develops, shared agreements are formed and embedded into the culture that give meaning to the members’ actions, interactions, and relationships, and help members mobilize to make change happen (Ospina & Sorenson, 2006). Meaning making is, in part, identified as a social process as individuals draw from existing and previous meanings and create new meanings as they interact with one another.

The fundamental nature of leadership as described by Ospina and Sorenson (2006); is leadership that is “intrinsically relational and social in nature and the result of shared meaning-making rooted in context or place” (p. 188). Ospina and Sorenson postulate that there are four dimensions of leadership: relational, systemic, emergent, and contextual. Leadership is relational as it emerges between people and their relationships, which is a shared or a divergent way of discerning leadership. As leadership emerges among people, it becomes embedded within the context of the wider system of interdependence as an emergent reality.

This multi-dimensional nature of leadership, with its behavioral, interpersonal, organizational, and environmental dimensions, is a nested phenomenon, identified by scholars including Conger (1998) and Egri and Herman (2000). “One of the great shortcomings of quantitative research has been its inability to draw effective links across these multiple levels to explain leadership events and outcomes” (Avolio & Bass, as cited in Conger, 1998, p. 109).

Fundamental to this research is a two-dimensional conceptual framework of natural resources and environmental leadership that states that environmental leadership in organizations is better understood as a process that involves two levels of influence (individual and organizational) and two types of influence relationships (internal and
Leadership, viewed as an influential process (Burns, 1978), can mobilize, and create change not only within organizations but also between organizations. Leaders, in particular, natural resources and environmental leaders, who recognize this dichotomy of interrelatedness and the importance of relationships both within and outside the organization, are more likely to be successful and be able to reconcile the diverse and competing demands resulting from these relationships and interactions (Portugal & Yukl, 1994).

The literature on leadership and leadership development often focuses exclusively on leadership development within organizations. Yet natural resources and environmental leadership more often than not, works across organizations and communities in order to respond to the 21st century challenges (Addor et al., 2005; Kettl, 2002). Sufficient attention has not been given to understanding the dynamics between learning processes within and among organizations (Holmqvist, 2003); nor at the micro or stakeholder level of decision-making (Feyerherm, 1994; Westley, 2002). Complex systems rely on interpersonal influence and a multitude of actors rather than on the dominance of a single person within the system. Constructionists may engender a body of knowledge about leadership as a collective achievement if analysts were to focus on the complex role of leadership rather than on the traditional person-centered approach.

**Review of the Leadership Literature**

This section presents an analysis of the literature related to leadership, including the range of existing leadership theories. One part of this analysis includes a review of natural resources and environmental leadership and its role in the management of natural resources and environmental issues.

**Analysis of the Definition of Leadership**

Leadership is essentially a 20th-century concept, one that has evolved and expanded over time (Rost, 1993a; Van Velsor & McCauley, 2004). As early as the 1300s, the word *leader* appeared in the English language, yet the word *leadership* did not appear until the first half of the 19th century, in writings used to describe the political influence and control of
British parliament (Bass, 1990a). Rost (1993a) in his comprehensive historical review expounds on the distinct origins of the words lead, leader, and leadership and more explicitly, the evolution of their meaning. Several scholars of distinction have written about leadership, how it is defined and conceptualized, and to some extent, how it is developed (Bass, 1990a; Bennis, 2003; Burns, 1978; Chrislip & Larson, 1994; Covey, 1990; Gardner, 1990; Heifetz, 1998; Kouzes & Posner, 2002; Northouse, 2004; Rost, 1993a; Senge, 1996; Van Velsor & McCauley, 2004; Wren, 2006; Yukl, 1998). In industrial, educational, and military settings and in social movements, leadership plays a critical role (Bass, 1990a). Yet, “leadership,” states Burns (1978) “is one of the most observed and least understood phenomena on earth” (p. 2).

According to Yukl (1998), “Leadership is often defined in terms of traits, behavior, influence, interaction patterns, role relationships, and occupation of an administrative position” (p. 2). Similarly, Bass (1990a) points out:

Leadership has been conceived as the focus of group processes, as a matter of personality, as a matter of inducing compliance, as the exercise of influence, as particular behaviors, as a forum of persuasion, as a power relation, as an instrument to achieve goals, as an effect of interaction, as a differentiated role, as initiation of structure, and as many combinations of these definitions. (p. 11)

Cooley (as cited in Bass, 1990a) maintains, “leadership is always at the nucleus of a tendency, and….all social movements closely examined, will be found to consist of tendencies having such nuclei” (p. 11). Northouse (2004) and Gardner (1990) describe leadership as a process that facilitates change and movement toward a goal in a group context. As a process, leadership is not simply an assigned position, nor the will of the group expressed, nor the characteristics or capabilities an individual possesses to enable others; nor is it the actions or behaviors that bring about change. Rather, it is the interaction or what occurs between the leader and followers or constituents. Yukl (1998) defines leadership as:

the process wherein an individual member of a group or organization influences the interpretation of events, the choice of objectives and strategies, the organization of work activities, the motivation of people to achieve the objectives, the maintenance of cooperative relationships, the development of skills and confidence by members, and
the enlistment of support and cooperation from people outside the group or organization. (p. 5)

Bass (1990a) identifies a progression of thought that has occurred in defining leadership from its earlier definitions focused on group process and change and personality in action to the art of inducing compliance, and now to the more recent leadership definitions of influence. Bass identifies newer terms to characterize leadership, such as “influence relationships, power differentials, persuasion, influence on goal achievement, role differentiation, reinforcement, initiation of structure, and perceived attributions of behavior that are consistent with what the perceivers believe leadership to be” (p. 19).

In his seminal critique on leadership studies, Rost (1993a) raises issues with the current state of leadership studies. Rost (1993a) is not only concerned with the lack of a common definition for leadership that gives rise to the inability to evaluate a defined phenomenon, but that the literature lacks sufficient arguments about the definitions that have been generated by various scholars. Rost (1993a) believes that “scholars do not know what it is they are studying, and the practitioners do not know what it is they are doing” (p. 8); thus, from his perspective, it is a high priority to reach a consensus on a leadership definition. Yukl (1998) challenges this notion, stating that it is “neither feasible nor desirable at this point in the development of the discipline to attempt to resolve the controversies over the appropriate definition of leadership” and that:

whenever feasible, leadership research should be designed to provide information relevant to the entire range of definitions, so that over time it will be possible to compare the utility of different conceptions and arrive at some consensus on the matter. (p. 5)

Given the very limited focus that has been accorded understanding natural resources and environmental leadership within the realm of leadership studies, additional research is needed to provide relevant information, contributing to a broader understanding about the nature of leadership and definitions. Natural resources and environmental leaders will continue to play a crucial role in leadership in the 21st century and thus, additional studies of this phenomenon are needed (Berry & Gordon, 2006; Egri & Frost, 1994; Egri & Herman,
2000). For the time being, as Yukl (1998) suggested, it is better to use the various concepts of leadership as a source of different perspectives on a complex, multifaceted phenomenon.

Analysis of Leadership Theories

Leadership theories, like definitions of leadership, have evolved and expanded over time. Although the theories have changed, what has not changed is the need for leadership (Van Velsor & McCauley, 2004). Walker (2006) asserts that the importance of leadership theory varies among disciplines; that while some scholars hold fast to these theories in order to describe the observed phenomena, others believe theory assists in prediction of future events. One central theme of leadership theory that has been lacking is the notion that leadership can be learned, a major tenet of leadership theory espoused by Gardner (1990).

Great-men and trait-based theories of leadership dominated early theorists, assuring the development of predominantly male leaders by virtue of birthright, educational status, and birth order (Bass, 1990a; Van Velsor & McCauley, 2004). History positively tells the stories of great women in leadership and the numerous roles women played throughout civilization and its diverse cultures, though theories of great-women in leadership are less explored (Christensen, 1987). The primary focus of both great-men and trait-based leadership theories is on the leader: leadership is the property of the great man or woman, or the one born with a particular trait, and the results of leadership can be attributed to the one individual.

Great-man and woman theories suggest that it is the leader who has led the greatest changes, leaders such as Catherine the Great, Mohandas Gandhi, Martin Luther, and Martin Luther King. It is these leaders, according to Burns (1978), who make history by the very nature of their decisions. Trait theories of leadership have tried to explain leadership as a set of traits or personality characteristics that leaders possess and non-leaders do not. Examples might include a heroic nature, “tireless energy, penetrating intuition, uncanny foresight, and irresistible persuasive powers” (Yukl, 1998, p. 8). A criticism leveled against both theories is the assumption that leaders are born and not made. While studies of great-men and women continue, as do trait-based studies on executives (Yukl, 1998), the notion of leadership is not
limited to “great-men or -women,” nor to executives or CEOs, but has given way to a more egalitarian view of leadership (Rost, 1993a).

“The development of leadership theory is one of the few ways we have to determine if we are making any progress in understanding the leadership phenomenon” (Walker, 2006, p. 47). Other theories of leadership have developed and evolved from these earlier attempts to describe and explain leadership. Bass (1990a) introduced several streams of leadership theories with examples such as personal and situational theories (charismatic, situational, humanistic, and political leadership), interaction and social learning theories (leader-role theory, reinforced-change theory, and contingency theory), theories and models of interactive processes (multiple-linkage model, exchange theory, behavioral theory, and communication theories), and perceptual and cognitive theories (attribution theory, information processing, and open-systems analysis).

Yukl (1998) provided a major overview of leadership theories but referred to them as approaches, such as the behavioral approach, the power-influence approach, the situational approach, and the integrative approach. Walker (2006), beginning with the great-man and trait-based theory, described his matrix of leadership theories as behavioral theory, contingency theory, cognitive theory, moral leadership theory, and strategic or transactional theory.

Two major leadership theories bear mentioning: transactional leadership theory and transformational leadership theory, both of which Bass (1990a) labels as hybrid explanations for leadership theory. Following the 1960s, Bass states that leadership was seen as an exchange or as a transaction between the leader and follower. Seeing the need to motivate followers through rational (or emotional) appeals (Van Velsor & McCauley, 2004), a leader exchanges the promises of rewards for the followers’ fulfillment of agreements with the leader (Bass, 1990a). By the 20th century, leadership theory had evolved from a theory of exchange or transitions to one of the leader or leaders creating an inner commitment to identified social goals through transformational leadership or the collective effect of the leadership (Bass, 1990a; Burns, 1978). According to Bass and Avolio (as cited in Bass,
“transformational leadership is closer to the prototype of leadership that people have in mind when they describe their ideal leader and is more likely to provide a role model with which subordinates want to identify” (p. 54).

Burns’ (1978) notion of transformational leadership is that “leaders and followers raise one another to higher levels of motivation and morality” (p. 20). Rost (1993a) counters, stating:

there are more transformations that people and organizations go through than those which raise them to higher levels of morality…transformation can take place in many aspects of our personal, professional, and moral lives as well as in many aspects of the groups, organizations, communities, and societies in which we live and work…these transformations can be physical, intellectual, aesthetic, psychological, social, civic, ecological, transcendental, moral, spiritual, and holistic. (p. 126)

While Rost (1993a) believes that Burns made a serious attempt to make a paradigm shift in leadership theory, Rost (1993a) maintains that leadership theories for the most part describe what he refers to as,

An industrial paradigm or leadership as good management theory…has the following characteristics: structural-functionalism, management-oriented, personalistic in focusing only on the leader, goal-achievement-dominated, self-interested and individualistic in outlook, male-oriented, utilitarian and materialistic in ethical perspective, and rationalistic, technocratic, linear, quantitative, and scientific in language and methodology. (p. 180)

In essence, there are three central characteristics to this industrial paradigm: leadership is central to and belongs to the leader; leadership is a formal or ranked position within an organization or group; and the concepts of leadership and management are intertwined throughout the last century.

Since 2001, several renowned scholars have endeavored to find an integrative theory of leadership. The results of their quest resulted not in a general theory of leadership, but in a construct built on the collective work of diverse scholarship and examination. An articulation of their construct for leadership was presented by Burns (as cited in Goethals & Sorenson, 2006) as:
we now see leadership as an influence process, both visible and invisible, in a society inherited, constructed, and perceived as the interaction of persons in human (and inhuman) conditions of inequality – an interaction measured by ethical and moral values and by the degree of relation of intended, comprehensive, and durable change. (p. 239)

Although this new construct may not amplify the post-industrial model Rost (1993a) has begun to describe, it may assimilate into his theory. The major focus of the new post-industrial paradigm is developing a way out of the intractable problems the industrial era has produced, such as pollution, population explosion, poverty and hunger, greed, and self-interested politics. Important values of the post-industrial leadership model include “collaboration, common good, global concern, diversity and pluralism in structures and participation, client orientation, civic virtues, freedom of expression in all organizations, critical dialogue, qualitative language and methodologies, substantive justice, and consensus-oriented policy-making process” (Rost, 1993a, p. 181).

**Leadership for Change**

The need for leadership that reflects change, anticipates changes, and responds to change has never been greater for society. The world faces dramatic and unprecedented changes that are different from any other time in history (Vitousek et al., 1997; World Resources Institute, 2005). The changes that ensued as a result of the growing scale of human enterprises are both local and global in scale (Allen et al., 1998a; Sachs, 2004; Vitousek et al., 1997; World Resources Institute, 2005). Understanding leadership that can respond to these emerging issues seems like a daunting task.

Concepts of traditional leadership or industrial leadership (Rost, 1993a), based on executive and management models, are drawn from industrial, political, religious, and military disciplines (Berry & Gordon, 1993) and tend to reflect models of leadership in which leaders are entrusted to identify and pursue the common good (Beierle & Cayford, 2002). Using their authority and position, these leaders direct and accomplish specific goals or arbitrate among competing interests (Beierle & Cayford, 2002; Berry & Gordon, 1993; Dietz & Stern, 2002). Effective in great accomplishments during a short time span, these
leaders can be effective as adversaries or competitors of opposing causes (Berry & Gordon, 1993). Yet, managerial or “command and control” leadership (Dietz & Stern, 2002) may not be an effective 21st century approach in responding to the characteristics of environmental issues. Allen et al. (1998b) and Rost (1993a) also posit that current models of leadership are inadequate for dealing with the serious challenges facing the modern world.

In order to solve environmental problems, leadership is needed that can be learned (Gardner, 1990), is responsive to the characteristics of environmental issues (Berry & Gordon, 1993), and is purpose-driven (Allen et. al., 1998b). Leadership that increases our capacity to engage and learn new ways of understanding, defining, and solving complex problems is essential to adapt to these kinds of challenges (Heifetz, 1998). “Organizations are frequently faced with adaptive challenges instead of technical challenges” (Goethals et al., 2004, p. 841).

Globalization and the competition for resources in conjunction with the level of uncertainty in managing resource and environmental issues create the need for a diverse repertoire of leadership skills, including transformational behaviors, conflict management and problem solving skills, and the building of partnerships and coalitions with various internal and external stakeholders, all necessary for successful leadership in the 21st century (Egri & Herman, 2000; Portugal & Yukl, 1994; Vredenburg & Westley, 1999; Westley, 2005). Specifically, leadership for the 21st century needs to be able to address the characteristics of current environmental problems such as issues resulting from complex interactions between natural and human systems which often require multifaceted responses and long term solutions; a scattered and less than integrated multidisciplinary science base; an emotion-charged context when competing interests or values surface; and an absolute need for integration across a wide array of areas of knowledge and human attitudes and concerns (Berry & Gordon, 1993). Leaders will need to work to build political concurrence through coalition formation, outreach, and the use of alternative dispute resolution approaches (Yaffee, 1995). Efforts to introduce environmental reforms are more likely to be
successful if leaders can build broad coalitions of support both within and outside organizations (Portugal & Yukl, 1994).

For instance, the current natural resources and environmental leadership literature focuses predominantly on leaders in governmental roles – environmental managers and regulators at the local, state, and federal level – or in non-governmental roles such as environmental advocates and activists. Berry and Gordon (2006), in *Environmental Leadership Equals Essential Leadership*, focused their research predominantly on interviewing senior or top leadership mostly within academia, and then within federal government, business, and non-profits to determine the skills needed to be learned in order to solve environmental problems. Building a “results-based sense of common purpose among diverse public, private, and nongovernmental stakeholders” (Durant et al., 2004, p. xiv) is essential to the future leadership.

**Review of Leadership Development Literature**

This section describes the history of leadership development programs. A review of the literature related to leadership development in the field of natural resources and environmental leadership is offered. A brief description of a natural resources and environmental program for leaders is discussed using key elements of program planning, along with suggestions for evaluation to determine program effectiveness. A focus on the issues of power and conflict in program planning is included.

**History of Leadership Development Programs**

Understanding the history of leadership development programs can contribute to the knowledge base of adult education as well as to other areas of higher learning and the researcher’s own understanding. This examination of the past as well as the present offers a chance for critical reflection. It is an opportunity to understand the nature of leadership development programs over time, to explore future trends for leadership development programs, and enhance the current practice by identifying current issues and alternatives for consideration.
Like other forms of scholarship, though, history is not neutral (Merriam & Brockett, 1997). The history of any topic is defined by the lens through which it is viewed, by the questions that are asked and not asked, and by the information that is included or excluded. Thus, history is an interpretation of the past. This examination will be limited to an historical narrative interpretation by chronicling events that inform the reader about the history of leadership development programs rather than by persuading the reader why these events occurred.

Several key distinctions are made before offering an interpretation. Foremost, while there continues to be a demand for and a proliferation of leadership development programs due to considerable interest in them (Day, 2000), neither a thorough understanding nor a comprehensive theory about leadership development exists (Brungardt, 1996; Goethals, Sorenson, & Burns, 2004; Lynham, 2000). Though considerable scholarly efforts have been conducted on leadership for well over a century (Bass, 1990a; Goethals et al., 2004), there is a dearth of knowledge about leadership development (Brungardt, 1996; Lynham, 2000).

This scarcity of knowledge is due in part to an interchange in the usage of terms such as learning leadership, leadership development, leadership education, leadership training, managerial training, and leader development (Brungardt, 1996; Day, 2000), which are often used to explain the occurrence of leadership development. Leadership development is also embedded within the literature of educational leadership, military and political leadership, and other social sciences such as sociology, psychology, and management (Lynham, 2000). Hence, an historical account of leadership development programs may be obscured without boundaries that result from consistent terminology or a known body of literature about leadership development.

Leadership Development Programs: Terms and Definitions

In order to provide an historical overview of leadership development programs, a brief examination of definitions was necessary. For instance, Brungardt (1996) reasons that leadership development is a continuous learning process that spans an entire lifetime, “where knowledge and experience build and allow for even more advanced learning and growth, and
that every stage of development in the life cycle promotes, encourages, and assists in one’s leadership potential” (p. 83). He includes formal and structured educational activities in his definition, as well as unstructured activities such as childhood development and adult life experiences. More than a program for developing leadership, Brungardt’s definition asserts a continuous learning process explaining how leaders are developed over a lifetime; thus his definition serves as a theoretical perspective.

Brungardt (1996) contends learning leadership should serve as the research lens to understand the role of leadership education in the development of leaders. According to Brungardt, leadership education consists of the learning activities designed to enhance or foster leadership abilities. Brungardt then distinguishes leadership training as a narrower learning activity and a component of leadership education that is purposely designed to intervene in the specific leadership role or job of the leader.

Van Velsor and McCauley (2004) concentrate their definition of leadership development on the expansion of a person’s capacity to be effective in leadership roles and processes. Similar to Brungardt’s (1996) learning leadership, they suggest that leadership roles and processes are those that enable groups of people to work together in productive and meaningful ways. Day (2000) adds that “leadership roles are those with or without formal authority and can be oriented toward building capacity in anticipation of unforeseen challenges” (p. 582).

In his review of leadership development, Day (2000) contributes two additional, in the judgment of the researcher, crucial distinctions. Foremost, Day (2000) captures attention by focusing on the differences between developing leaders (the human capital) and developing leadership (the social capital). The former emphasizes the development of individual capabilities, and the latter emphasizes building networked relationships among individuals to enhance cooperation and resource exchange. Effective leadership requires attention to both kinds of capital, the human and the social, in a blend of the interpersonal and intrapersonal aspects that comprise leadership development (Goethals et al., 2004).
Day (2000) also reiterates what other scholars have struggled with throughout the history of leadership studies: the distinction between management and leadership. For some scholars, the nature of management and leadership are two separate though interrelated fields of study (Yukl, 1998). For others, in particular Rost (1993a), management is clearly distinguished by its role of formal authority or position with supervisory responsibilities for subordinates, and a focus on coordinating activities between these roles to produce or sell goods or services for the organization. Day (2000) emphasizes that managerial development, both education and training, focuses on developing the manager in order to enhance his or her role in the performance of the job; the development of leadership, Day (2000) asserts, is linking the distinctions between leader and leadership development for those with or without formal authority.

A definition of program appears to be more achievable and as crucial to define, given its philosophical implications in adult education. Elias and Merriam’s (1995) introduction to the relevant issues of adult education asserts it is “the curriculum of adult education that takes the form of programs; and that the development of programs can be improved if there are clear philosophical discussions of the various elements of programs, and their logical and psychological development” (p. 7). Whether as an array of sequentially scheduled activities or a few tailored courses, training and educational programs for adults come in a variety of formats, from one-hour workshops to a series of intensive workshops, from instructing individual learners to instructing small and large groups, either with very structured instructional formats or exceedingly open formats (Caffarella, 2002).

**Examples of Leadership Development Programs**

What can be said at this point about a definition for leadership development programs in the quest to provide an historical account of leadership development programs? Although the literature is rich in understanding leadership, studies in leadership development are in their infancy and ripe for building foundations of understanding, including agreed upon definitions by scholars about leadership development.
In fact, as definitions of leadership are influenced by their particular socio-cultural contexts, so, too, are leadership development programs. For example, one could argue that the first leadership development program occurred in Athens with the Sophists, who trained diplomats in oratory and other diplomatic skills (Elias & Merriam, 1995). Developing a voice that could both communicate and carry the message over throngs of people was a learned skill for Athenian leaders.

Secondly, one could certainly argue that Plato, an early classical philosopher, had begun advocating for leadership education in his writing of *The Republic* (Gish, 2005). Often referred to as the beginning of liberal arts tradition (Elias & Merriam, 1995), Athenian culture encouraged intellectual development of its rulers through Plato’s teachings of order, reason, and virtue. Plato’s primary outcome was protecting Athens’ citizens. His leadership development program began with children and continued into adulthood as the ruling class received instruction in liberal studies as well as in militaristic and political training. Older adults spent their time in contemplation and guiding the city-state. The importance of personal development, education, and training was recognized early on, as programs were designed to assist the ruling class in performing its civic responsibilities.

The concept of leadership, according to Rost (1993a) became relatively important in the 20th century as an industrial paradigm of leadership, and with it, the development of leaders. Hence, the notion of leadership development is a fairly recent idea (Hernez-Broome & Hughes, 2004). For example, the W. K. Kellogg Foundation (W. K. Kellogg Foundation [WKKF], 2002) outlines its history of providing leadership development from the 1930s through the 1990s during a recent analysis of 55 leadership development programs.

1. 1930s: funded the Michigan Community Health Project to support community leaders in addressing social problems
2. 1950s: funded the Cooperative Program in Educational Administration and the Junior College Leadership Programs
3. 1960s: launched the Agricultural Leadership Development Program
4. 1980s: created the Kellogg National Leadership Program (KNLP) and the Kellogg International Leadership Program (KILP)

5. 1990s: funded the College Age Youth Leadership Development, the African American Men and Boys Initiative, the Grassroots Community Leadership, Community Voices, the Initiative for Developing Equity in African Agriculture and the Integrated District Development Program (WKKF, 2002)

6. 1994: though it was not listed in the WKKF report, WKKF funded the Natural Resources Leadership Institute (Levi, 1999).

One of the earlier, renowned, and far-reaching leadership development programs is the Boy Scouts of America (Boy Scouts of America, 1974). Troop leader development was comprised of learning 11 leadership skills, initially based on the teachings from the 1972 book, Learning About Leadership (Boy Scouts of America, 1974). Ultimately, the goal was to develop citizenship, character, and self-reliance. Lewin, Lippit, and White’s (1939) seminal study described three kinds of leadership styles: laissez-faire, authoritarian, and democratic. The democratic style of leadership served as the core leadership model for the Boy Scouts, extolling the value that the most productive style of leadership was one in which members of the group took part in the decision-making.

Connors (2004) conducted another historical examination of leadership development. He made the case that for 75 years, the use of parliamentary instruction has encouraged the development of agricultural leaders through Future Farmers of America (FFA). Connors stated that through the long term effort of using parliamentary procedures, the FFA chapters improved in operation, more individuals assumed leadership of the chapters, and those who were actively involved in FFA became better leaders in their communities. In recent years, a Society of Agricultural Education Parliamentarians was created to continue the promotion and development of parliamentary procedure instruction in agricultural education (Connors, 2004).

These three examples presented were not intended to comprise a lengthy account of the historical development of leadership development programs. Rather, they were presented
to discuss the value of leadership training in three different contexts throughout history. Second, these examples were presented to illustrate a portion of Day’s (2000) theory that often leadership training or leadership development is focused on the development of the leader. A common element of these cases is the embodiment of what Day (2000) described as learning leader and leadership development. Other examples are certain to exist in the literature on human resource development, military and political history, literature pertaining to religion, and perhaps even literature related to headship.

**Leadership Development Approaches**

Lim, Chan, Ng, and Lua (2005) identified four leadership development approaches in use during the last century: formal training, the organizational human resource approach, the individual psychological approach, and the best practices approach. The four approaches differ in their purpose for leadership development, instructional tools, length of instruction or development, and content.

For example, the formal training approach is described as using workshops or classrooms to teach about leadership theories and principles, with a major emphasis on awareness building. The strength of this model is that highly motivated individuals will use this opportunity to learn about themselves. One difficulty with this approach can be transferring the learning to the work environment.

The organizational human resource approach was designed to prepare leaders for current and future leadership by offering training in stages of development specific to the needs of the organization. Differentiating leadership needs at various levels of an organization is important, though employee attrition can lessen the value of this approach.

The individual psychological approach focuses on individual change in terms of self-insight, self-regulation, and self-identity, contending that leaders need to develop self-awareness about their level of effectiveness. The researchers determined from their study that in general, leadership development programs need to include a learning leader component in the programming of a leadership development program.
Last is the best practices approach, which considers how to align individual needs for growth and learning with the organizational needs. Comprised of an array of developmental experiences to challenge the learner and respond to organizational strategies, the best practices approach integrates many of its development processes (Hernez-Broom & Hughes, 2004).

One of the key findings of Lim et al. (2005) in their examination of leadership approaches is the effectiveness of a systematic design of leadership development practices and tools and a consistent and thoughtful integration of best practices. Development occurs over time, and neither a single training event nor program may be sufficient (Brungardt, 1996; Lim et al., 2005). Developing leaders and their capacity for leadership comes from many formal and informal experiences, periodic support (affirmations), assessment (evaluations of leadership), and challenges that engender new growth potential (Van Velsor & McCauley, 2004).

When one considers the aims of leadership development, these aims are similar to those Lindeman identified about adult education (Elias & Merriam, 1995, p. 17): “ensuring that the short term goal of self-improvement is compatible with the long term goal of changing the social order; and changing individuals in continuing adjustment to changing social functions.” Both the leader development and leadership development format, articulated by Day (2000), is ripe with promise. Leadership development programs have proliferated greatly (Goethals et al., 2004; Lim et al., 2005). A plethora of social, environmental, and economic problems persist in spite of the number of leaders taking advantage of numerous leadership development programs. Additional work may be required, then, to create and develop the systematic models that Lim et al. (2005) speak about in order for leadership development programs to begin to tackle the portion of programming that relates to the organization and society, as well as to the leader.

**Programmatic View of Natural Resources and Environmental Leadership Development**

There is limited information about leadership development, and the literature is sparser still with respect to natural resources and environmental leadership development.
Though there is growing interest in leadership development for natural resources and environmental leaders (Addor et al., 2005; Berry & Gordon, 2006; Brewer, 2004; Westley, 2005), very little research has been conducted on this topic.

There are several reasons for the growing interest in environmental and natural resources leadership development programs. Foremost, organizations and agencies in the 21st century face an increasingly complex world with many challenges, including social and environmental issues (Portugal & Yukl, 1994). Environmental issues are not purely ecological, economic, or social problems, but are rather a complex combination of all three that require an understanding of the interrelations between nature and people who operate in different settings and perform different roles (Gunderson et al., 1995). Ewel (2001) elucidates:

Simply understanding how an ecosystem functions is not enough to be able to manage it; it is also important to include other disciplines like economics or sociology within the management plans, and to communicate any rationales and strategies effectively to the interested parties. (p. 721)

Others would also argue for multi-perspectives of intellectual interaction and cooperation between the social and natural sciences (Andrews, 1999; Endter-Wada, Blahna, Krannich, & Brunson, 1998). Finger and Verlaan (1995) affirm the value of developing a new interdisciplinary system of learning. Consequently, 21st century solutions to environmental dilemmas such as climate change, species conservation, or wildfire management may require a more interdisciplinary approach that includes different stakeholders such as scientists, planners, citizens, policy-makers, resource managers, and business and industry leaders.

Burke and Franklin (2003), Peine et al. (2005), and Westley (2005) all forecasted the upcoming waves of retirements in the federal and state workforce throughout the country. This includes natural resources and resource professionals within agencies such as the Environmental Protection Agency, the U.S. Forest Service, and the Department of Interior that manage many public participation processes on an annual basis and complex and contentious issues. The loss of experience, leadership, and institutional knowledge, and the
overall change in composition in the workforce, whether through retirement or downsizing, can have serious ramifications, for instance, on the ability of state and federal partners to conserve wildlife and habitat (Burke & Franklin, 2003). Burke and Franklin suggest that working with universities and other educational institutions to assist in creating smooth transitions and planned changes for emerging and upcoming leadership will be important.

With the retirement of experienced leaders from the baby boomer generation, the importance of preparing natural resources and environmental leaders for the 21st century has been indicated by several researchers (Peine et al., 2005; Westley, 2005). However, there is limited research that focuses specifically on natural resources and environmental leadership (Addor et al., 2005; Allen et al., 1998b; Berry & Gordon, 1993, 2006; Brewer, 2004; Clark et al., 2001; Egri & Frost, 1994; Egri & Herman, 2000; Viluksela, 2007; Vredenburg & Westley, 1999; Westley, 2005; Yaffee, 1995).

The research that concentrates on preparing leaders for the existing and future challenges they face is particularly limited (Addor et al., 2005; Westley, 2005). Two of these studies specifically address the role of program planning in preparing natural resources and environmental leaders (Addor et al., 2005; Westley, 2005), though almost all of the studies or reports recommend 21st century skills for environmental leaders (Addor et al., 2005; Berry & Gordon, 1993, 2006; Brewer; Clark et al., 2004; Egri & Frost, 1994; Egri & Herman, 2000; Viluksela, 2007; Vredenburg & Westley, 1999; Westley, 2005; Yaffee, 1995).

For example, Westley (2005) evaluated the effectiveness of a leadership and communication workshop for natural resources professionals. Presented by the U.S. Department of Agriculture (USDA) Forest Service since 1988, the workshop design is focused on communication skills development for natural resources professionals. Although one result of Westley’s (2005) study was to provide course leaders with information for continuous course improvements, she also intended to identify effective elements of the leadership training to assist future course designers.

In a second example, Addor et al. (2005) describes a leadership development model for natural resources and environmental leaders using a change model theory that builds the
capacity for collaborative decision-making in North Carolina. The Natural Resources Leadership Institute (NRLI), an institute of the North Carolina Cooperative Extension at North Carolina State University, incorporates adult learning theory into its program design and delivery. It exemplifies structured and self-directive learning opportunities such as transferring of learning, meaning the transfer of knowledge and skills from one context (the learning context) to another context (the participant’s organization or work context) (Caffarella, 2002).

With strong fundamental roots in the Progressive philosophy of adult education, the NRLI is both a means to prepare learners as well as an instrument of social change (Elias & Merriam, 1995). The needs, interests, and experiences of the learners are key elements in the learning process, recognizing the unlimited potential people have to develop through education. Promoting learning by thinking as well as by doing, the long-term goal of the NRLI is building the capacity for collaborative decision-making around natural resources in North Carolina.

Cooperative Extension, long acknowledged as a viable and successful system of adult and youth education, has operated throughout the U.S. for nearly a century as the outreach arm of land grant universities and colleges (Boone, Safrit, & Jones, 2002). Located at the top of Houle’s pyramid of leadership along with other adult education programs, Cooperative Extension is recognized in the field of education as a system of diverse outreach mechanisms and educational opportunities (Merriam & Brockett, 1997). Although the original mandate of Cooperative Extension was assisting people of rural America in identifying their home and community problems, the demands of a changing society warranted additional types of programming (Comer, Birkenholz, & Stewart, 2004). Expanding the focus from its traditional agricultural programming base, Cooperative Extension continues to help people, both adults and youth, put research-based knowledge to work to improve the quality of life through new programming areas like natural resources management, public issues education, and urban and community development.
This shift and expansion in programming assisted in the development of a natural resources and environmental leadership program during the early 1990s through a $700,000 grant provided by the W. K. Kellogg Foundation. Cooperative Extension faculty (the initial program designers) designed a three-year multi-state project entitled “Developing Natural Resources Leadership” from which the Natural Resources Leadership Institute was created (Levi, 1999). The overall goal of the Kellogg project was to improve the management of natural resources in the South and enhance rural economic development while maintaining or improving environmental quality throughout the region. A way to accomplish this was to advance an alternative way of thinking about leadership, one that would help communities and organizations resolve and manage the burgeoning and contentious environmental issues.

“The Natural Resources Leadership Institute (NRLI) brought a new vision of leadership and new approaches to the resolution of environmental conflicts to natural resources leaders in three southeastern states” (Greene, 2001, p. 81). The first Natural Resources Leadership Institute was piloted in January 1995 at North Carolina State University, and an annual leadership development program has been held since then.

The design of the NRLI model includes the following components based on the Theory of Change model identified by leadership from the states of North Carolina and Virginia (Addor et al., 2005):

1. Assumptions: suppositions or beliefs on which the NRLI model is based such as “collaboration is a learned skill”

2. Situation: conditions or circumstances the model intends to address, such as the characteristics of environmental issues

3. Inputs: both the theoretical bases that provide the foundation for understanding the model such as learning and learning transfer; program resources are also included, such as program leadership

4. Outputs: what the model produces by way of its curriculum and instructional methods

5. Outcomes and Impacts: effects in awareness and behaviors that are anticipated as a result of participation in the NRLI.
An ultimate desire is change occurs in the system, including expanding leadership, strengthening institutions, and attaining sustainability. A model has been constructed to illustrate these elements and is reprinted with permission (see Figure 2).

Similar to the programming concept identified by Caffarella (2002), educational and training programs often are designed to serve more than one purpose, though change is repeatedly the principal outcome. Caffarella identifies change at three different levels:

1. Individual change related to acquisition of new knowledge, skills, and an examination of personal values and beliefs;
2. Organizational change that result in new policies, procedures, and ways of working; and
3. Community and societal change that allow for different segments of society to respond to the world around them in alternative ways. (p. 11)

The NRLI was designed to generate three levels of outcomes that differ slightly from the changes identified by Caffarella (Addor et al., 2005). The three levels are changes in the participants’ awareness, changes in participants’ behaviors, and changes in organizations and systems. An example of change in a participant’s awareness level could result from participating in the Thomas Kilmann (TKI) assessment. The participant would learn about five approaches for managing conflict, then specifically his or her approach in managing conflict, and any approach that he or she may use more frequently than the other approaches to develop a clearer understanding about his or her overall approach for managing conflict. A change in awareness does not require additional action. However, a change in behavior could result from participating in the TKI when a participant follows a development plan to increase the use of one conflict approach (e.g., collaboration) and decrease the use of another (e.g., competition). Furthermore, long-term impacts could result in the organization if a participant, a supervisor for instance, continued to developed his or her collaborative skills in managing conflict and successfully influenced the level of problem-solving within the work team.
Figure 2. Theory of Change Model: The Natural Resources Leadership Institute (Addor et al., 2005, p. 205) (Reprinted with permission from Wiley & Sons)
Other aspects of the program design include the length of the program, scheduled over a period of 18 months. The participants are engaged in eight interactive classroom sessions that include various instructional strategies (Apps, 1991) or techniques to facilitate learning (Brookfield, 1986; Knowles, 1990) such as problem-solving activities, group discussions, role-plays, negotiation and co-negotiation teams, facilitation and co-facilitation teams, expert panels, and case studies. The initial curriculum developed around transformative skills such as building trust, self-discovery, shared decision-making, conflict management, and empowerment (Levi, 1999).

Although it is not essential for every adult education program, a vital aspect of the NRLI is its transfer of learning component or the practicum project. Formally described as the effective application by the participants of what they learned in participating in the program, a transfer of learning component can have multifaceted dimensions (Caffarella, 2002). On the one hand, as Ottoson describes (as cited in Caffarella, 2002), the “application requires multiple kinds of knowledge, including knowledge of the thing, the context, the practical, and the skills to put it all together . . . skills of translation, negotiation, adaptation, and decision-making” (p. 205). On the other hand, it allows the learning to continue as the participant reflects on and applies the skills learned to some aspect within his or her community or organization or between organizations. In this case, change may occur on several levels and not simply within the individual.

Programming is a proactive and visionary process, a conceptual orientation toward the future; it is a macro process with “planned change intended for the adult learner, learner groups, and institutionalized learner systems” (Boone et al., 2002, p. 52). Caffarella (2002) identifies program planning as an interactive and comprehensive process that involves the people and place as well as culture, with no real beginnings or endings in the planning process. Brookfield (1986) distinguishes program planning as the means for reflective practice, deliberation, and the facilitation of the adult learner; he also underscores the role of second order considerations such as ethics, values, and morals to help in defining criteria for
conflicting program priorities. Knowles (1990) recognizes the role of the adult learner within the program planning process as a self-directed and motivated learner.

Although there are similarities and differences in the programming models introduced by leading program theorists such as Boone et al. (2002), Brookfield (1986), Caffarella (2002), and Knowles (1990), Forester (as cited in Wilson & Cervero, 1996) reminds us that “theories do not plan programs, people do” (p. 5). Experienced planners are routinely confronted with the management of social interactions as part of the programming process, not simply a program model or its associated tasks and purposeful activities (Wilson & Cervero). For example, programmers may need to make decisions about who will receive scholarships in order to participate in a program, or who will not be accepted into a program and why, or how to adapt a current program model during unpredictable economic times. Both Sork (2000) and Boone et al. (2002) distinguish the contribution of Cervero and Wilson for their identification of planning as both a social and political process in managing and negotiating the sometimes competing interactions (Wilson & Cervero, 1996).

“Theories,” state Cervero and Wilson (n.d.), “were never meant to account for the realities of practice including the shifting goals, the limited resources, the relations of power, and the varying personalities encountered in the everyday world” (p. 41). While seasoned program planners may intuitively be keenly aware of the social and political nature of program planning, this may not be the case with emerging program planners and leaders.

Another notion introduced is the role of power or the socially structured capacity to act within the framework of the planning process. The ability to act, according to Wilson and Cervero (1996), is socially distributed within the context of the planning process and external to the planning process. There are two important aspects to the role of power in planning. On one hand, it is the responsibility of the planner to recognize in what ways his or her actions promote or hinder the substantive involvement of others (Wilson & Cervero, 1996). Planners can, by virtue of the program aspects he or she chooses to develop or influence, favor some people over others; for example, by the kinds of resources that are allocated or not allocated to a particular group (Sork, 2000). On the other hand, the planner’s structured capacity to act
is hindered or endorsed depending on how well he or she is aware of and responsive to negotiating the political surroundings. Power, then, to the planner is not simply a matter of hierarchical position, but rather the means to align what Wilson and Cervero (1996) refer to as substantive democratic action within the planning and implementation of the program and the skills of the planner in negotiating his or her surroundings to enhance or maintain the democratic action.

Like Brookfield (1986), who gives notice to second-order considerations within the planning process, Wilson and Cervero (1996) caution to negotiate responsibility within the social and institutional contexts in which planners are linked, recognizing the divergent interests involved. These leading program theorists are not asking to set aside first-order considerations such as the conceptual or proactive and purposeful aspects of program planning. Rather they are requesting recognition and access for the role of second-order considerations and negotiation in shaping the future of program planning, and for the interests of these five groups as identified by Wilson and Cervero (1996): the learners, the instructors, the planners, the institutional leaders, and the affected publics.

**Critical Environmental Learning Theories**

This section discusses the adult learning literature related to environmental learning. It identifies the adult learning theorists that informed the researcher’s understanding about environmental learning and includes other relevant critiques of the learning theories. A particular focus is on the theoretical frameworks such as social-environmental learning identified by Finger and Asun (2001), transformative learning theory related to social-emancipatory and planetary perspectives aimed at environmental sustainability identified by Taylor (2008), and critical social and environmental theory identified by Gilligan (2004).

**Adult Learning Literature Related to Environmental Learning**

“Learning, especially adult learning,” in the words of Robert Blakely (1965), is “fundamental to the solution of all social problems” (p. 54). The global crisis is the ultimate challenge to society’s ability to learn (Finger & Verlaan, 1995). Holling, Gunderson, and Ludwig (2002) recognize that nature, like human nature, is evolving; that “natural ecological
systems have the resilience to experience wide change and still maintain the integrity of their functions”; and that “people’s adaptive capabilities have made it possible not only to persist passively, but also to create and innovate when limits are reached” (p. 18). Recognition of these evolutionary principles opens the door for competing scientific perspectives to distinguish where different types of stability loss occur in human and natural systems; where there is reversibility and irreversibility; and where cross-scale interactions occur. There is a role for learning that can integrate across disciplines so that ecological, economic, evolutionary, and social systems and the linkages between those systems can be better understood. Holling anticipates that “ecological surprises are more likely to occur as systems interconnect over larger spatial scales” (as cited in Scheffer, Westley, Brock, & Holmgren, 2002, p. 226), and that these surprises or levels of uncertainty will only increase as the ecological, economic, evolutionary, and social systems interconnect.

There are a great many learning theorists and learning theories, so determining a theory or theories that will create links between the natural and human systems is a somewhat intimidating task. Knowles (1990) identifies a lengthy list of what he terms propounders of learning theory and interpreters of learning theory in *The Adult Learner: A Neglected Species*. In this classic reading among adult educators, Knowles introduces an integrative learning concept based on extensive research and experience, of what is known about how the adult learner learns best, or andragogy. This theory has greatly influenced the practice of adult education, bringing recognition that facilitation of learning is at the heart of the adult educator’s practice (Merriam, 2008). As a learning theory, andragogy seems poised to assist the adult educator in recognizing how learners learn best, and therefore, how an adult educator might consider structuring a learning experience where the role of the learner’s experience, his or her self-concept, the relevance of the information and readiness to learn (Knowles, 1990) are all key aspects of the learning model. In fact, says Merriam (2008), “the more we know about how adults learn the better we are able to structure learning activities that resonate with those adult learners with whom we work” (p. 93).
Though andragogy is an important learning model, especially in designing formal learning opportunities, it is not a complete framework from which to understand or create the linkages between the complex interactions of the ecological, economic, and social systems. Hence, rather than a grand theory, andragogy operates in tandem with other learning theories in order to explain how adults learn within organizations and as part of systems. Detailing levels of analysis in learning theory may help classify learning theory at the learner, organizational, and system levels.

Noted adult theorists such as Finger and Verlaan (1995), O’Sullivan (1999, 2002), and Taylor (2008) have brought forth other learning theories to help create the links between the natural and human systems and the learner. One learning theory that proposes to link the biophysical to the social, cultural, and political spheres, the local to the global arenas, and action to reflection and research, is social environmental learning, an alternative to traditional problem-solving approaches, and collective and collaborative framework for learning (Finger & Verlaan, 1995). Finger and Verlaan maintained that environmental degradation cannot be fixed with individual approaches but rather will require a new cooperative and interdisciplinary system for “learning the way out” (p. 505).

Predominantly a model of collective learning, the social environmental learning model requires a formal structure for transmission and practical implementation, including an efficient feedback loop between theory and practice. “Learning our way out” (Finger & Asun, 2001, p. 505), is not about managing the social or environmental consequences, but about breaking out of the vicious cycle of short term fixes, both economical and technological.

Finger and Asun (2001) argue that a transformation in adult education is taking place, in part because of the need for permanent education as a way of life. According to Finger and Asun (2001), and Finger, Jansen, and Wildemeersch (1998), as adult education becomes more privatized and commercialized, it loses its emancipatory practices for social change. “The ecological crisis is the ultimate challenge for adult education” (Finger & Asun, 2001, p. 120), especially for cultures and societies that cannot export their ecological and social
cultural costs due to industrialization. O’Sullivan (1999) affirms that one of the more prominent omissions from adult education is the lack of attention to ecological issues, preempted often by the focus on inter-human problems rather than the broader biotic issues. Learning our way out is contingent upon the ability to relate individual and collective learning to institutional and organizational transformation (Finger & Asun, 2001).

There is a need for transforming, through training, the natural capacity of inference into habits of critical examination and inquiry (Dewey, 1997). Finger and Verlaan (1995) described a leadership development program that has not lost its capacity for social change: the leadership for environment and development educational model (LEAD). In this international program, cohorts of cross-national and cross-sector representatives are brought together in order to learn as individuals, as a group, and as a community about the particular ecological and social issues facing each country. As the cohort identifies and challenges the constraints of the issues, they determine transnational and transsectoral strategies as ways to resolve the issues.

Westley (2002) has explored the sense-making and management process of a natural resource manager, acknowledging that more studies of practitioners are needed. Yet what has not been done is to explore and explain how other actors – from business and industry, in other regulatory arenas, in environmental and community organizations, in educational and consultant arenas – are making sense of the complex environmental and natural resource issues that interact with the political, organizational, and inter-organizational systems. Exploring how those directly involved with the environmental issues make sense of them will lend knowledge to designing better strategies that achieve sustainable interactions, beyond what is currently familiar. As Finger and Verlaan (1995) affirm, “learning our way out” will involve representatives from all countries and sectors, with their specific angles on environment and development issues (p. 506). Others, such as Rost (1993a), Addor et al. (2005), Allen et al. (1998a), Allen et al. (1998b), Berry and Gordon (1993; 2006), Chrislip and Larson (1994), Clark et al. (2001), Egri and Frost (1994), Egri and Herman (2000), Ewel (2001), Heifetz (1998), Senge (1996), Vredenburg and Westley (1999), and Yaffee (1995).
have discussed a similar model in describing leadership for the 21st century that is needed to create ecological and social change. Bingham (1986), in recounting the history of environmental conflict resolution, offered examples of how cross-organizational and cross-sector representatives have learned from one another and have begun to resolve various kinds of natural resources and environmental issues. Gray (1989), in her seminal work, *Collaborating: Finding Common Ground for Multiparty Solutions*, not only offers examples, but also describes the process for creating the context for the social-environmental learning that Finger and Verlaan (1995) articulate. Daniels and Walker (2001) have contributed a conceptual, collaborative learning approach for how groups in conflict can learn together, prior to developing transnational and transsectoral strategies for dealing with major environmental crises.

**Transformative Learning Theory**

Another learning theory that explains how people changed the way they think about the world is transformative learning theory (Taylor, 2008). According to Mezirow (2000),

At the heart of helping each learner develop a more critical worldview, “learning is understood as the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one’s experience as guide to action.” (p. 5)

Transformative learning theory argues that significant learning can lead to a transformation in worldview, potentially resulting in behavioral changes that are more open to working with complex issues like resource sustainability (Sims & Sinclair, 2008). Marschke and Sinclair (2007) describe transformative learning as a process of learning, one that accommodates a social context in which learning can occur, and is ripe for adult learners who place high value on the potential for learning in situations where individuals are involved in activities that encourage their participation, their interpretations, and their experiences. Each person in the learning situation brings frames of reference or structures of assumptions and expectations that frame an individual’s tacit points of view and influence their thinking, beliefs, and actions (Taylor, 2008).
There are several alternative concepts about transformative learning, one of which is social emancipatory learning. As an alternative perspective, social emancipatory learning considers the role of context and social change in the transformative experience. Two additional conceptual considerations of transformational learning exist – psychoanalytic and psycho development – but the unit of analysis is specific to the individual. Social emancipatory aspects of transformative learning offer a way to foster transformative learning (Taylor, 2008).

Acknowledging the work of Freire, Taylor depicts three teaching approaches to foster learning. The first is critical reflection and its significant role in helping learners reclaim their power for making change. The second is the role of the instructor or facilitator using a dialogical methodology to engage the learner in problem-solving activities in which the learners are actively seeking to understand and “work” the problem. The third aspect is the actual role and relationship between the instructor and the student, the facilitator and the participant, which is one of mutual understanding and learning and very similar to the model of andragogy articulated by Knowles (1990).

O’Sullivan introduces a planetary view of transformative learning (1999). Similar to Finger and Asun (2001), who suggest that adult education requires a reorganization of its educational and social system, O’Sullivan (1999) goes beyond to include the political system, expressing his concern for the “technical-industrial” values of the Western Euro-centric world (Taylor, 2008). One could argue that “technical-industrial” values are specific to the Western Euro-centric world, yet these values dominate portions of Eastern-centric cultures, which limit recognition of the interconnectedness of the natural and human environment. Creating and supporting a transformative learning environment for a learner can be difficult. Taylor, in his description of how of transformation can occur, suggests that perspectives or frames of reference change or are altered through a series of meaningful experiences, but also through very painful experiences such as a natural disaster or a job loss. Hence, unless a series of meaningful learning experiences can be developed, it may be difficult to integrate the learner’s experience as well as his or her motivation.
Summary

The literature review identified four areas of knowledge where there were gaps. The first gap is the adult learning literature; the second gap is the leadership literature; the third gap is the leadership development literature; and the fourth gap is qualitative research on leadership and leadership development.

Within the adult learning literature, natural resources and “environmental concerns have largely been neglected in adult education discourse and practice,” say Clover and Hill (2003, p. 1). Examples of the growing body of literature include environmental adult education, including ecological learning, theory, and practice for socio-environmental change (Belanger, 2003; Clover & Hill, 2003); the role of transformative learning in building an ecozoic vision, one where humans align with natural processes (O’Sullivan, 1999); and how adult learning can contribute to organizational change and transformation, taking into account vested interests and power structures (Finger & Asun, 2001). Clover and Hill (2003) posit,

More educational opportunities are required in order for adults to come together and collectively share experiences and learn from each other, challenge assumptions and discursive norms, and create new knowledge for socio-environmental change. Environmental adult education is one framework within which adult educators can facilitate collective learning opportunities for adults around ecological concerns in order to formulate concrete responses. (p. 1)

Within the literature on leadership, natural resources and environmental concerns have largely been neglected, although the literature is growing (Allen et al., 1998a; Allen et al., 1998b; Danter, Greist, Mullins, & Norland, 2000; Egri & Herman, 2000; Feyerherm, 1994; Gordon & Barry, 1993, 2006; Leopold, 1949; Portugal & Yukl, 1994; Yaffee, 1995). A major portion of the traditional leadership literature has predominantly centered on developing the individual leader within an intra-organizational framework in order to lead an organization or a division or unit within that organization. Much of this literature has focused on business, military, and public administration.
Although a new body of leadership literature is growing (shared leadership, complexity leadership, adaptive leadership, and distributed leadership), developing the leader remains the dominant theoretical lens. This has been the case to the exclusion of a broad base of leaders found within the natural resources and environmental profession that represent leaders at all levels of government within the public sector (federal, state, county, and local level), and three other sectors which include the private sector, non-profit, and community leadership. Another aspect of the leadership literature is the attention to intra-organizational leadership as opposed to including an inter-organizational framework (Feyerherm, 1994). Natural resources and environmental leadership plays a crucial role in managing the current and anticipated environmental challenges forecasted and will play a significant role in the 21st century.

The third literature area is on leadership development. Although the literature in this area is weak, it is growing area. Examples of the literature on natural resources and environmental concerns include Addor et al. (2005), Newman et al. (2007), and Westley (2005). Preparation is certainly one aspect of effective leadership. Given the ongoing retirement of the baby boomer generation, it becomes critical to prepare natural resources and environmental leaders in their roles as environmental decision-makers, and in preparation for current and future ecological challenges like sea level rise. Currently, there is an adult learning model for leadership development that incorporates both a leader (human capital) and a leadership development (social capital) component that are linked together as a way to examine the leadership development model that Day (2000) advocates.

The fourth area is the underutilization of qualitative research in the studies on leadership and leadership development (Conger, 1998; Conger & Toegal, 2002). The phenomenon of leadership appears to be multi-dimensional, and qualitative research can play a role in understanding how leadership is carried out in its various dimensions.
CHAPTER 3
METHODOLOGY

The methodological considerations in this chapter include a rationale for qualitative research of a leadership phenomenon, an overview of and introduction to the research design, presentation of the data collection and data analysis methods, the role of the researcher, and the strengths and limitations of the study.

Rationale for Qualitative Research

Patton (2002) expounds on the value of quantitative and qualitative inquiry as two major paradigms for conducting research:

Both qualitative or naturalistic inquiry and quantitative or experimental inquiry seek honest, meaningful, credible, and empirically supported findings. Any credible research strategy requires that the investigator adopt a stance of neutrality with regard to the phenomenon under study. This simply means that the investigator does not set out to prove a particular perspective or manipulate the data to arrive at predisposed truths. The neutral investigator enters the research arena with no ax to grind, no theory to prove (to test but not prove), and no predetermined results to support. Rather the investigator’s commitment is to understand the world as it unfolds, be true to complexities and multiple perspectives as they emerge, and be balanced in reporting both confirmatory and disconfirming evidence with regard to any conclusions offered. (p. 51)

Defined as a “loose collection of logically related assumptions, concepts, or propositions that orient thinking and research” (Bogdan & Biklen, 1998, p. 22), a paradigm guides the actions of the research study. Distinct from theory, the term paradigm explains a set of practices about a specific discipline. A basis for research, a paradigm links the unit of research with the research questions and the approach of the research, and describes the methodological basis and rationale for the results of the research, in particular how the results will be interpreted.

According to Conger and Toegal (2002), quantitative research, like multi-rater feedback methods, has greatly influenced how the leadership phenomenon is studied. For example, the results of a multi-rater feedback assessment is designed to assist in the development of a leadership plan. Receiving anonymous and aggregated feedback from
raters based on defined dimensions of leadership, the leader can review which competencies are most frequently reported and which competencies are reported less. This allows the leader to use the perceptions of others to help determine professional areas of strengths and areas for improvement. The universal dimensions of leadership found within a particular multi-rater assessment are often well delineated and perhaps oversimplified, limiting the value of the assessment. Conger and Toegal (2002) state the universal dimensions are unlikely to apply across all levels of an organization, given the leadership requirements of an organization are dynamic and thus will differ. Leadership rather can be thought of as a “complex interplay between the actions of the leader, the reactions of the followers, and the context within which the influence occurs” (Goethals et al., 2004, p. 609).

Qualitative research in leadership studies is underutilized as a method that explores and examines the dynamic interplay between the context, the followers, and the leaders (Conger, 1998; Conger & Toegal, 2002; Ospina, 2003). An immediate value of qualitative research is that it offers a way of understanding a complex phenomenon like leadership.

There are several distinct advantages of conducting qualitative research on the phenomenon of the leadership (Conger, Bryman, & Alvesson as cited in Ospina, 2003) including:

- the flexibility to follow unexpected ideas during research and explore processes effectively;
- sensitivity to contextual factors;
- the ability to study symbolic dimensions and social meaning; and
- increased opportunities to develop empirically supported new ideas and theories, in-depth and longitudinal explorations of leadership phenomena, and with relevance and interest for practitioners. (p. 2)

Qualitative research allows the researcher to explore a social or human problem from the words and perspectives of the participants (Creswell, 1998). As a result, the descriptions provided by the participants contain a variety of details including the meanings they ascribe in recounting a situation or experience. The researcher’s task is to understand the experience
from the perspective of the participant before providing his or her own explanation or interpretation. Besides dialogue and understanding about a phenomenon, a human or social problem, a qualitative study can fill a void in existing literature or establish a new line of thinking about a particular issue or understudied group (Creswell, 1998). Furthermore, “qualitative research can directly influence policy, practice, and future research” (Merriam, 1998, p. 19).

**Overview of the Research Design**

The purpose of this interpretative study was to explore in depth the experiences of natural resources and environmental leaders who participated in a leadership development institute and situate these experiences within adult learning theory. The overarching research question for this study was: *What was the nature of the experiences of leaders who participated in a natural resources leadership institute?*

Participants were selected to participate in the study based on an established set of criteria described in the Participant Selection Criteria and Method section of this chapter. In order to conduct the study, permission was obtained from the Institutional Review Board. Expectations about the research were established and shared with the study participants through an initial email, subsequently reviewed during the initial interview and prior to beginning the interview (Miles & Huberman, 1994). Semi-structured interviews were used to collect the participants’ responses about the nature of their experiences in a leadership development institute. Data analysis was conducted using an interpretive approach, and a consistent process was established for analyzing the data. The interpretative nature of the study rendered a thick and rich description of the study participants’ experiences and the meaning they ascribed to their experiences.

**Interpretative Phenomenological Analysis (IPA)**

The research approach chosen was Interpretative Phenomenological Analysis (IPA). The IPA data analysis framework has theoretical foundations in phenomenology, hermeneutics, and idiography: phenomenological, in that an insider perspective about the lived experiences of individuals is the core of the research design; idiographic, in that the
sense of detail, the particular, is essential to understanding the lived experiences; and hermeneutic, in that the end result is the researcher’s interpretation of what the participants are thinking (Fade, 2004). In IPA, analysis always involves interpretation, on the part of the participant and on the part of the researcher (Smith, Flowers, & Larkin, 2009). IPA has historical roots in psychology and patient-centered research, and the health psychology field comprises the vast majority of IPA publications (Brocki & Wearden, 2006). Because IPA is useful in unfolding the significance of experiences that occur over time, it was deemed an appropriate method of analysis for this particular study.

Phenomenology is concerned with understanding phenomena (actions, events, ideas, etc.) from the perspective of those who have experienced them (Baptiste, Lalley, Milacci, & Mush, 2001). The IPA method borrows heavily on the phenomenologist aspect, which allows the researcher to focus in depth on the lived experience of the study participant, the meaning a participant makes of the lived experience as he or she reflects on the significance of the experience, and how the experience is understood by a particular group of people, in a particular context (Smith et al., 2009).

Moreover, the IPA method embraces the role of the researcher in learning about the lived experience, providing a second order interpretation that draws from the researcher’s own experiences or knowledge (Smith et al., 2009). For example, during an interview process, the researcher develops awareness about his or her own pre-conceptions and sets them aside. Dialogue requires openness to the person speaking in order to understand what is being said, and the meaning or significance that emerges from participant’s response to the question. The researcher can return to his or her insight later, and offer an insightful analysis that was not an initial interpretation of the participant.

Smith and colleagues (2009) describe the IPA as an iterative and inductive cycle, a cycle of moving from specifics to general, from the particular to the shared, from the descriptive to the interpretative, attentive to understanding the participants’ point of view and meaning making within a particular context. Rigor in this process is derived from the “researcher’s presence, the nature of the interaction between researcher and participants, the
triangulation of data, the interpretation of perceptions, and the rich, thick descriptions” (Merriam, 1998, p.151). The primary research question is within an epistemological position, meaning implicit in the formulation of the question is an assumption about what the data can tell the researcher (Smith et al., 2009).

**Study Participants**

The population of study was comprised of individuals who directly work in the natural resources and environmental profession in North Carolina and who had participated in a leadership development institute focused specifically on developing natural resources and environmental leadership. The study participants were employed in the public, private, or non-profit sectors including:

- local, state, and federal agencies;
- non-governmental organizations such as environmental and conservation groups;
- private entities including consultants, business, industry, corporate leaders;
- educators who provide outreach or educational training on natural resources or environmental topics;
- scientists who research natural resources or environmental topics; and
- community leaders, grassroots leaders, and volunteers.

The study participants were leaders in their profession, whether or not they had a supervisory role in their area of expertise. The educational backgrounds included engineering; conservation; forestry; natural resources; fisheries, range, and wildlife management; urban and rural planning; geology; public administration; and education. In addition, they represented specific job functions within their respective professions including regulators, biologists, conservationists, forestry agents, engineers, policy analysts, and adult education specialists. Thus, the findings chronicled different types of natural resources and environmental issues; for example, water quality and quantity, species and habitat fragmentation, rural and urban interface, forestry issues, and urban sprawl. The study participants were diverse in their affiliations and functions and also in the more traditional sense of educational and practical experience in the field, gender, race, and age.
Participant Selection Criteria and Method

Miles and Huberman (1994) inform researchers that data collection is inescapably a selective process; researchers are not able to examine all relevant circumstances, events, and people while collecting data for a study. Instead, they select participants from a population of interest willing to participate in in-depth interviews (Marshall & Rossman, 1999). A common qualitative sampling strategy is purposeful sampling (Merriam, 1998). In this method of data collection, a relatively small number of cases are selected that are successful at something in order to generate a good source of lessons learned (Patton, 2002).

In IPA, the sample size varies, though as an idiographic method, small sample sizes are the norm (Brocki & Wearden, 2006). This study involved purposeful sampling with variation in the phenomenon, settings, and people under study, and yet maintained the ability to identify common patterns or characteristics (Creswell, 1998; Marshall & Rossman, 1999). The purposeful selection of 11 participants for the interpretative study enabled the researcher to explore in depth the experiences of natural resources and environmental leaders who participated in a leadership development institute. While the participants indirectly and anonymously shared a collective experience that occurred over a 10-year period, their experiences would reflect their individual meaning and significance, based on the year he or she attended the institute.

Diversity is a core value in the selection of the applicants for participation in the institute; it was a core condition in purposively selecting participants to participate in the study. The study cohort was chosen, in part, to provide variation in professional affiliation. Rather than selecting a number of participants from the same cohort year whose responses might be comparable from sharing a similar experience, participants were selected from across the cohorts from the most recent cohort experience (the 2008 cohort) to the earliest experience (the 1999 cohort). Hence, the significance of the leadership development experience was captured from multiple perspectives over a ten-year period.
The criteria to assist in selecting a diverse study cohort included:

1. Recognition as a Fellow of the natural resources leadership institute from the period of 1999-2008;
2. Representation from each cohort of the institute from 1999-2008, including two participants from the class of 1999 to gauge responses from the earliest experiences;
3. Representation of various affiliations and expertise within the natural resources and environmental professions (e.g., non-profit conservation/environmental organizations, local or county government, state agencies, federal agencies, educational organizations, community leaders, business and industry and consulting);
4. Participants with traditional supervisory roles as well with non-supervisory roles;
5. Participants who had worked within their organization and with other organizations to find solutions to environmental issues;
6. Participants who conducted different kinds of collaborative projects (i.e., projects that would chronicle a breadth of examples such as water quality and quantity, fishing and commercial fisheries, rural and urban interface, agricultural and genetically modified crops, forestry issues, urban sprawl, and tourism);
7. Interest and availability in sharing one’s experiences and perspectives during a three-hour interview process before December 31, 2009; and
8. Representation of different geographic revisions across the state of North Carolina.

The cohorts from 1995-1998, 2009, and 2010 were not included in the study, though interviews from these cohorts would have offered rich and meaningful perspectives on the nature of the leadership development experience. There were several pragmatic reasons to exclude the five cohorts. Foremost, Cornell University conducted an evaluation of the institute with the 1995-1998 participants to identify necessary programmatic changes. Given the subtle programmatic changes that resulted from the program evaluation, the researcher began with the 1999 cohort, which anticipated a similar instructional context and content. The 2009 cohort was in the process of implementing their practicum projects for a June 2010
graduation deadline and thus did not fulfill at least two of the criteria listed. The 2010 cohort began their leadership experience in January 2010 and will complete their program in June 2011, well after the completion of the study.

Due to the selection process identified, a high probability existed to receive a rich mix of perspectives in the participants’ responses about processes, people, programs, interactions, and interests (Marshall & Rossman, 1999). The researcher distributed an email requesting participation of the 1999-2008 Fellows of the NRLI in October 2009, following approval of the research proposal by the Institutional Review Board (IRB). The request for participation detailed the expected timeframe of the interviews and time commitment on part of the participants. In all, 31 Fellows expressed an interest in participating in the study (had the interview time been extended, the researcher believes additional Fellows would have volunteered). This level of interest provided the researcher with access to multiple perspectives about a shared experience over a 10-year period, with emphasis on discovery, in-depth understanding, and insights about the phenomenon (Merriam, 1998; Patton, 2002). The initial pool of interested respondents narrowed as the researcher worked through the established criteria and scheduling conflicts. Formal letters of consent were emailed to participants who agreed to participant in the study. Upon receipt of final confirmation from the participant to participate in the study, the initial interviews were scheduled in November 2009, and the final interviews in December 2009. The study participants remained anonymous to one another throughout the study.

Data Collection Setting

Merriam (1998) characterizes qualitative research as “an umbrella concept covering several forms of inquiry that explain the meaning of social phenomena with as little disruption of the natural setting as possible” (p. 5). This is a major strength of qualitative research, the opportunity to understand events in natural settings (Miles & Huberman, 1994). The researcher conducted 11 interviews, scheduled across two meetings. The first meeting scheduled was face-to-face for approximately two hours; the second meeting was conducted by phone for about an hour. The initial face-to-face interviews were either at the participant’s
work place or at a location of the participant’s choice. Some of the participants chose to meet with the researcher in her office; others selected a setting geographically between their work location and the researcher’s location. Face-to-face interviews allowed for access and rapport with the study participants (Creswell, 1998).

Data Collection Methods

According to Patton (2002), there are three kinds of qualitative data gathering techniques: interviews, observations, and document analysis. For this study, semi-structured interviews conducted face to face and by phone served as primary mediums of data collection. The semi-structured interview comprised both an open-ended and closed-ended question format. This section describes the data collection process.

The researcher conducted 11 semi-structured taped interviews. Semi-structured interviews are considered the consummate method for IPA because of their predominantly open-ended question format that encourages participants to share their story (Brocki & Wearden, 2006). Semi-structured interviews enabled the participant to share a rich and complex perspective while allowing the researcher the flexibility to query interesting points of view and comments.

Using a semi-structured interview questionnaire with open-ended questions enabled the researcher to understand and capture the participants’ points of view without constraining their responses or predetermining their points of view through a prior selection of questionnaire categories (Patton, 2002). Semi-structured interviews yielded in-depth responses from the participants about their experiences, particular feelings they had about situations and specific knowledge they wanted to convey (Marshall & Rossman, 1999; Rubin & Rubin, 2005). Given the contextual nature of the study, the participants’ comments and communication of specific knowledge and understanding, including facial expressions and body language during the face-to-face interviews, were interpretable and provided evidence of the different perspectives (Creswell, 1998). Although this type of questionnaire takes a considerable amount of time to review and code, and it is subject to the researcher’s interpretation, respondents are able to describe themselves and their experience.
A section of closed-ended questions was included in the semi-structured format to allow the researcher to collect demographic information about the participants. The closed-ended questions narrowed the study participants’ responses to obtain discrete information. The closed-ended questions were designed to gather information about each participant’s professional and organizational background, work activities, roles and responsibilities, supervisory experience, area of expertise, years of experience, and the year he or she participated in the Natural Resources Leadership Institute.

There were two parts to the data collection method as opposed to a three-part method recommended by Seidman (2006) for phenomenological interviewing. The major emphasis of the first face-to-face interview was asking the participant to say as much as possible about him or herself based on the nature of their experiences in participating in the Institute. This included gathering basic demographic information about each study participant. The second interview, conducted by phone, continued to provide the participants with time to detail their experiences and focus on their impressions and opinions about how to prepare future natural resources and environmental leaders for the 21st century. Seidman refers to the third interview or third component as reflection on the meaning of the previous interviews. In this study, reflection of meaning occurred by asking follow-up questions during both interviews and following the interviews when the study participants conducted member checks of the interview transcripts.

The initial face-to-face interviews averaged about 121 minutes for each interview, for a total of 22.18 hours. The second interview, conducted by phone, averaged 52 minutes for each interview or 9.53 hours. Typically, the interview times, whether face-to-face (scheduled for two hours) or by phone (scheduled for one hour) varied, as some interviews went notably longer than the projected time while others were accomplished in less time. Invested in the interview process was a total of 32 hours and 10 minutes.

The interviews were conducted from November 2009 through December 2009. Once the face-to-face interview was completed, it was transcribed verbatim and returned to the participant. A verbatim transcription of the phone interview was provided to the study
participants. A part of the interview protocol ensured that the study participants had the opportunity to review their transcripts for the meaning he or she wanted to convey, to clarify sections by adding or editing information, and identify any sections or statements the participant believed might compromise someone’s identity.

The study participants had the opportunity to ask questions during the interviews. The researcher also had the opportunity to ask questions of clarification during the face-to-face and phone interviews, and to seek further explanation about undefined terms or vague phrases, and pursue concepts or themes introduced by the participants during the second interview. The challenge for the researcher, according to Miles and Huberman (1994), is to be explicitly mindful of the purpose of the study and the conceptual lens while allowing oneself to be open to the unknown and the unexpected, or reeducated by things the researcher thought he or she knew. Baptiste (2001) states, “the point of research is not to tell people what they already know; the point is to help the participants and the readers understand more deeply and broadly their experiences” (p. 13).

**Data Analysis Methods**

Since the study used an IPA approach to analyze the data about the participants’ experiences, the data analysis was inductive. Moving from specific to general knowledge, a thematic analysis was conducted of the participants’ responses. Making sense out of the data is the process of data analysis (Merriam, 1998). “Analysis entails classifying, comparing, weighing, and combining material from the interviews to extract the meaning and implications, to reveal patterns, or to stitch together descriptions of events into a coherent narrative” (Rubin & Rubin, 2005, p. 201). Analysis begins early, for example, during the data collection phase, and continues throughout the research process (Merriam, 1998; Miles & Huberman, 1994; Rubin & Rubin, 2005). Merriam (1998) posits, “data collection and analysis is a simultaneous activity in qualitative research” (p. 151). Ryan and Bernard (2003) define the data analysis process as analyzing text by “1) discovering themes and subthemes, 2) winnowing themes to a manageable few that are important to the research, 3) building hierarchies of themes or code books, and 4) linking themes into theoretical models” (p. 85).
The IPA method of data analysis requires close interaction between the analyst and the text (Brocki & Wearden, 2006). A three-phase data management approach using data preparation, data identification, and data manipulation offered by Reid (1992) provides the close interaction required of qualitative data analysis (as cited in Merriam, 1998). The data preparation phase included transcribing the interviews, constructing field notes of general impressions about each interview, and formatting the transcripts for the initial review.

A part of data preparation occurred during the data collection process; the researcher intentionally reflected on the data and the analysis processes to understand and code the data (Watt, 2007). One method of reflexivity was the use of memos captured in a separate column from the column used to capture the initial data tags. The researcher’s memos primarily recorded understanding of the data, particular views the researcher had about the data, or comments the researcher made during the interview process and whether those hampered the interview process. The memos outlined the initial analytical decisions, and enabled the researcher to begin to present a rationale for analysis (Fade, 2004).

The phase of data identification was an ongoing process. Each individual transcript was initially examined. The researcher read the transcripts several times from beginning to end to become familiar with the study participants’ perspectives, before beginning to serial tag the data (Baptiste, 2001). Tagging or coding the data was a process of selecting “from an amorphous body of material, bits and pieces that satisfy the researcher’s curiosity and help support the purpose of the study” (Baptiste, 2001, p. 11). Labeling segments of text based on the study participants’ responses resulted in descriptive tags about the events, actions, ideas, or concerns that a participant used to describe their experiences.

How can this narrative be interpreted so that it provides “an understanding of and illuminates the life and culture that created it?” (Patton, 2002, p. 115). Coding is the process of combing the data for themes, ideas, and categories, and then marking similar passages of text with a code label for retrieval at a later stage of further comparison and analysis. Coding the data makes it easier to search the data, to make comparisons, and to identify any patterns that require further investigation. As the researcher read the data set, the number of codes
evolved and grew as more topics and sometimes themes became apparent. The list of codes helped to identify the issues contained in the data set of the raw data of interviews and documents. The interpretive approach (Miles & Huberman, 1994) assisted in identifying meanings.

During the data manipulation phase, a process of parallel coding of the data occurred or comparing responses across the transcripts (Baptiste, 2001), as the researcher began to sort and tie together conceptual ideas about the tags (or codes) as well as discern any concerns about the methodology and other substantive comments that could inform future research projects. The process of defining and redefining the major categories and subthemes continued through several iterations, providing different angles from which to understand and listen to the data. Baptist (2001) offers these points about the research:

The point of research is not to tell people what they already know. The point is help our participants [subjects] and readers understand more broadly and deeply their experiences. This criterion of deeper and broader understanding demands that analysts develop stories or build theories. They do so by positing a parsimonious, integrated set of associations and relationships between and among the various concepts they have formulated – relationships that were previously undocumented, obscure, or unknown. (p. 13)

As a part of the data analysis process, data reduction strategies were employed using a process of selecting, focusing, simplifying, abstracting, and transforming the data. This process occurred throughout the research project (Miles & Huberman, 1994). The interpretative framework assisted in determining which data to code, which data to cluster, and which data helped the narrative to evolve. When additional insights were determined to be useful to the analysis, the participants’ and the researcher’s interpretations were included.

Displaying the data involved presenting it in an organized and compressed fashion to begin drawing conclusions about the findings (Miles & Huberman, 1994). Data display resulted in choosing various headings to identify sections of the narrative as well as tables and figures to convey a narrative analysis. The data display often used verbatim extracts of the participants’ responses to support grounding of their stories and interpretations.
**Ethical Issues**

The researcher acquired permission from the Institutional Review Board before conducting the research (Creswell, 1998). Each study participant received an explanation about the study and a participant consent form prior to the interview. Each study participant was afforded the following protections as a participant of the research:

- the ability to ask questions about the study at any time or to choose not to respond to a question;
- to request that the tape recorder was not used any time during the interview or during certain times;
- to understand how the data would be used; and
- the opportunity to withdraw from the study at any time.

The study participants also had the right to expect the researcher to maintain confidentiality throughout the dissertation process.

Each person received a pseudonym that maintained anonymity during the taped interview and the verbatim transcription. Furthermore, each participant’s organizational affiliation received a generic label (e.g., federal agency, county government) rather than a descriptive identity. When participants identified other individuals or organizations during the interview process, the transcripts were edited to assign a general association or pseudonym.

The transcriptionist hired to transcribe the digital recordings signed a confidentiality agreement and removed all copies of the digital recordings and transcripts from the transcriptionist’s database. A set of the digital recordings and transcripts remain secure with the researcher. The digital materials were used as needed to support the research, in particular to verify sections of the transcripts for additional understanding or to verify the tone or inflection of a participant’s voice as a way to understand the meaning he or she wanted to impart.
Role of the Researcher

There is an explicit expectation in IPA for the interpretative role of the researcher (Brocki & Wearden, 2006). The researcher is primarily concerned with the process of the research, in deriving meaning from the data collected, and thus serves as the primary instrument for data collection (Merriam, 1998). “In qualitative inquiry the researcher is the instrument” (Patton, 2002, p.15). The philosophical assumptions of the qualitative researcher are captured in the following quote from Creswell (1998):

...knowledge is within the meanings people make of it; knowledge is gained through people talking about their meanings; knowledge is laced with personal biases and values; knowledge is written in a personal, up-close way; and knowledge evolves, emerges, and is inextricably tied to the context in which it is studied.

(p. 19)

For the qualitative researcher, “neutrality does not mean detachment” (Patton, 2002, p. 51). Rather, neutrality signifies the importance of recognizing the values and biases the researcher uncovers during the study process and explicitly elaborates on how those biases and values might influence the nature or direction of the research. Fundamentally, qualitative researchers assume that human behavior is significantly influenced by the setting in which it occurs. According to Creswell and Miller (2000),

...with a constructivist and interpretive paradigm, the researcher believes in a pluralistic, interpretive, open-ended, and contextualize (e.g., sensitive to place and situation) perspectives toward reality. The validity procedures reflected in this thinking present criteria with labels distinct from quantitative approaches, such as trustworthiness (i.e., credibility, transferability, dependability, and confirmability), and authenticity (i.e., fairness, enlarges personal constructions, leads to improved understanding of constructions of others, stimulates action, and empowers action). (p. 125)

As the instrument of the qualitative research, the researcher attended to any ethical, interpersonal, and technical issues of the research. The researcher discussed the ethical considerations with the participants to ensure an understanding and comfort level with the research process. Shared expectations were established earlier on between the participants.
and the researcher including how to limit interruptions and to maintain confidentiality of their responses (Miles & Huberman, 1994).

To help achieve standards for the research, the researcher undertook to bracket personal bias by limiting her perspective and additional questions until the participant had concluded his or her thoughts. The researcher also bracketed her initial reflections during the memo process of the data analysis to capture personal biases. “Bracketing,” a term originating in Husserl’s phenomenology, is the process of suspending existing knowledge and personal experiences associated with research, including critical assumptions the researcher has made about everyday existence (Schwandt, 2001). The biases, values, and judgments of the researcher were stated explicitly in the research report (Creswell, 1994).

For example, a limitation of the research is the emic or the insider perspective of the researcher (Patton, 2002). The researcher provides leadership for the institute and thus had a high level of familiarity with the context of the institute and to some degree, with study participants. Hence, the researcher took care to ensure that her perspectives as an insider were set aside as she listened to participants describe the nature of their experiences. This meant adopting an etic or an outsider approach. The steps the researcher took to mitigate bias were insisting on a two-part interview process, verbatim transcriptions and review of the transcriptions by the participants, and reading and rereading the transcripts before determining an interpretation of the findings. A reflective journal was part of the dissertation process, used as a way to develop a thoughtful and rigorous research plan.

The researcher was interested in conducting the research for two reasons. One was to learn about the nature of the participants’ experiences over time and their perspectives on how to prepare future natural resources and environmental leaders for the 21st century. Second, was to use the study as context for reflective practice for the researcher, as a means of reflection to surface and critically review the tacit understandings that have developed around repetitive experiences in her specialized practice of leadership development (Schon, 1983). As Mezirow (2000) describes, becoming critically reflective of one’s own
assumptions, of why as well as how, provides the key to transforming habits of mind and frames of reference.

The researcher provided the funding for this research since no outside funds were obtained for the research.

**Trustworthiness Criteria**

Trustworthiness in a naturalistic investigation is the quality of an investigation (and its findings) that makes it noteworthy to an audience (Schwandt, 2001). The trustworthiness of a qualitative investigation is judged by four criteria: (a) credibility, (b) transferability, (c) dependability, and (d) confirmability (Marshall & Rossman, 1999; Schwandt, 2001).

“Any research strategy ultimately needs credibility to be useful” (Patton, 2002, p. 51). The credibility of the research provides assurances that the inquiry is accurately identified and described, and that the researcher’s reconstruction and representation fit the respondents’ views (Creswell & Miller, 2000; Martin, Marshall & Rossman, 1999; Schwandt, 2001). Credibility (which parallels internal validity) indicates the believability of the interpretations (Marshall & Rossman, 1999).

Transferability (which parallels external validity) is concerned with case-to-case transfer. Sufficient information needs to be provided to ensure that the reader could establish a degree of similarity with another case. Dependability (which parallels reliability) ensures that the process was logical, traceable, and documented. It accounts for and describes changes in the phenomenon of study. Confirmability (parallel to objectivity) links assertions, findings, and interpretations in the discernment of the data.

Qualitative research has been characterized as being more subject to bias than quantitative research. One way to ensure sensitivity of trustworthiness and reduce researcher bias is triangulation of the data or the use of multiple methods of data collection and analysis (Patton, 2002). Looking at the phenomenon in diverse ways throughout the research process can strengthen confidence in the conclusions. Triangulation in research can take a variety of forms (Patton, 2002): methods triangulation (review for consistency of findings using different data collection methods such as qualitative or quantitative or mixed methods);
triangulation of data sources (review consistency of different data sources using the same method); analyst triangulation (use of multiple analysts to review findings including the participants of the research); and theory and perspective triangulation (use of multiple perspective or theories to interpret the data). The point of triangulation is not to demonstrate that different methods yield the same results, but rather to test for consistency, and where inconsistencies result in the findings, bring forth the deeper insights of the inconsistencies in the research (Patton, 2002).

In this study, the researcher conducted triangulation of data sources and perspectives. Triangulation of data sources were checked for consistency, in what the participants said and that what was said was similar over the course of the two interviews. Verbatim transcription of the interviews allowed the researcher to review for consistency. For example, during the first interview, one participant talked about the value of the creative processes in problem-solving environmental issues, and he continued to speak about the role of creative processes throughout his second phone interview. Perspective triangulation involved using different theories or perspectives to help interpret the data such as the literature on adult learning theories, leadership, leadership development, and environmental conflict resolution.

Other techniques to enhance quality and credibility of the research included:

1. Participant checks: The participants reviewed their transcripts following the interview process to clarify responses or remove personal identifiable information. The interviews were transcribed verbatim, which allowed the participants to review their responses. This technique assisted with description validity (Creswell, 1994).

2. Searching for a deeper understanding: During the interviews, the researcher sought clarification for unclear or ambiguous responses. This enhanced the researcher’s understanding about the participant’s perception of a particular topic or provided a richer understanding about the topic.

3. Maintaining ongoing reflectivity: Maintaining ongoing reflectivity in the study and during the data analysis occurred by reading and rereading the transcripts. This is one
way to ensure interpretations are the participant’s account to reduce researcher bias and yet where appropriate, distinguish the interpretations of the analyst (Brocki & Wearden, 2006).

**Limitations of the Study**

The researcher identified seven limitations of the study.

1. Lack of pilot interview: A pilot test of the interview protocol was not conducted as originally intended due to time constraints. Based on the researcher’s experience with pilot interviews, minor revisions would have been made to the interview protocol, including the elimination of one question.

2. Inadequate time between first and second interview: Each participant had the opportunity to review his or her transcripts following the face-to-face and phone interviews. Typically, the interview transcripts were emailed to the participants several days following the initial interview. The second interview (by phone) was scheduled approximately two to three weeks following the first face-to-face interview. The time between the first interview and the second interview may not have allowed the participant time to reflect on the transcript prior to their participation in the phone interview.

3. Lacking a negative case: A potential weakness of the study was the short time span of the interviews, from November 2009 to December 2009. Participants, who might have been interested in participating in the study, may have been unable to volunteer given the two-month window. This may have limited the researcher’s ability to interview someone who had less than a meaningful experience or a very critical viewpoint about his or her experience.

4. Limited population: Limiting the data set to a small group (11 participants) may have reduced the possibility of including participants who received less than a valuable experience or excluded the potential for additional findings by not including at two or more participants from each cohort.

5. Researcher as an insider: A potential limitation of this study is the researcher’s role as a program leader of the institute. The researcher may have unintentionally influenced participants’ responses to the interview questions. For example, a participant may have
changed the nature of a response if he or she perceived that the researcher attached a degree of importance to the question. An effort was made to maintain a neutral tone during the interview process. Specifically, the researcher took time prior to conducting the research to request that participants provide candid responses. A comprehensive effort to minimize bias effect and enhance credibility of the findings was made through triangulation of data sources and multiple perspectives (Patton, 2002). However, in spite of this effort, some participants may have provided responses out of respect for the researcher.

6. Inability to analyze the second research question: Although the data gathered for the second research question focused predominantly on preparing future leaders for the 21st century, time constraints prohibited the analysis of this data for this study. An analysis will be conducted later. The researcher was interested in conducting the research to learn about the nature of the participants’ experiences over time and their perspectives on how to prepare future natural resources and environmental leaders for the 21st century. Hence, the study is limited, in particular for the researcher, because the latter research question could not be analyzed.

7. Inability to share a draft of the findings: The researcher intended to share a draft of the findings with the study participants, to receive additional comments and reflections from them. This did not occur due to time constraints.

Strengths of the Study

The researcher identified four strengths of the study.

1. Similar data collection method and analysis for each study participant: The data collection process was similar for the 11 participants. Each of the participants responded to the same questions, participated in two interviews, and reviewed their transcripts following each interview to clarify any responses and remove any identifying data. The same researcher conducted all 11 interviews and used the same process for data analysis.

2. Rapport and trust to set clear expectations: Jackson and Parry (2008) assert there may be a tendency for the interviewee to want to tell the researcher what he or she thinks the researcher wants to hear, about leadership or a particular experience. The participant may
convey a good impression in order to avoid discussions about situations of which the leader is not proud. There could be confusion between how the leader believes they lead versus how they actually lead. To limit these tendencies, the researcher used the level of trust to encourage thoughtful and open responses. Because the research was focused on the opinions of the participants, there was less need for them to make a good impression, in particular because the study was focused on their experiences and their opinions about those experiences. Three of the participants, Joan, Mark, and Ann, were very clear during their responses in indicating when their experiences had less meaning and significance to them (e.g., Joan stated that the practicum had less meaning to her overall learning experience).

3. Convene participants following completion of study: Another potential strength of the study is the amount of interest and conversation generated by the study participants. The study participants would like to gather and discuss the results of the study. This gathering would allow for reflection that did not occur during the initial findings and discuss how the participants would like to use the findings to shape the future of the institute.

4. Researcher as an insider: A strength of the study was that the researcher was an insider. Although identified as a limitation, this positionality may have lent strength to the research that would not have been possible otherwise. First, since the Fellows are graduates of the Institute, the role of the researcher is limited regarding power over the participants. Second, the researcher has credibility with individuals involved with the activities of the leadership institute and as a result, participants and organizations may be more willing to participate in the studies of this nature. The researcher believes this level of credibility assisted in eliciting the candid, very descriptive, and explanatory information from the study participants. Furthermore, the researcher is familiar with the institute’s culture – its history, language, symbols, and norms – hence the interviews could focus on the substantive questions, lending to a deeper analysis of the information gathered.

Summary

The purpose of this Interpretative Phenomenological Analysis study was to explore the experiences of natural resources and environmental leaders who participated in a
leadership development institute. With theoretical foundations in phenomenology, hermeneutics, and idiography, the researcher was able to provide an insider perspective on the lived experiences of individuals through their narrative of particulars, sense of detail, and interpretation, and the researcher’s interpretation of the participants’ responses (Fade, 2004). In IPA, analysis always involves interpretation (Smith et al., 2009).

Eleven participants were selected to participate in the study who directly reflected the purpose of the interpretative study, which was to explore in depth the experiences of natural resources and environmental leaders who participated in a leadership development institute. While the participants indirectly shared a common core experience, their experiences would reflect their individual meaning and significance, based on the year he or she attended the institute. The participants remained anonymous to each other throughout the study.

Because diversity is a core fundamental value in the selection of the participants for participation into the institute, the same core value was used to select as diverse of a cohort as possible. Rather than selecting a number of participants from the same cohort year whose responses might be comparable because they had shared a similar experience, selecting from across the cohorts offered the opportunity to capture the significance of the leadership development experience most recently (the 2008 cohort) and the earliest experience (the 1999 cohort). Hence, the significance of the leadership development experience could be captured over a ten-year period.

By exploring the nature of the experiences of leaders who participated in a natural resources leadership institute, the researcher found a rich source of explanations for the nature of the participants’ experience and in part, how this knowledge might contribute to the refinement and continued development of the institute into the 21st century.
CHAPTER 4
NATURAL RESOURCES AND ENVIRONMENTAL LEADERSHIP IN CONTEXT

The purpose of this interpretative study was to explore in depth the experiences of natural resources and environmental leaders who participated in a leadership development institute and situate these experiences within adult learning theory. An alternative model of leadership tailored for natural resources and environmental leaders, the institute advanced a new way of learning about how to influence integrative solutions to complex environmental issues.

This chapter contextualizes the experiences of environmental and natural resources leaders who participated in the study. Placing the behavior of individuals in the context of their lives allows what they said to become more meaningful and understandable (Seidman, 2006). In order to provide the reader with a foundation from which to appreciate the leadership development institute and the experiences shared by the participants, a conceptual and structural framework of the Natural Resources Leadership Institute is described. This section is followed by a demographic view of the participants in order to familiarize the reader with the natural resources and environmental leaders who agreed to participate in the study. As told from the voice and perspective of the participants, a comprehensive profile is provided that affords context for the presentation of findings in Chapter 5.

Natural Resources Leadership Institute: A Profile

This purpose of this section is to introduce the reader to the Natural Resources Leadership Institute of the NC Cooperative Service at North Carolina State University. A brief description of the institute is provided from both an historical and current perspective (Levi, 1999).

Overview

The project, “Developing Natural Resources Leadership,” began June 1, 1994 at North Carolina State University with funding of $700,000 provided by the W. K. Kellogg
Foundation for a three-year, multi-state project. The overall objective was to improve the management of natural resources in the South and enhance rural economic development while maintaining or improving environmental quality. Extension faculty from North Carolina State University, the University of Arkansas, and the University of Kentucky developed the initial program, launching the first Institute for natural resource policy leadership in 1995 in North Carolina.

Adopting North Carolina’s instructional model in 1996, extension faculty from the University of Arkansas and the University of Kentucky developed Natural Resources Leadership Institutes for their respective states. Bringing together natural resource managers from the public and private sectors and non-governmental organizations, faculty created an interactive learning environment conducive to exploring controversial natural resources and environmental issues, such as endangered species and forestry management. At the same time, participants learned skills to develop implementable management policies.

Developing Natural Resources Leadership, the project from which the Natural Resources Leadership Institute was created, had three major goals:

1. develop a cadre of leaders strongly committed to the implementation of policies that provided for both economic development and environment protection;
2. disseminate the adoption and implementation of the leadership development program across state lines; and
3. increase the ability of extension faculty to facilitate resolution of local, regional, and state natural resource management policy conflicts.

North Carolina, Kentucky, and Arkansas continued to build their programs, holding annual institutes and conducting associated trainings for other audiences. Extension faculty from five other states participated in the 1996 institutes in order to develop natural resources leadership for their states: Oklahoma participated in the Arkansas institute, Indiana and Virginia participated in the Kentucky institute, and Florida and South Carolina participated in the North Carolina institute. In 1999, project leaders at North Carolina State University provided seed funding from the initial W. K. Kellogg grant to three land grant universities in
Florida, Maryland, and Virginia, who were interested in developing natural resources leadership in their states.

Subsequent NRLIs were launched in Washington and Indiana, and similar natural resources and environmental programs took root for a while in Alaska, Kansas, and Montana. In 1998, Arkansas discontinued its program, folding some of the principles that had been developed into an ongoing rural leadership program; by 2000, South Carolina transitioned its NRLI into a public policy institute; in 2003, Kentucky discontinued their institute. As of 2010, institutes continue in North Carolina, Florida, Indiana, Washington, and Virginia. Although the institute models vary in program design and delivery, North Carolina and Florida follow a similar instructional design including the presence of a practicum component.

**Mission and Programs of the NRLI**

The mission of the Natural Resources Leadership Institute is to “educate and support a diverse group of leaders who are committed to seeking consensus on issues affecting the sustainable development of North Carolina’s natural resources and the quality of our environment” (Natural Resources Leadership Institute, n.d., n.p.)

As an instructional and community service program, the goal of the NRLI is to improve management and policy decisions affecting North Carolina’s communities and natural resources by:

1. improving leadership in natural resource management and policy development;
2. convening stakeholders and decision makers in action-oriented forums to identify, negotiate, and resolve issues;
3. conducting research and providing training in decision-making, negotiation, and facilitation; and
4. expanding the capacity for collaborative problem solving in North Carolina.

Since 1995, the NRLI at North Carolina State University Extension has held annual institutes, providing leadership development to approximately 25 professionals in state, federal, and local government, business and industry, nonprofit environmental organizations,
and higher education. To date, 413 participants have enrolled in the Natural Resources Leadership Institute.

In 1996, the NRLI contracted with the U.S. Forest Service to mediate a dispute among timber interests, environmental organizations, and community members over a proposed timber sale on Bluff Mountain in Madison County, North Carolina. The Bluff Mountain timber sale was the Institute’s first environmental conflict resolution case. As the experience of the institute leadership grew, an increasing number of multi-party cases resulted in the creation of the Environmental Decision-Making program, providing process management services on a contractual basis, predominantly to environmental projects in North Carolina. Since Bluff Mountain, the institute has convened and facilitated close to 40 collaborative processes in the southeast.

**Leadership Development Program Structure**

Although the Environmental Decision-Making program comprises the institute, the Leadership Development Program remains the core intent of the institute. Since its inception, that intent has been to bring together people from government agencies, private industry, community and environmental organizations, and educational institutions in an atmosphere conducive to the exploration of controversial issues and the learning of leadership competencies.

Program design and instruction for the 18-month program is the responsibility of North Carolina State University faculty, with instructional support from the University of North Carolina, dispute resolution practitioners, other natural resource professionals, and community leaders. Consisting of six months of highly interactive workshop sessions, followed by two review sessions and a practicum, the institute curriculum engages participants in hands-on training; they are active in their own leadership development.

The sessions are held in retreat locations throughout North Carolina that reflect the geographic locations of the participants. The strength of the institute lies in the diversity of the participants. Recruitment of participants is directed toward achieving diverse representation from both public and private sectors, including government, education,
industry, non-profit organizations, and private citizens with interest or involvement in the management and protection of natural resources. This includes representing North Carolina’s diversity in terms of place, race, gender, experience, income, and age. Men and women from across North Carolina and beyond reflect the varied life experiences of those who have a stake in the sustainability of their communities and environment. Among the Institute Fellows are federal and state resource professionals, resource professionals in business and industry, local government resource managers, environmental nonprofit leaders, community leaders, landowners, educators, elected officials, policy specialists, and affiliates in other states.

Although the program design has remained constant, the curriculum has evolved, increasingly emphasizing self-discovery, group problem-solving both through development of facilitation and negotiation skills, public speaking, defining and experiencing leadership, and group reflection activities. The Natural Resources Leadership Institute curriculum is designed to assist in developing a cadre of leaders who are able to achieve positive outcomes to controversial natural resource issues by:

1. understanding and applying collaborative mutual gain approaches to problem solving;

2. becoming skilled in working with people who have different interests, values, and philosophies on issues involving natural resources; and

3. understanding natural resource policy and decision-making processes, and taking into account the biological, economic, social, and political implications of natural resource management decisions (Levi, 1999).

To accomplish the three program goals, the participants take part in the following sessions:

January: Building Working Relationships through Self-Discovery and Communicating for Agreement

February: Collaborative Problem Solving and Small Group Facilitation

March: Principled Public Policy Negotiation I
April: Principled Public Policy Negotiation II
May: Washington D.C. Field Trip – Public Participation and Environmental Decision-Making at the Federal Level
June: Building Collaborative Practice and Communicating with the Public and Media
October: Practicum Review Session - Building Collaborative Practice
February: Practicum Review Session - Building Collaborative Practice
June: Graduation (following year)

Two Examples of Practicum Projects

To fulfill the requirements of the program, each participant develops a practicum or a collaborative decision-making project that, once approved, forms the basis of their applied learning for approximately one year. Working in groups or individually, participants apply the skills and information gained in the classroom to situations they face at work, in their organizations, or in their communities. Projects range in size from the community or organizational level to statewide projects, from issues of water quality to issues of park planning, and from land conservation to economic development. The faculty of the institute guide participants and serve in a mentoring role. After reporting on their experiences near the close of the 18 months, participants receive a certificate of completion. Hundreds of projects have been completed since 1995.

The guidelines for practicum projects specify criteria that make a project both appropriate and achievable. An appropriate practicum project is one that:

1. places the participant in a leadership role;
2. deals with natural resources or environmental issues;
3. has an element of controversy (i.e., people can’t agree on a problem or solution);
4. has an element of collaboration or consensus building (i.e., brings people with different interests together or can support bringing people together in the future);
5. utilizes a process by which groups can reach joint decisions (or designs a process in which collaborative decisions can be discussed or explored in the future);

6. results in identifiable (tangible or intangible) benefits to the community (broadly defined as city, county, state, etc.); and

7. shows measurable progress within one year.

An achievable project is one that is within the participant’s sphere of influence (i.e., he/she is in a position to make or influence decisions about the process) and is within the participant’s scope of activities (i.e., is part of his/her job, volunteer activities, or current interests).

A description of two practicum projects in the following section illustrates the range of complexity in collaborative problem-solving.

**Establishing a Shorebird Conservation Working Group in the Tennessee River Valley: A Project Evaluation**

Shorebird populations have declined significantly in the U.S. Shorebirds depend on inland stopover sites to meet the energy demands of migration. Mudflats exposed by seasonal drawdowns of TVA reservoirs provide important habitat for thousands of migratory shorebirds. In 2004, the Tennessee Valley Authority (TVA) altered the drawdown schedule on several reservoirs to maximize public recreation benefits. Concern regarding potential impacts on shorebird populations led TVA to establish a five-year working group comprised of federal and state agencies, non-governmental organizations, and volunteers to learn more about shorebird resources in the Tennessee River Valley (TRV).

In 2009, an evaluation by the working group determined the project’s effectiveness and identified improvements for similar future initiatives. Project accomplishments include over 2,000 hours of shorebird monitoring (3,639 surveys at 127 sites), resulting in the largest shorebird monitoring effort ever undertaken in the TRV. TVA leveraged $94,000 in associated cost sharing projects and $47,000 from in-kind and volunteer support.

Additionally, several associated research projects were completed. In an online questionnaire, all working group members indicated that they were satisfied with the results
of this initiative and all felt that the group should continue beyond its original five-year mission. Establishment of an interagency working group provided an example of how agencies can successfully collaborate to answer ecological questions for policy decisions and achieve collective goals, and how similar initiatives could strengthen interagency and public interaction.

**Developing and Implementing a Natural Resource Inventory Database for Wake County Parks, Recreation and Open Space**

The Wake County Parks, Recreation, and Open Space (WCPROS) system is comprised of seven park units and over 100 parcels of open space properties. Currently, WCPROS does not have a system to document the natural resources found on these properties. Due to staff turnover and lack of a workable data clearinghouse, valuable information about natural resources has not been collected, has been lost over the years, or is in a form that is not useful and is inaccessible to staff, park visitors, and other agencies. There is a strong need for a natural resource inventory database containing information about the plants, animals, and habitat types found within each park and open space property. This project brought attention to the inefficiencies and gaps in current natural resource information and practices of the WCPROS.

Several valuable and long-term outcomes are anticipated, a result from the implementation of the Natural Resource Inventory Database (NRID). First, there will be better management of existing resources because of developing written guidelines and management plans for all WCPROS properties. Second, the project will increase the effectiveness in planning for future parks while serving the needs of citizens to access species information, pictures, and fun facts. Park staff will be able to generate brochures and improve existing educational programs. These are a few of the projected long-term benefits of the Natural Resource Inventory Database. Currently, measurable progress includes educating fellow WCPROS staff and other stakeholders about the importance of the database.
Natural Resources and Environmental Leaders: A Profile

This section provides a comprehensive profile of the natural resources and environmental leaders who agreed to participate in this study. The first part identifies pertinent demographic data about the interviewees. The subsequent sections provide details about the background of the participants, including particular philosophies that guide their involvement in the natural resources and environmental profession. Each interview with the participants became a conversation of learning and reflection, helping the researcher to understand the views of the participants about particular topics, including the current state of natural resources and the environment.

A Demographic View

The four tables that follow provide a demographic view of the participants who contributed to the study. The demographic information helps explain the purposeful selection of each participant for this study. A pseudonym attributed to each participant protected their identities, as did the generic labeling of their respective organizational affiliations. Eleven individuals from the 1999-2008 Institute participated in the research, purposively selected based on explicit criteria that established their relevance for the research (Patton, 2002; Schwandt, 2001).

Of the 413 Fellows who have participated in the NRLI since 1995, more males (242) have participated in the institute than females (171). In the earlier years of the institute, there was a preponderance of male participants, which reflected the structure of the natural resources field at the time. Since 2001, the population of males and females enrolled in the institute is more evenly distributed and reflected in the current study as five females and six males volunteered to participate, ensuring a balance in gender representation. The age range of the youngest participant in the study was 30-39; the 60-69 age range represented the most senior participant; and 40-49 was the average age range of those interviewed. The range of ages typify the Baby Boomer Generation, 1946-1964, and Generation X, 1965-1981 (Lancaster, 2004). In terms of race, the participants selected were Caucasian, given the small percentage (4%) of racial diversity in the Institute. The lack of racial diversity is a known
limitation in the natural resource and environmental professions (Center for Diversity and the Environment, 2010; Enderle, 2007). This limitation affects not only recruitment in the Institute but the inability to build from a broad reach of cultural knowledge, expertise, and contribution (see Table 1).

Table 1

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kate</td>
<td>F</td>
<td>30-39</td>
</tr>
<tr>
<td>Sophia</td>
<td>F</td>
<td>40-49</td>
</tr>
<tr>
<td>James</td>
<td>M</td>
<td>40-49</td>
</tr>
<tr>
<td>Frank</td>
<td>M</td>
<td>40-49</td>
</tr>
<tr>
<td>Joan</td>
<td>F</td>
<td>40-49</td>
</tr>
<tr>
<td>Mark</td>
<td>M</td>
<td>40-49</td>
</tr>
<tr>
<td>Glenn</td>
<td>M</td>
<td>40-49</td>
</tr>
<tr>
<td>Luke</td>
<td>M</td>
<td>50-59</td>
</tr>
<tr>
<td>Ann</td>
<td>F</td>
<td>50-59</td>
</tr>
<tr>
<td>Melody</td>
<td>F</td>
<td>50-59</td>
</tr>
<tr>
<td>Randy</td>
<td>M</td>
<td>60-69</td>
</tr>
</tbody>
</table>

The formal educational profile of the participants is somewhat diverse. Several have degrees in the natural sciences (e.g., biology, ecology, entomology, and forestry), and the social sciences (e.g., anthropology, education, public administration, and conflict analysis). Others have educational backgrounds in the following disciplines: the physical sciences (e.g., geology, nuclear chemistry), the formal sciences (e.g., mathematics), the humanities (e.g., English), theoretical disciplines (e.g., human resources development) or in a professional
discipline (e.g., civil engineering). Joan, Mark, and Luke contribute biological perspectives to the profession; others, such as Kate, James, Ann, and Melody, contribute cross-disciplinary points of view to the profession; Frank and Glenn bring an engineering perspective to the profession, while Sophia and Randy offer perspectives from the social sciences. Sophia is unique, since her conflict resolution degree is not a traditional one that natural resources and environmental leaders earn (see Table 2).

Table 2
*Educational Profile of Participants*

<table>
<thead>
<tr>
<th>Name</th>
<th>Educational Disciplines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophia</td>
<td>Master in Conflict Resolution &amp; Analysis</td>
</tr>
<tr>
<td>Kate</td>
<td>BA Geology, BA Anthropology, &amp; BA Math</td>
</tr>
<tr>
<td>James</td>
<td>BA Mathematics &amp; Master English Literature</td>
</tr>
<tr>
<td>Frank</td>
<td>BS Civil Engineering</td>
</tr>
<tr>
<td>Joan</td>
<td>BS Biological Sciences, Fisheries Management Concentration</td>
</tr>
<tr>
<td>Mark</td>
<td>BS Forestry, Environmental Science Minor</td>
</tr>
<tr>
<td>Luke</td>
<td>BS Fisheries &amp; Wildlife, plus Graduate Course Work</td>
</tr>
<tr>
<td>Glenn</td>
<td>BS Civil Engineering &amp; Professional Engineer’s License</td>
</tr>
<tr>
<td>Ann</td>
<td>BS Biology &amp; Master Human Resources Development</td>
</tr>
<tr>
<td>Melody</td>
<td>BA Geology &amp; Master Natural Resource Ecology</td>
</tr>
<tr>
<td>Randy</td>
<td>BS in Social Science, Education Minor &amp; Master in Public Admin</td>
</tr>
</tbody>
</table>

Seven of the study participants interviewed supervise a program (a division, organization, or office) and manage direct reports, directing from two to 50 or more staff members. Of those seven participants, two did not have a supervisory role during their participation in the institute. The remaining four participants were project leaders, often specialists in a particular area of expertise, who worked with other organizations to
accomplish their activities. Sophia, a community leader, does not work for an organization from which she can draw internal resources to assist with external project management. Instead, she collaborates with mentors and members of her community in order to facilitate project management and implementation (see Table 3).

Table 3

*Profile of Leadership Roles of Participants*

<table>
<thead>
<tr>
<th>Name</th>
<th>Leadership Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophia</td>
<td>Project Leadership</td>
</tr>
<tr>
<td>Kate</td>
<td>Project Leadership</td>
</tr>
<tr>
<td>James</td>
<td>Organizational Leadership</td>
</tr>
<tr>
<td>Frank</td>
<td>Division Leadership</td>
</tr>
<tr>
<td>Joan</td>
<td>Project Leadership</td>
</tr>
<tr>
<td>Mark</td>
<td>Program Leadership</td>
</tr>
<tr>
<td>Luke</td>
<td>Program Leadership</td>
</tr>
<tr>
<td>Glenn</td>
<td>Division Leadership</td>
</tr>
<tr>
<td>Ann</td>
<td>Project Leadership</td>
</tr>
<tr>
<td>Melody</td>
<td>Program Leadership</td>
</tr>
<tr>
<td>Randy</td>
<td>Unit Leadership</td>
</tr>
</tbody>
</table>

The participants’ years of professional experience ranged from 5 years to 22. Although two participants were relatively new to the natural resources and environmental profession, the average level of experience among all of the participants was 15.7 years, and 14.2 years for the female participants and 17 years for the male participants, respectively.

A key programming element of the institute is to seek diverse affiliations in its applicants. This was also a criteria essential to the study; of the 31 participants who expressed interest in participating in the study, care was taken to ensure that major affiliations were represented from local, county, state, and federal government; non-profit
and environmental organizations; business and industry; educational and technical organizations; and community organizations and the self-employed. The participant pool did not include affiliations from consultants or parks and recreation. Since 1995, the Institute’s profile of affiliation has consisted of the following: local, county, state, and federal government (199); non-profit and environmental organizations (47); business and industry (58); educational and technical (73); and community organizations and self-employed (36) (see Table 4).

Table 4

Participants’ Professional Experience and Affiliation

<table>
<thead>
<tr>
<th>Name</th>
<th>Professional Experience</th>
<th>Professional Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kate</td>
<td>8 years</td>
<td>County &amp; Local Government</td>
</tr>
<tr>
<td>Sophia</td>
<td>5 years</td>
<td>Community &amp; Non-Profit</td>
</tr>
<tr>
<td>James</td>
<td>11 years</td>
<td>Conservation - Wildlife</td>
</tr>
<tr>
<td>Frank</td>
<td>14 years</td>
<td>Local Government</td>
</tr>
<tr>
<td>Joan</td>
<td>16 years</td>
<td>Educational Institution</td>
</tr>
<tr>
<td>Mark</td>
<td>17 years</td>
<td>Industry - Forest Products</td>
</tr>
<tr>
<td>Glenn</td>
<td>20 years</td>
<td>Public Utility</td>
</tr>
<tr>
<td>Luke</td>
<td>18 years</td>
<td>Federal Agency - Wildlife</td>
</tr>
<tr>
<td>Ann</td>
<td>21 years</td>
<td>Federal Agency - Public Lands</td>
</tr>
<tr>
<td>Melody</td>
<td>21 years</td>
<td>Conservation &amp; Preservation</td>
</tr>
<tr>
<td>Randy</td>
<td>22 years</td>
<td>State Agency - Regulatory</td>
</tr>
</tbody>
</table>

Geographically, most of the participants were from the Piedmont area of North Carolina, including its central, northern, southern, and western reaches. Two of the participants were located in the mountains or western area of the state, and two participants were from the eastern part of the state. Historically, since 1995, the largest geographic representation in the NRLI is from the Piedmont area of North Carolina, with at least one
person from the Coastal and Mountain areas of North Carolina. In order to maintain anonymity, the geographic representation of each participant was not indicated in the table.

**Natural Resources and Environmental Leaders: A Scenic View**

The value of researching the lived experiences and perceptions of a group of individuals who share a similar learning phenomenon is to learn more deeply from each participant what it is like to have that particular experience. One method that can be used to enrich understanding is to create space in the interview for introspection, self-examination, and contemplation, specifically about the participant’s past and how that past may have helped shaped and influenced their future.

The human experience is dynamic, multi-dimensional, and set within a context. Learning more about each participant added relevance and distinction to their individual stories. Listening to the individual’s perceptions about events and the meaning they ascribed to an event conveyed a sense of how unique or common an event or idea was in comparison to other stories. Furthermore, listening across the stories allowed the researcher to capture the shared experiences developed from among the participants of this study.

The next sections explore what influences a career in natural resources and the environment; words that characterize and distinguish natural resources and environmental leaders; characteristics of natural resources and environmental issues; descriptions of major natural resource and environmental concerns and the overarching concern; and anticipated natural resource and environmental issues for the 21st century.

**What Influences a Career in Natural Resources and the Environment?**

Given the complexity and long-term nature of natural resources and environmental issues, it may be difficult to understand why anyone would select this particular profession. What were national environmental problems in the 1980s have become global issues. This trend underscores the role of production and consumption in population increases and in natural resources depletions (e.g., fisheries, forests, soil erosion) and the urgent need for resource management and pollution controls (Finger & Verlaan, 1995). Many public agencies such as the Environmental Protection Agency and state Departments of Natural
Resources and the Environment are under immense pressures to ensure resources are managed and permitted appropriately, and that the public has access to clean water and air. Struggles to obtain and maintain control of natural resources are escalating worldwide (Clover, 2003).

Yet, natural resources and environmental leaders continue to enjoy their profession and remain committed to it. For most, it is their vocation, something to which they are drawn and for which they are suited, and a profession with which they strongly identify, characteristically with integrity, stamina, and passion. This was illustrated during the beginning of the interview process, as each participant shared their story about their connection to the natural resources and environmental profession. Their brief but pointed stories connected at Making a Difference, Enjoying What You Do, but they arrived at this connection in three separate ways to explain their relationship to the natural resources and environmental profession. The three sub-themes are:

- Contributing to a Higher Purpose
- Early Influences: Self-Learning, Connecting with Others, and the Outdoors
- Using the Innovative World of Nature and Patterns to Teach, Guide, and Develop Creative Solutions

**Contributing to a higher purpose.** Several participants, such as Randy and Sophia, described their connection to the natural resources and environmental profession as a response to fulfill a need or contribute to a larger purpose. Randy shared that his connection to the natural resources and environmental field occurred earlier in his career:

> It is my mission; it is what I am supposed to do. I was called almost in a Biblical, a religious sense to the profession, to environmental protection, and I feel very passionate about it.

Although Sophia does not have a formal education in the environmental field, she creates her connection by describing what she brings to the profession:

> There is a great need and it just speaks to my heart so it was an easy path for me. Even though I do not have formal education in the environmental field, I contribute my background in collaborative decision-making and my ability to apply it to
environmental issues. I think it helps me to look at things more broadly and look at how to form partnerships so that things can get done.

James and Glenn described their connection as a journey over time. James rediscovered nature through his connection with a sense of place; Glenn’s desire to contribute to his former community connected him to the natural resources and environmental profession. One man made his association through the conservation and protection of wildlife, and the other made his association through the conservation and engineering of a resource to benefit the public. For both men, contributing to a larger purpose is important, particularly in how decisions are made and how individuals interact with one another in making those decisions.

James describes his reconnection to the environment through his discovery of a sense of place and rediscovering his Eagle Scout roots:

My wife and I moved to North Carolina, and we rediscovered nature. We both had grown up in the south where I’d been an Eagle Scout. All of that was by the wayside as I pursued other ambitions but it was always a seed waiting for its time. North Carolina’s beauty and its diversity awakened that seed and it started growing . . . Over time, I realized that this was what I wanted to do for my work. It wasn’t enough to enjoy nature, there needed to be an effort to conserve it.

Glenn shared how he had returned to the Carolinas to do something different to influence his community.

I knew I wanted to move back to the area where I was from, and with the background I had, companies involved in engineering were the work places I considered . . . however, I didn’t want to just do engineering work the rest of my career rather I wanted to impact community . . . One of my initial tasks was to help guide the way the shoreline inside a reservoir is developed over time . . . And shoreline management plans absolutely do shape the way that the lakes are used by the adjoining property owners and by the public.

**Early influences: self-learning, connecting with others and the outdoors.** For others, the influence was inseparable from their love of the outdoors, including the need to be outside and to learn from others. For Joan, Mark, Luke, and Ann, early influences created sustained connections with the outdoors. Often generated from the freedom to wander, roam,
and explore vast natural areas, these early connections were coupled with lessons of discovery and understanding of natural processes. Early influences were family members, mentors, teachers, or organizations such as *National Geographic* and for some, an internal connection to the outdoors.

Joan described the role of her parents and her rural upbringing as an early influence in her career direction:

> I just learned to love nature. For much of my youth, I lived out in the country. We didn’t have close neighbors and I spent a lot of my time outside roaming by myself, in nearby woods or fields. My father was an out of doors person, a hunter, and an fisherman, so our vacations were usually fishing trips. My mother instilled her great appreciation for birds and animals. She would point things out to me, expressing how beautiful they were. She liked to learn about wildlife, and loved the sights and the sounds, the sensory gifts that nature gives you.

Joan also shared the story of Miss Little and her role in inspiring a fifth grader to enter the world of science.

> I also had great science teachers. Thinking back over my early education, science teachers were the people that inspired me the most. They were the most exciting and interesting. I remember in the fifth grade, we were doing a little science experiment about photosynthesis and chlorophyll and the teacher, Miss Little, said “who wants to go outside and collect leaves?” I was like oh, please let me do it. So I was able to go outside and collect leaves, and bring them back into school to lead a little experiment. That was exciting to me, it was fun, and it made sense.

Mark, influenced by his father, found his passion and career by returning to college and working outdoors.

> Unsure at first, my father suggested an outdoor field and so I returned to college. I found a love for working outdoors with trees, I loved getting up and going to work every day, and the few that can say it, are fortunate. I happen to be one of them. I get to see the impacts, to plan, and see the results of my efforts.

Luke’s interests in the biological aspects of the natural resource field bloomed as a senior in high school, influenced by science teacher and his love of the outdoors.

> This high school teacher created a positive environment and provided opportunities to learn about ecology, which was kind of new back in my day. He provided a greater exposure to a different aspect of biology . . . Although I was raised in suburbia, we
moved to the country when I was in seventh grade. Exposure to a rural environment allowed me to be out in the woods and develop recreational hobbies connected to the outdoors. So it was my environment and the influence of my science teacher that got me going in that direction.

Ann described her passion for trees as a young child, the role of her grandfather and National Geographic in influencing her to work outdoors.

I have always liked trees. In fact, I still feel the need to be outside in the woods all the time. So it was internal, I was born that way. My grandfather and the nature walks we took enhanced my earlier experiences. In addition, there was the influence of National Geographic, a magazine that encouraged my initial thought to work with parks before deciding to work with forests. I was also very interested in conservation education, in trying to teach people about nature and the role of nature in what we use every day.

**Using the innovative world of nature and patterns to teach, guide, and develop creative solutions.** For Kate, Melody, and Frank, passion for innovative natural processes and discovery and doing what they could to improve the world through research, technical understanding, and education steered them to the natural resource and environmental profession.

Kate’s passion for cyclic patterns in natural processes, how the earth moves and changes, brought her to the natural resource and environmental profession.

I’ve always liked working with and looking for cyclical patterns, and nature has a lot of that in it. I wasn’t interested in the biological aspects of the [profession] so I ended up with a background in geology. This gave me a bit of understanding for the private sector, and allowed me to help them understand and reframe questions of science in order for it to make sense to them and develop solutions. I am the one helping them to understand the information that’s on the table and weighing out what’s important and what’s not important. It’s like a little pyramid of knowledge.

Melody responded how her love for nature and interaction with the outdoors through physical activities inspired and challenged her. Envisioning a life of inquiry and discovery through scientific research, she has come see many influences on the natural landscape.

Going back to my early days in high school, I was quite good in biology, sports, philosophy, and religion. I got interested in the research aspects, with the questions, the discovery, and the projects. So I got into environmental consulting and outdoor
work, and realized that I loved it. Initially, I thought I was would focus more on the natural environment and ecological processes. However, I’ve come full circle to realize I’m dealing more with human behavior that shapes the environment. I realized the natural environment has been influenced by human practices for a lot longer than I had originally anticipated.

Frank began his career in consulting in engineering, never predicting a career in natural resources. His mother encouraged him to apply for a position in the natural resource profession, knowing about his love and keen interest in discovery and using innovative tools to solve problems.

Natural resource and environmental issues had interested me when I began working in the consulting industry. It piqued my interests seeing the different skills and technical things a firm could do to evaluate whether or not something should be sited in a particular environment or how much damage or contamination an underground storage tank might leak. My mom encouraged me to apply for the position I have now. I believe largely I was in the right place at the right time, and the right person based on what the situation was. In some ways, I don’t think I selected [this profession], it selected me. I feel very fortunate to be where I am . . . absolutely love what I do.

The participants’ stories captured a prism of influences and passions, including the desire to make a difference in their communities, their organizations, and the environment. Despite the complexities and the difficulties they face in resolving environmental conflicts, the participants shared the thread of making a difference and enjoying what you do. For most of the leaders interviewed, making a difference within their organization and within their communities was important to them. One leader focused not so much on the community aspect but on ensuring his company was making a difference. Several study participants were very explicit in their expression of enjoying what they do for a career, illustrating passion, and drive, in spite of the conflicts and complexities that surround their profession.

**Participants’ Reflections on Natural Resources and Environmental Leaders**

The words *natural resources leadership* and *environmental leadership* often are used interchangeably and at other times are distinguished from one another. While the literature abounds with numerous definitions of leadership (Bass 1990a; Burns, 1978, 2003; Chrislip &
definitions for environmental leadership, and specifically, natural resources leadership, are inadequate. Unfortunately, leadership studies are biased heavily towards business, industry, and the military, with limited studies on leadership in natural resources and environmental leadership (Egri & Herman, 2000; Gordon & Berry, 1993, 2006; Manolis et al., 2008; Newman et al., 2007; Rost, 1993a). The following terms, though similar, are often used to describe environmental leadership and natural resource leadership: natural resource managers and natural resource management, resource managers and resource management, and ecosystem managers and ecosystem management.

A limited vocabulary that defines natural resources leadership and environmental leadership. This is in part because the concept of leadership, in contrast to the concept of management, is an overlooked tool for achieving an ecosystem approach to natural resource management (Danter et al., 2000). The importance of leadership is accentuated in other professions and studies, including the distinctions between management and leadership, though it is not evident in the natural resources, conservation, and environmental sciences. Yet leadership is essential for responding to the complexities and challenges found in environmental issues, in particular those issues infused with social and economic dimensions (Gordon & Berry, 1993, 2006; Olsson et al., 2006; Portugal & Yukl, 1994). Leadership is a critical element in influencing change within individuals, groups, and organizations (Bass, 1990a; Burns, 2003; Kotter, 1995). More importantly, leadership is a critical element in preparing for and implementing change (Addor et al., 2005; Danter et al., 2000; Newman et al., 2007).

Managing America’s natural resources calls for a more sophisticated form of leadership, one that has yet to be defined and embraced (Sirmon, 1993). Foster (1993) reasons that environmental leadership is a distinct category of leadership and describes the term as encompassing “any activity involving the management, use, or protection of natural resources” (p. 21). Predominantly linked with activism and advocacy, environmental leadership, contends Foster (1993), occurs in a wide variety of contexts, from national
resource agencies to informal organizations. Gordon and Berry (1993) further define environmental leadership as “the ability of an individual or group to guide positive change toward a vision of an environmentally better future” (p. 3). Refining this distinction, Egri and Herman (2000) posit that environmental leadership is “the ability to influence individuals and mobilize organizations to realize a vision of long term ecological sustainability” (p. 572).

Natural resource leadership may be defined by what makes it effective as opposed to what it is. For example, Cornett and Thomas (1995) suggest most effective natural resources professionals have a vocation and influence beyond their immediate positions, and their effectiveness comes from ongoing learning, being open to and seizing opportunities, and pursuing a vision. Newman et al. (2007) identified characteristics of effective leadership in natural resources management, specifically how service learning can prepare future natural resources leaders. The challenge is not only to identify a common typology of a leader, but also to develop an approach that can effectively nurture qualities within students (Newman et al., 2007) as well as professionals (Addor et al., 2005).

To gain a broader understanding about environmental leadership and natural resources leadership, the subject was investigated with the study participants. How would they describe an environmental leader and a natural resources leader? The purpose was to describe what the two words meant to them as professionals involved in natural resources and environmental issues.

At first glance, the responses from the participants appeared to exemplify a lack of agreement about the characteristics of the two words. An additional review began to identify broader characteristics shared by the study participants. For instance, about half of the participants thought it was difficult to distinguish the two definitions, in part because “natural resources are the environment . . . they are not different.”

Joan and Randy agreed that there was not much difference between a natural resource leader and an environmental leader. Both Joan and Randy were quick to recognize that even though others may describe differences, for them a professional could be both a natural resources leader and an environmental leader. As a matter of principle, Randy prefers to stay
away from the term “environmental leader.” Due to prejudices and stigma associated with the word, it can generate negative connotations and images like “crazy-ass granolas.”

Sophia and Melody were quick to point out the interdependence between the two phrases. Melody explained, “In general, it is not that simple to distinguish between natural resources and environmental leaders; there is an interconnection between them.”

Mark amplified Melody’s response. “The words are interchangeable. I think it is naïve to assume that in managing the natural resource you are not considering the environment. They are just so intertwined. There’s so much technical knowledge in a wide array of people, both in natural resources and environmental professionals.”

Kate aptly created a connection between the two terms, as she identified an activity (something the natural resources leader does) within a larger process (the environment) “It is hard to think of natural resources and environmental leaders as two separate things. When I see the word natural resources, I think of management. When I see the word environmental, I think of systems or processes.”

Luke, Ann, Glenn, and Frank preferred to differentiate between the two terms. As an example: Luke distinguished an environmental leader as somebody who cares about a particular issue such as elimination of toxic waste dumping and advocates for that. He clarifies that they may not have professional experience in the field and could be a layperson. Luke says, “When I think of environmental leader I think of somebody like Ralph Nader, who is a champion for consumer protection, clean air, and energy conservation.”

Luke went on to describe the characteristics of a natural resources leader as someone with a bit more training in the field of natural resources (land, water, and critters). According to Luke they will also be visionary, and anticipate how to offset future conflicts about natural resource utilization and conservation. According to Luke, natural resources leaders are more focused on the basic components of landscape and everything it contains, both human and otherwise.

It became clear that some of the study participants believed it was particularly difficult to describe the two terms, preferring instead to describe connections between the
two words. Other study participants thought that it was important to describe the two words with some measure of detail. What was significant was the range of characteristics used to describe an environmental leader and a natural resources leader, respectively. Some characteristics were introduced more than once; other characteristics were incongruent with one another.

In the following segments, the responses of each participant were listed without attribution, comprising the range of characteristics. The first section identifies the range of characteristics associated with a natural resources leader, including characteristics that were identified more than once and contradictions between some of the characterizations. The next section introduces the range of characteristics associated with an environmental leader, including characteristics that were identified more than once and contradictions between some of the characterizations. The last section introduces characteristics of a leader for the 21st century involved in working with natural resources and the environment.

Table 5 introduces the range of responses of the study participants to the question: What is a natural resources leader?

Table 6 introduces the responses of the study participants similar to one another when replying to the question: What is a natural resource leader?

Table 7 describes responses of the study participants that captured contradictions in the characteristics used to answer the question: What is a natural resource leader?

Table 8 introduces the range of responses of the study participants to the question: What is an environmental leader?

Table 9 introduces the responses of the study participants similar to one another when responding to the question: What is an environmental leader?

Table 10 describes responses of the study participants that captured contradictions in the characteristics used to describe: What is an environmental leader?

Table 11 distinguishes natural resource leaders from environmental leaders based on the responses from the study participants.
Table 5

*What is a Natural Resources Leader?*

A Natural Resources Leader is one who…

Has a vision to proactively offset future and potential conflicts associated with natural resource utilization and conservation.

Understands natural resources to make good management decisions at a sustainable level. Uses public input, other experts to help articulate what is a sustainable level.

- Recognizes the need for food, clothing, fiber but also that resources are limited, and production will impact the environment. A natural resource leader is looking at the situation from “okay you tell me how much low flow you need in the water and then I’m gonna figure out a way to use the rest of the water to grow this crop.”

Looks at the situation from a management perspective, while incorporating a number of environmental issues. The natural resources leaders tend to have a broader focus on resources like water quality or forestry.

- Frames the issues and questions around natural resource protection and management.
- Can talk about the natural resources, the biological side of things, to people in a way that gets them to listen and take action.

May also be an environmental leader but there is the perception that the natural resources person is probably somebody you can deal with. You do not hear, those “crazy-ass natural resources.”

- Is more of a conservationist than a preservationist, and thus might find it harder to think of themselves as an environmental leader.
- Is more likely to consider other natural resource leaders or environmental leaders within business and industry.

Is focused on the basic components of the landscape, the land, the water, the critters, and everything it contains both human and otherwise.

- Works with natural resources like water, air, sun, wind, geothermal, minerals
- Manages a natural resource like a forest

Has a bit more training in the field of natural resources; that is, land, water, and critters and tries to proactively offset future conflicts

- Has experience in the professional foundations, including the policy aspect.
Table 5 Continued

Might supervise a division or work within a division like Soil and Water Conservation, Forest Resources, Marine Fisheries, Parks and Recreation, and Conservation and Community.

- Would also find these leaders working in non-profits, local governments, business, and industry.
- Is someone like a park ranger, with a fixed piece of ground, and his job is to manage the natural resources of that ground, whether it be the wildlife, the natural environment, or the water features on that property.

Lives in a limited box of managing a system that defines the variables and maximizes whatever output he or she is trying to get from it. Even if it’s clean water, clean air, there is the tendency to look at it for the one resource rather than a system of elements including the human element.

- Example: some people see bird work as just managing the birds, almost in isolation or relative isolation. They will focus on five species and if those species are producing, then everything is okay in the system. Is this a good indicator?
- Looking at how he or she is defining the environment. Some people may think of ecosystems as the plants and animals and the communities on which they rely. Others may think of an ecosystem as the natural environment and the human environment together. People are part of the equation, and more and more we having to move towards that viewpoint.

Table 6

*Similar Characteristics to Describe Natural Resources Leaders*

Has professional experience and training

Looks at the situation from a management perspective, while incorporating a number of environmental issues. The natural resources leaders tend to have a broader focus on resources like water quality or forestry.

- Frames the issues and questions around natural resource protection and management.
- Focused on the basic components of the landscape and everything it contains both human and otherwise.
Table 7

*Table 7: Dissimilar Characteristics to Describe Natural Resources Leaders*

<table>
<thead>
<tr>
<th>Dissimilar Characteristics</th>
<th>Natural Resources Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is someone like a park ranger, with a fixed piece of ground, and his job is to manage the natural resources of that ground, whether it be the wildlife, the natural environment, or the water features on that property.</td>
<td>Lives in a limited box of managing a system that defines the variables and maximizes whatever output he or she is trying to get from it. Even if it’s clean water, clean air, there is the tendency to look at it for the one resource rather than a system of elements including the human element.</td>
</tr>
</tbody>
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Table 8

*Table 8: What Is an Environmental Leader?*

*An Environmental Leader is one who...*

- Is visionary, can serve as a guide for natural resource leaders.
- Is a pioneer in educating, discovering, and challenging people to think outside of the box and in new ways about how to work with the environment and our relationship with it.
  - Is balanced in terms of the environment, knowing resources are needed to live while advocating protection of the environment.
  - Understands the complex processes and systems that are going on including the cause and effect.
  - Knows and communicates to everyone in a way that affects change, based on knowledge about the built environment (buildings and infrastructure) as well as the natural environment (air and physical kinds of things).
- Is concerned about the future of the environment and recognizes the impacts that result from production and development, including the limitation of resources.
- Has a broad exploratory scope to deal with the issues such as decision and policy-making or a policy-setting kind of role.
Example: may influence change necessary to reduce energy demands in households across the country (focus on change in broader terms).

Ralph Nader is an example of one who champions for consumer protection, clean air, and energy conservation.

Might lead or be part of the development and implementation of major policy initiatives like permitting of discharges to surface waters; issuance of air emissions permits; implementation of major grant programs for drinking water; or remediation of contaminated soil and groundwater. These leaders also work in non-profits, local governments, business, industry, and educational or university settings.

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Table 9

*Similar Characteristics to Describe Environmental Leaders*

<table>
<thead>
<tr>
<th>Tends to work specifically on environmental issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigma is associated with the word environmental and environmentalist.</td>
</tr>
<tr>
<td>Has a broad exploratory scope to deal with the issues such as decision and policy-making or a policy setting kind of role.</td>
</tr>
</tbody>
</table>

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Table 10

*Dissimilar Characteristics to Describe Environmental Leaders*

<table>
<thead>
<tr>
<th>“One issue right now” kind of person (tends to focus on a single issue or very few issues that impact the natural environment.)</th>
<th>Is balanced in terms of the environment, knowing resources are needed to live while advocating protection of the environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintains the existing natural environments rather than working with the natural resources for production purposes.</td>
<td>Is a pioneer in educating, discovering, and challenging people to think outside of the box and in new ways about how to work with the environment and our relationship with it.</td>
</tr>
</tbody>
</table>
During this study, the participants broaden the reader’s understanding about the definitions of an environmental leader and a natural resource leader from their perspectives and experiences. What first appeared to be a wide range of perspectives actually resulted in creating a foundation of understanding from the perspectives of public, private, and non-profit leaders who are integrally involved in natural resource management and environmental issues. About half of the participants thought it was difficult to distinguish between the two terms; the other half preferred to differentiate between them. Several of the participants focused their efforts on attempting to define the 21st century leader.

Were any common characteristics used to describe natural resources and environmental leaders? There was one common characteristic: “having a vision” or being “visionary.” This is not surprising since the most successful transformations are led by people who will ensure there is a vision (Kotter, 1995). The literature points to the importance of having a compelling vision and being able to communicate one’s vision (Bass, 1990b; Bennis, 1990; Burns, 1978, 2003; Kotter, 1995).

Though “vision” was a characteristic used to describe either a natural resource or environmental leader, the purpose appeared to be different in each example. In the instance of the natural resource leader, vision was a means to be proactive in dealing with potential and future conflicts about resource use. In the second case, the environmental leader was considered visionary, one who served as a guide for natural resource leaders. Although the purpose for vision may be different, being visionary, having a vision, and being able to communicate that vision is an essential characteristic of leadership in many disciplines (Bass, 1990a; Bennis, 1990; Burns, 1978, 2003; Kotter, 1995; Manasse, 1985; Westley & Mintzberg, 1989).

Although some of the study participants thought it was difficult to distinguish between natural resources and environmental leaders, characteristics emerged to set them apart based on the study participants’ responses. For example, a natural resources leader may lead based on the resource; the environmental leader may lead based on the issue. There tend to be fewer stigmas labeling oneself a natural resources leader than an environmental leader.
Another characteristic is the perception that natural resources leaders receive more professional training both in experience and in education, than an environmental leader, who may be a layperson. The natural resource leader, according to these characteristics, is an individual who focuses their attention on the basic components of the landscape and everything it contains, both human and otherwise. It was not clear how coastal and marine resources fit into this characterization. (See Table 11).

Table 11
*Comparison of Characteristics of Natural Resources and Environmental Leaders*

<table>
<thead>
<tr>
<th>Natural Resource Leader</th>
<th>Environmental Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leads based on the resource</td>
<td>Leads based on the issue</td>
</tr>
<tr>
<td>Is balanced in terms of the natural resources, knowing what resources are needed to live while advocating protection of the environment.</td>
<td>Is balanced in terms of the environment, knowing resources are needed to live while advocating protection of the environment.</td>
</tr>
<tr>
<td>Tends to work from a management perspective (how to manage a particular resource or resources together), while incorporating a number of environmental issues.</td>
<td>Tends to work specifically on environmental issues</td>
</tr>
<tr>
<td>Does not appear to be stigma associated with the word natural resources manager or leader (although one participant preferred to be recognized as a conservation leader than a natural resource leader).</td>
<td>Stigma is associated with the word environmental and environmentalist.</td>
</tr>
<tr>
<td>Criticized for working within the box, staying inside the textbook.</td>
<td>Credited with working outside the box, in thinking about and challenging new ways to work with the environment, how humans interact with it.</td>
</tr>
</tbody>
</table>
Table 11 Continued

<table>
<thead>
<tr>
<th>Has formal experience and training in the profession and area of expertise.</th>
<th>Not particularly identified with experience and training although one participant stated environmental leaders are very intelligent and passionate about what they do.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision-making and policy-making roles were not attributed to the natural resource leader.</td>
<td>Has a broad exploratory scope to deal with the issues such as decision and policy-making or a policy setting kind of role.</td>
</tr>
<tr>
<td>Someone focused on a fixed piece of ground, and his job is to manage the natural resources of that ground, whether it be the wildlife, the natural environment, or the water features on that property.</td>
<td>One issue right now” kind of person (tends to focus on a single issue or very few issues that impact the natural environment) (is not balanced in seeing other perspectives).</td>
</tr>
</tbody>
</table>

Natural resources are, in part, the raw materials of the environment that enhance and sustain life. Sirmon (1993) said that managing America’s natural resources calls for a more sophisticated form of leadership, one that has yet to be defined and embraced. Several of the participants offered their individual perspectives, which are combined here, as a means to express their ideas about the future form of leadership:

They will lead, not from a management perspective but rather will coordinate by having an understanding of the relationships, knowing when to use one type of resource versus another, how much is necessary, and then beyond that, being open to new resources.

They will recognize within the sphere of ecology, there is a realm called human ecology. It is a “specialty” that deals with the fact you can’t separate out the trees, the plants, the air from the humans that are also a species living within those systems. Therefore, human ecology is as important as flora and fauna ecology.
The idea of a natural resource leader will become dated. Moreover, the word environmental leader carries too much baggage. Maybe for the future we somehow capture the idea that it’s not “I’m a wildlife guy” or “I’m a forest guy,” and not “I’m for saving the planet from pollution guy.” Rather I am someone who deals with interactive systems that are both natural and human. That is the leader of the future.

**Characterization of Natural Resources and Environmental Issues**

In this section, the scientists, researchers, the regulators, the community leaders, the educators, and resource managers characterize the natural resources and environmental issues they interact with daily.

Mark described how natural resources and environmental issues are issues in which perception becomes reality.

Natural resources and environmental issues are a passionate subject. Sometimes emotions take precedence over science; sometimes these issues are a mix of science and emotion.

Joan raised a perspective about the value of resources, how that has different meaning to different people, that often how we value the resource is how we will use the resource.

We need to recognize the importance of understanding that resources have different values to people, especially when there is conflict over how to use them. Often, how we value the resource determines how we will use the resource. For some that might be an economic value, for others that might be something else. For example, how do you value a gallon of water in a stream versus a gallon of water in a plastic container? Who gets to decide that value? Does one value trump the other? If so, who gets to decide? Understanding value is important in working with conflicts.

On a second point, it frustrates me when you have to make an economic argument to show resources have value. I cannot always make the economic argument because I do not have the information or the data to support what I value. It’s frustrating that our research and ability to define things often prevents us from being able to make or present information that would be useful in making a decision about the resources. Yet I do place a value on them, I chose my profession because of the role I might have in protecting and conserving the value of resources.

As identified earlier in Chapter 1, environmental challenges by their very nature are characterized as “wicked” problems (Allen & Gould, 1986; Gordon & Berry, 2006). Complex, multifaceted, and transsocietal, permeating geographic, jurisdictional, institutional,
and political boundaries, and environmental problems of this nature are difficult to manage (Foster, 1993; Gordon & Berry, 1993; Gray, 1989; Sirmon, 1993). During the interviews, Randy stated his perspective on the nature of environmental and natural resources issues: underappreciated, under-recognized, and undervalued.

People do not know the issues. It’s like the [resource professional] knows a secret that others are not aware of, a secret that requires action. But people are not acting. We cannot get their attention. It may take a series of Katrina-like calamities before there is recognition of the issues we face.

Frank supported Randy’s contention that natural resources and environmental issues are often third and fourth row issues.

These issues are paramount in terms of how they should be viewed, but oftentimes they are not front row issues. They’re second, third, or fourth row issues. And that’s the struggle. When you’re dealing with one of these more complicated issues, a fair percentage of people will ask, “Well, how is it going to affect me personally, my wallet or my property? I’m not concerned about that creek behind my house, but I want my yard to look this way.” Whether right or wrong for the environment, these issues often are overlooked because they are not deemed important. More than that, they are considered “somebody else’s responsibility.”

Melody, as a researcher, elucidates about the complexities of ecosystems due to numerous interconnections and links. In addition, she pointed out how even subtle changes can signify larger changes to come.

Interlinked, complex, and changing. People’s perspective about the “environment” depends on their background and values. It certainly depends on whether you look at the environment as strictly providing benefits to you or you believe you have a greater responsibility to do no harm. Some changes, like the reduction or extinction in a characteristic mammal like the polar bear, may not directly impact non-Inuit populations. However, climate changes in the Arctic can impact the permafrost layers and directly affect pipeline projects. Over time, these subtle changes can signify larger changes.

It’s not just the bear. The bear is one symptom and you may not care about the bear. But is it about the change and the ripple effects. It’s about water shortages. It’s about unpredictable markets in agriculture and investments, things that will change the way we’re used to doing business. It’s about the ripple effects that slowly occur over time.
Finger and Verlaan (1995) posit that ecological degradation, combined with social, economic, and cultural pressures, lessens a society’s options to deal effectively with these situations and the unintended consequences. From a global perspective, they have identified four situations that ecological degradation could accelerate:

- Additional stress to communities, including social unrest and political instability,
- Exacerbate hunger and poverty, already aggravated by population growth, including migration to urban centers from less developed areas,
- Contribute to depletion of finite worldwide resource base, increasing conflicts over resources (like water and food), and
- Negative effects on psyche and culture, including insecurity and anxiety due to rapid changes in physical and social environments. (p. 504)

James believes we have limited understanding of the complete ecological picture. As a result, he believes there is a tendency to miss the intricacies of the connections that could transform our future because thinking about the ecological picture is often done in pieces and taught in sections, depending on whether your goal is to maximize production or optimize variables.

There is an intricacy of interplays between a soil-based microorganism and the tree, a bird that is nesting in the tree, and the moisture that is part of the system. For now, we cannot pull it all together and say what’s gonna happen in the system. Though we don’t have the technology, each part of the system is important. Therefore, we’re gonna have to leap into the unknown, into an uncertain world and learn as much as we can, and with humility to say there’s a huge amount we don’t know. This is a more complex system than we have the audacity to say we understand and can manage.

I believe climate change is bringing all that to bear. It’s kind of saying, “Here’s the net result in one sense of the accumulated actions that you weren’t accounting for.” Who thought carbon outputs were going to be that important? It sure seemed benign but the unintended adds up. So I think it is important for extractive industry management and resource management to realize the complexity of the systems we are connected to as they are not separable. The good news is that natural resource and environmental issues could be part of the path to transforming our culture.
The global crisis is the ultimate challenge to society’s ability to learn (Finger & Verlaan, 1995). Holling anticipates that “ecological surprises are more likely to occur as systems interconnect over larger spatial scales” (as cited in Scheffer et al., 2002, p. 226), and that these surprises or levels of uncertainty will only increase as the ecological, economic, evolutionary, and social systems interconnect. Hence, there is the need to understand the linkages between the natural and human systems and the means to enhance resilience through adaptive change and learning. “Learning, especially adult learning,” in the words of Robert Blakely (1965), “is fundamental to the solution of all social problems” (p. 54).

Glenn extends Blakely’s statement about the value of learning, ensuring that it is a mix of scientific as well as local perspectives.

Natural resources are largely physical resources (the water, the trees, the land, the minerals, the fuels). When you say environmental, that brings to mind a bigger picture. Maybe it includes those physical resources, but it also includes perceptions and emotions about how those natural resources will be used. Some people will understand that humans need to use those resources, and will figure out how to use them wisely with a long-term focus in their decision-making. Others may be more short-term in their thinking, and may make decisions around the emotional side of the issues, based on what it feels like than what the science says to do about it. Getting people to agree around the use of the resources is a very difficult thing. Having a mix of conservationists and environmentalists is a healthy thing; having a mix of science and emotion is healthy, there needs to be a blend of the two.

Traditional problem-solving approaches, according to Finger and Verlaan (1995), are “bound to fail if these approaches are pursued unilaterally and if problems themselves are treated as discrete, separable units, approached only by specialists and experts” (p. 503).

Joan characterizes environmental issues as very complex because environmental processes are not always easy to understand or predict. She believes there is a need to lasso words for meaning, to stop and deliberate about the meaning of words, before trying to solve the issues.

I believe the conflicts surrounding these issues stem from not having a common understanding of what the issues really are. So we need to understand what we mean by environmental issues or natural resources issues – are these global issues? Local issues? Would these be characterized differently as a result?
Luke’s perspective coincides with Joan’s as he points out the need to recognize what kind of natural resources and environmental issues there are before trying to solve them.

Issues can be reactive or proactive. For instance, some issues are reactive to regulatory processes where, by law, an organization goes through a series of steps. For example, when reviewing a development project, our agency evaluates what the environmental impacts might be to the environment or to a particular animal or a natural community type. On the proactive side of it, you can reduce the reactive workload by working with a variety of stakeholders to project what issues may be coming in the future and try to develop some balanced plans to address those.

Frank adds that environmental issues can be extremely broad in scope, very far-reaching, and heated, but these issues can take a front row seat when the heat is taken out of the moment.

Just when you think you have dealt with all the stakeholders or you have identified all the stakeholders, you should always question that and make sure that you have, especially when you are dealing with issues that affect people’s livelihood. When environmental issues become front row issues, progress can be made when you can take the heat out of the moment, and bring people back down to earth and let them – let the sides really talk about what is important to them. Although these issues can be polarizing, they can be gratifying as well when things get worked out.

Holling et al. (2002) recognize that nature, like human nature, is evolving, that “natural ecological systems have the resilience to experience wide change and still maintain the integrity of their functions”; and that “people’s adaptive capabilities have made it possible not only to persist passively, but also to create and innovate when limits are reached” (p. 18). Recognition of evolutionary principles, of theories of change, opens the door for competing scientific perspectives to distinguish where different types of stability loss occur in human and natural systems, and where there is reversibility and irreversibility. This includes identifying where cross-scale interactions occur, and where adaptive change and learning can integrate across disciplines so that ecological, economic, evolutionary, and social linkages between those systems can be better understood (Holling, Gunderson, & Ludwig, 2002).
Sophia believes there are connections being missed that could help clarify and improve our relationship with the environment.

We need a better grasp on the effects of our behavior upon the environment and the resistance from the environment we see but ignore. We need to understand and evaluate the messages in order to do things differently . . . to tap into our own perceptions and a greater understanding of the changes and fluctuations in the environment.

Kate brings up the discussion about the cyclical patterns of nature that are part of our very complex natural processes.

Talk to the elders and you will hear the stories of similar situations that have happened in the past. For instance, the stories about the section of Interstate 40 that continues to receive landslides was known back then, how it was built, and that it would continue to suffer landslides because of poor engineering. We have had landslides, we’re gonna have them. It is a matter of how you manage them. Many natural resource and environmental issues will continue to come back, like earthquakes. Therefore, one builds structures that can mitigate damage but designing them to mimic and fit into the natural systems, and lessen the impacts on the system and us.

Ann raises several questions about the perception that natural resources and environmental issues are insurmountable.

They’re overwhelming, often presented very narrowly, and characterized by doom and gloom, though certainly there are many scary issues going on out there. Yet there is also this notion that ecosystems are resilient, that they have responded to changes in the past and will continue to respond in the future, even though we may not know what that will look like or how it will impact the human system.

When natural resources and environmental issues are portrayed as insurmountable, people do not want to deal with them. They ask themselves, “how can we possibly do anything... it’s climate change.” Yet, if we bring it down to “well you can use energy efficient light bulbs, you can conserve water, and you can recycle,” and stuff like that, people can deal with that. In doing so, they need to know whether these efforts will make a difference, otherwise, they’ll say, “why should I bother?” Changes to resolve some of these issues need to come from the momentum at the ground level, from personal responsibility.
As Frank mentioned earlier, one reason that natural resources and environmental issues are not front row issues is because they are often considered “somebody else’s responsibility.”

**Description of Major Natural Resources and Environmental Concerns**

The participants spoke about the natural resources and environmental issues for which they currently are responsible within their organizations or communities. While most organizations address very specific issues according to the mission of their organization, all of the participants are faced with a multitude of concerns, including current and emerging issues such as water quality and availability, sustainability, and challenges from a growing population. Several leaders expressed concerns about short-term fixes that will eventually create future environmental issues or exacerbate emerging issues, such as harden beach structures (e.g., sea walls) and impervious surfaces. Although each leader articulated a range of concerns, the following section captures a portion of the scope, the scale, and the diversity of issues the participants identified.

Frank, a leader in a local coastal government, manages stormwater runoff, the polluting impacts of runoff that result in shellfish and beach closures due to public health risks. In addition to managing the environment for public health, Frank administers solutions for flooding impacts. The activities of management include regulatory compliance, public outreach, and public involvement. Some examples include regulating land use development, providing public education to encourage individual responsibility to prevent non-point source pollution (e.g., removal of pet feces and minimize yard fertilizer), and public involvement in generating innovative ideas for pollution controls (e.g., reducing impervious surfaces, increasing naturally vegetative areas). Frank’s major goal is determining solutions that do not create or result in future environmental problems but rather mimic natural systems for long-term sustainability.

Kate works for a statewide county program predominantly focused on preventing soil erosion. Increasingly, the program assists in managing for water quality, including pollution prevention initiatives in stormwater runoff, in both rural and urban areas. Her leadership focuses on providing incentives and voluntary educational programs to assist landowners
with land management decisions. She believes additional ground water modeling for future decision-making is needed.

Randy, who works with a state agency, provides leadership in protecting public health and the environment through appropriate management. He ensures consistent implementation of state laws and regulations regarding waste management.

Ann’s leadership is with a public land agency that manages healthy forests. Forests were initially set aside for watershed protection. Within her agency, there is a growing tension between preserving resources and conserving resources, a result of a multi-use mandate. More and more she finds herself managing the forests for public use. Protecting and conserving the resource while ensuring users can connect with the forestland involves complex strategic planning as well as restrictions to public access and uses in specific areas. Ann believes there is a balance to restricting public use. If restrictions become the predominate management tool used, it may be more and more difficult to educate and involve the public in an experience to which they feel no connection.

Luke has regulatory responsibility for the protection of endangered and threatened species and habitat. His management activities include avoidance of impacts with natural trust resources. In addition to regulatory compliance as a management action, he provides education and outreach of wildlife populations with citizenry. Luke finds himself increasingly managing human perspectives about wildlife and looking for alternative strategies to meet the mandates of wildlife protection.

James provides leadership for the conservation of wildlife and wildlife habitat but also believes his organization must concern itself with emerging issues and new ways of thinking about conservation. James believes a shift is needed from the predominate paradigm of “buy it and lock it up.” Rather than assume the resource or the environment is taken care of because it was purchased, he believes it is necessary to engage others to ensure long-term protection and conservation. His organization is also concerned with the current impacts of climate change, including the uncertainties, challenges, and questions that management of climate change brings to the forefront, particularly how to respond to the issues and
determining the balance between natural resource protection and the human condition. James is most concerned about what he perceives will be an effort to maintain the status quo (such as building higher sea walls to contend with rising sea levels) rather than thinking long term about adaptive measures that utilize natural processes as part of the response.

Melody is concerned with current and emerging issues. She spends time researching and determining how to take people and social pressures into account in aspects of conservation and resource management. Population increase and subsequent overconsumption of natural resources influences climate change and subsequent changes in weather patterns such as severe droughts). Climate change is a natural way for the system to respond. Melody is concerned with the links and interactions between human and natural systems, between social, economic, and environmental stability, and the potential for severe instability and ramifications (political, market and social instability) as these systems try to adjust.

Mark provides leadership to an industry focused on resource production and forest products. He is concerned with producing forest products as well as protecting water and air quality. Recognizing he is entrusted with a resource, Mark ensures time is available to gather external input that aids decision-making.

Glenn is concerned about what he refers to as the three-legged stool of water availability: supply, demand, and future planning; and the need for stakeholder support in managing the three legs of the stool. Water availability is paramount for both human consumption and ecosystem survivability. Renewable energy and new technologies are not silver bullets from Glenn’s perspective. Growing concerns include the lack of frequent rainfalls and intensive droughts, including the increase in population centers without growth management plans and limited conservation measures. Glenn is concerned with balancing the use and conservation of resources, and he is particularly concerned with the lack of long-term thinking and the application of short-term solutions.

Joan is an educator and a leader in promoting the wise use of resources through science-based decision-making. She believes it is important to involve community members
and non-experts in science-based decision-making. For Joan, community members, along with scientists and other decision-makers, are crucial in maintaining healthy ecosystems, including safe and sustainable seafood and coastal communities.

Sophia is a community leader who focuses on how to think about the connections between natural and human systems. Instead of thinking about command and control on the environment, Sophia would prefer that communities focus on ways to mimic the environment, to work with it. If individuals would conserve, using only what they need, there could be an abundance of resources available for those who lack access to basic needs such as water, food, and shelter. Sophia believes there is inequality and disparity in distribution of resources. She believes respecting individuality and the creative nature of individuals are important in solving natural resources and environmental issues.

**Overarching Concern: Balance between Natural and Human Systems**

One overarching concern that each leader expressed during the interview process was how to balance the interactions between the natural and human systems, which are clearly intertwined and often difficult to separate, especially as population numbers increase. Of particular concern is the need to change the current way of thinking about management of natural resources and the environment. Several topics were repeated, including biomimicry, or learning to mimic nature in engineering or construction design; for example, permeable surfaces that allow ground water filtration. Protecting the status quo was perceived by some as short term thinking, such as building higher sea walls to mitigate rising sea levels, rather than building knowledge about natural processes and developing design solutions that work with natural processes. For others, short-term solutions have created future environmental problems, suggesting the need to encourage strategic conversations and thinking about the interactions between the natural and human systems.

One leader spoke about the increasing need to manage human perceptions about wildlife and the environment, as alternative strategies are developed to protect the environment and resources. Another leader believed incorporating community members and non-experts into science-based decision-making would help not only to manage perspectives
but also to develop the alternative strategies needed for long-term thinking. Another leader spoke about the importance of allowing users the ability to access or connect to the resource, believing it is the “connection” that builds sensitivity to the resources and respect for nature.

**Natural Resources and Environmental Issues of the 21st Century: A Perspective**

Each participant offered his or her perspectives about the five major natural resources and environmental issues of the 21st century. Based on frequency of response, the subsequent paragraphs describe and summarize the five leading issues from the overall list of responses: climate change, water availability, alternative, new, and renewable energy, population growth, and societal change in thinking. The first four issues identified generally were separated by one or two responses, and thus there was a not large distinction in the order of the responses. The fifth issue listed describes future processes for societal change in thinking about how we live in our environment and how we deal with each other. The order of the five leading issues does not imply a prioritization nor ranking of the issues, but rather distinguishes the more common issues identified by those who participated in the interviews. The subsequent paragraphs describe the remaining issues that the participants believe will be part of the 21st century.

**Climate change.** Climate change received the most frequent responses, identified as the first major issue, and defined, as Randy described, “by its attendant symptoms such as water scarcities, dislocation of populations, dislocation of agriculture use, energy loss due to loss of hydropower, and population relocation due to salt-water intrusion.” For Randy, salt-water intrusion and loss of agricultural land top his priority list as being the most crucial symptoms to attend to than other conceivable impacts of seawater rising.

Joan further elaborated how sea-level rise could affect coastal areas, in particular fishery habitats including wetlands and estuaries, and the existing built communities. Given the prevalent use of coastal septic systems, coastal waters could be impacted from an increased flooding of those systems.
James described a current situation on the barrier islands, one that requires financial resources, resources that are limited and is being applied to solve a current issue for locals and visitors to the area but the solution cannot be maintained given sea-level rise.

We continue to build houses on the Outer Banks and watch NC 12 erode away, [maintaining] that the Department of Transportation ought to keep that road functioning. We continue to rebuild the old bridge to a road that can’t be maintained to an island that in 30 or 40 years is gonna be segmented. It’s actually a disservice to that community to rebuild a bridge and a road that cannot possibly be maintained . . . It’s not about the use of the resource but whether the resource is even useful given future events.

Luke added, “that which pushes people inland, will push species inland, and the conflict [regarding natural resources and environmental issues] will stay the same or get worse with spatial location changes.”

Melody is convinced that market instability will be an associated implication of climate change. “It will get rough when agriculture, investments, and doing business the way we’re used to changes because of unpredictable weather patterns or patterns in water use and availability.”

Both Glenn and Frank expect more frequent and unpredictable droughts, referencing the 2007 drought as a potential indicator. Recognized as one of the worst droughts in recorded history for the Southeast, states developed new drought management policies and some cities prepared evacuation plans.

What worries James most is how people will respond to future climate change issues. He believes that in the short term, they will want to protect the status quo, putting energy and resources into solutions that cannot remedy situations like harden beach structures such as sea walls. Yet, as James points out, one immediate driver that may capture the attention of planners and consumers are bankers and insurance companies who are wading into the discussion about climate change from an economic standpoint, not wanting to provide loans on or to insure areas that may not last. James elaborates further:

There is no point in historically going back and blaming anyone. We need to move forward [recognizing] our interests in conservation are in jeopardy and the interests in
the economy as well as other interests are in jeopardy. We, as conservationists, need to be open to working with other motivations . . . and thinking broader than our respective missions. The idea that everyone is going to hug a tree or embrace wildlife like we do is just not gonna happen.

Some coastal communities, according to Joan, are starting to consider the issues, though the difficulty lies in how to effectively plan for these changes, given the level of uncertainty about the initial impacts and locations. Though discussions may have begun, Randy believes “we are past the tipping point that situations will only exacerbate as time goes forward.” Glenn offers, however, that it is “never too late to address something of importance.”

James agrees. “We have a chance to get rid of those polarities and look at issues from a viewpoint that organizations have not done before. Our future realities are one of adaptation like the Maldives, the lowest lying nation on earth, whose leadership is in investing in future lands.”

**Water availability, quantity, and quality.** Water was cited as the second major issue in terms of availability, quantity, and quality. Although water quality has long been recognized as an issue, water quantity and availability are leaping to center stage. Limits have already been placed on water resources in the western part of the United States, and the east coast recently experienced its most strenuous drought ever, testing the limits of drinking water availability.

Frank raised concerns about the role of third world countries in future discussions on water availability, quantity, and quality.

Without controls, some countries are creating dead zones in the ocean by using their rivers as landfills. This has a huge effect on the natural environment, in particular water quantity. Water as a resource, whether it is a resource for recreation, for producing food, or for drinking, it is all related.

Kate expects that in the future, there will be the need to turn more often to ground water resources, a limited supply.
Luke, like Kate and Frank, believes that with a greater population growth in North Carolina, pressures will increase on limited water resources. He believes a more concerted effort is needed to implement logical conservation measures. Concerned with the significant amount of environmental impacts and contention that will result from building new reservoirs, Luke believes an intensive conservation effort is needed.

There is unequivocally the expectation that the level of conflict about water issues in the 21st century will escalate. Whether it is for drinking, for producing food, for recreational purposes, or increasing demands from other regions due to their own lack of controls, significant questions will need to be addressed about how to manage current and future water resources for the long term. For Glenn, “there is a three-legged stool on water, supply, demand, and future planning, and all legs will require support from numerous stakeholders in managing these three legs of the stool.” Glenn states,

There has to be a balance in our state government, with the regulatory community, with industry and with the customers in the end. We’ve got to balance what we have because there are not enough natural resources in our state that we can all use them to whatever extent we wish at any time we wish forever. We’ve got to conserve.

**Alternative, new, and renewable energy.** The role of new, alternative, and renewable energy sources were identified as the third major issue. The growth of new, renewable (such as wind, solar, and water), and alternative (biofuels and biomass) energy sources are frequently a discussion point among industries that produce energy, governments that research energy, and organizations and communities that raise concerns about particular forms of energy. For the most part, the global infrastructure was built for fossil fuel use, such as oil, coal, and gas. Yet, the discussion on renewable and alternative energy sources is focused on more efficient and cleaner means of production. Even though there is no agreement on a most desirable form of energy source, there is a general desire to rely less on foreign oil as a predominant energy source. As Kate said, “We need energy sources closer to home that are limited in environmental impacts.”
Glenn spoke about the role of renewable energy sources:

There are those who believe that renewable energy and demand-side management will take care of our future needs. And there are certainly regulatory requirements on public utilities to obtain a certain amount of their future energy from renewables or demand-side management initiatives. It is a very positive step to put regulations in place that require industries to respond and invest money in new technologies but it is not a silver bullet solution.

Though nuclear energy is being eyed as a means to respond to climate change, there are very controversial issues associated with the growth of nuclear development in the future, such as water availability and nuclear rod disposal sites.

James discussed how clean energy, like wind, has divided the environmental community, even though it is considered a renewable energy source. “The concerns,” says James, “range from wind turbines that flay bats and birds to turbines that will tarnish the viewshed.” [A viewshed used in this case means an area of particular scenic or historic value that is often visible from a public area].

While wind power issues may raise concerns for aesthetics and wildlife, additional science is needed to support the location of wind turbines and the impacts of this renewable energy source. In addition, there are concerns with biofuels. From the potential for mass production, which could in turn destroy natural habitats, to the need to monitor alternative energy development for mega land use and application of fertilizer, there is a need to ensure that a solution does not create additional issues.

Luke pointed out that an increase in population growth and development correlates to an increase in energy consumption. He foresees a future that will require evaluation and mitigation from the development of alternative and renewable energy sources such as anticipated wind farms off the Atlantic coastline.

Mark believes the words used to describe energy (alternative, renewable, new, or clean) could be a source of conflict in future energy discussions. In Mark’s example, he discusses how groups or organizations are competing to make transportation fuel out of corn or trees.
It’s a race to see who’s gonna get the technology right, get it first, and start making money. I don’t even like the term bio fuel because it makes it sound like you’re gonna do something different with it. Well the technology is not new . . . they’re gonna take it, burn it in a co-generation facility (co-gen plants burn coal and another fuel; i.e., wood waste), stick a new name on it, and say it’s a good thing. For me, a more accurate use of the words of bio fuel, is when can take a grass species and use it to fuel your car.

**Population growth.** Population growth, the fourth issue raised, is perceived to be a significant driver in escalating climate change due to overpopulation in areas, placing an unsustainable demand on natural resources, in particular water and food resources, and land use changes. Whether in part from overpopulation in some areas and overconsumption in others, an increasing population remains a 21st century concern.

Glenn believes discussions about how to manage population growth could aid future decision-making. Ann believes that any population management strategy should include how to connect the people who place demands on the resources with the benefits of the resources. As Ann says, “Too much management and exclusion may limit the only connections people have to the resources and increase the conflicts.”

**Societal change in thinking:** Societal change in thinking is the fifth issue raised. Several participants touched on it, though in very different ways, emphasizing its importance to the 21st century. While some participants emphasized a change in thinking about how we live in our environment, others accentuated a change in thinking in how we deal with each other.

Foremost on the list is the concept Sophia identified about “making a change in our way of thinking, both in terms of how we think and what we think.” She added,

The twenty-first century issues are still twentieth-century issues. We have known about them forever, yet the political issues, sovereignty issues, identity issues get in the way of solving them. I’m not advocating that everybody has an exact equal share. Individuality is very important. However, there is a matter of equity in distributing the resources, with respect to fairness and basic needs. There’s no reason anybody should go hungry, ever.
Sophia further believes that how the issues are framed can lead to problems. From her perspective, there is an abundance of resources rather than a limited amount. For Sophia, the issues stem from how the resources are used, the equity in the distribution of those resources, the quality of those resources, and the manner in which the earth is manipulated to acquire the resources.

For instance, Frank discussed how everything is readily available in the United States. Culturing ourselves to be a disposable society, you can get anything you want from the corner store, all in a package, and sometimes you simply have to touch a button. The international community is replicating our life, as the U.S. consumes huge quantities of natural resources to sustain our way of life. How does this cultural of affluence affect the sustainability of our society?

Melody would like to develop ways to encourage people into supporting the long-term management of the resource.

With growing populations, we need to incorporate the benefits of natural resources so that people recognize those benefits, just how people and the natural environment interact. We need to bring people more into the loop of natural resource management. There is no wall of funding in the long-term future, and thus to support long-term management, people will be key. People need to have some understanding and societal value in environment and recognize it.

Some of the participants would like to encourage a stronger role of public involvement, increasing the public’s level of responsibility in helping to manage the resources. The participants recommended the need for broader stakeholder involvement among resource managers, industry, and communities to achieve integrative decision-making and long-term planning.

For example, leaders such as James believe conservation strategies need to change, that the model of buying 10,000 or 100,000 acres of land and calling it conserved, is limited in its effectiveness. Rather, gains in conservation are going to be in collaboration with communities and citizens to change patterns of land use and patterns of consumption. Calling for changes in thinking within the conservation community, James is looking beyond current conservation models to larger questions, such as: “What does it take to move forward? How
do we get to some place that all of us can live with? Together we have to find a new way to manage resources.”

Too often, as Mark and James say, professionals go into natural resource work because they don’t want to deal with people. Yet every natural resource decision ends up involving people. Future leaders need to embrace this concept and prepare themselves with the technical and disciplinary, interdisciplinary, and interpersonal skills it will take for future management.

Glenn expresses concern about building the capacity and commitment of future generations to solve problems. He stated that young people demonstrate a need for instant gratification and thinking things should be easy, and assume if it is hard to do, somebody else will do it. Glenn states,

This could be a problem in the long term, since some of the best and most important things require a tremendous amount of pain and effort. If future generations can expect tougher challenges, how can you build capacity to solve problems if people do not want to engage?

In addition to the five leading issues listed, the study participants identified ten additional critical topical areas of concern for 21st century natural resources and environmental leaders. There is no order of significance in the way this list is presented.

1. **Discussion and Development of New Markets and Financial Systems.** A future controversy is expected to be about government utilizing “hard-earned tax money” to pay companies or landowners for growing trees (locking up carbon). Mark questions whether these activities should be subsidized knowing that companies and landowners were planning to grow trees anyway. There is the issue of how to ensure that a system like this will provide a fair process of tracking, documentation, and compliance.

2. **Economic Growth, Particularly National Debt.** Severe recessions challenge the ability of states to fund programs established for the public good. If the ability to sustain environmental programs continues to be a challenge, it will be difficult for state and local government to manage and protect the environment.
3. **Loss of Indicator Species, Impacts on the Wildlife.** As populations increase and
development patterns, resource use, and consumption patterns do not change, Joan expresses
concern for species loss (guerillas, elephants, tigers, lions, and polar bears), whose presence
or absence in an area could indicate certain environmental conditions, and what those
changes mean for the future.

4. **Changes in Ecosystems Due to Increase in Invasives, Pests, Pathogens, and
Diseases.** There is expectation that pests will adapt and pathogens will mutate and move
around more quickly, especially given the global connections. Escalating variants in public
health issues, Melody believes, is simply the tip of the iceberg for the kinds of effects that
will be seen in the natural environment.

5. **Unregulated and Incompatible Land Use Development** (developing smart growth
strategies). Unregulated and incompatible use development is projected to be a future issue,
especially when industrial complexes are sited near sensitive ecological areas.

6. Fragmentation of Private Land Holdings. Given continued fragmentation of large
blocks of private natural land, what will happen with future generational change? Sometimes
as land passes to the next generation, the next generation can no longer afford to keep their
land.

7. **Increase in Disturbances and Natural Disasters from Wildfires, Severe Weather
Events such as Hurricanes and Droughts.**

8. **Increase in Conflicts between Protected Areas, Management, and User Groups.**
Overutilization of open space is escalating conflicts among users groups and protected area
managers. Although the public is currently encouraged to utilize open space, land managers
do not want users to believe that they have a “right” to protected areas, regardless of the
impact that they may have.

9. **Improving [Maintaining] the Current Transportation System rather than
Expanding It.** Ann believes efforts should be expended to improve the current transportation
system, rather than expanding it for bigger and wider roads to accommodate more cars and
people, which results in an expanded infrastructure and an increase in impervious surfaces. Too often, the results are loss of agriculture and forestland.

10. Role of Technology in the Future of Stakeholder Communication and Future Generations. The internet has a role in breeding divisiveness, in particular among people who tend to remain anonymous. It is easy for people to conduct a frontal assault as a form of communication instead of reasoned and rational thought.

The young generation is learning to communicate through text and emails. They are not learning how to effectively communicate with each other. They communicate on their own time, from a very safe environment, by punching keys on a little box in their hand. Complex issues cannot be worked out that way; texting and sending emails is not an effective communication tool for building consensus around tough issues. A foundation for face-to-face communication is needed to successfully implement solutions.

What is clear is that human and natural systems cannot be understood in isolation. The overarching concern for the 21st century is how to balance the clearly intertwined and often difficult-to-separate interactions between the natural and human systems. Compounding the challenge of any endeavors to find a balance are new levels of unpredictability and complexities that may hamper future planning efforts. This emphasizes the need to work across disciplines, to understand the linkages between the ecological, economic, and institutional processes (Holling et al., 2002).

Because they are branded as complex transsocietal “wicked” problems, transcending geographic, jurisdictional, institutional, and political boundaries, it is difficult to make environmental challenges front row issues. From Holling et al. (2002):

These complex issues connected with the notion of sustainable development are not just ecological problems, or economic, or social ones. They are a combination of all three. Actions to integrate all three typically shortchange one or more… Compromises among those viewpoints can be arrived at through the political process. However mediation among stakeholders is irrelevant if it is based on ignorance of the integrated character of nature and people…Each approach is built upon a particular worldview or theoretical abstraction, though many would deny anything but the most pragmatic and nontheoretical foundations. The conservationists depend on concepts
rooted in ecology and evolution, the developers on variants of free market models, the community activists on precepts of community and social organization. All these views are correct, in the sense of being partially tested and credible representations of one part of reality. The problem is that they are partial. They are too simple and lack an integrative framework that bridges disciplines and scales. (p. 7)

“Learning, especially adult learning,” in the words of Robert Blakely (1965), is “fundamental to the solution of all social problems” (p. 54). Blakely (1958) ascertains further:

All individuals and societies have problems. But this does not necessarily mean sickness. Problems are of the essence of life, which is struggle and change. The solution of one problem is the creation of at least one more. Problems are of the nature of digestion, and not of the nature of ulcers, of the nature of breathing, not of the nature of bleeding. It is in the way problems are dealt with that there is sickness or health, in the difference between being overwhelmed by a problem and transforming it into another at a higher level. (p. 19)

According to Michael (1995), there are two kinds of learning. One kind is appropriate for a stable world, as it is more concerned with right answers, including learning how to adapt and settle into another mode of being and doing. The second kind of learning is more suitable for a world of uncertainty and change. It is driven by what are the most useful questions to ask and learning how to keep on learning since the questions keep changing. Yet, “our conventional ways of thinking and speaking about language and social reality are inadequate for coping with our current circumstances” (Michael, p. 462). There is a need for a wider network of communication between a diverse set of natural resources and environmental leaders for integrative problem solving and planning, including how to engage the public in its role in helping to manage for the future.

Summary

This chapter contextualized the experiences of environmental and natural resources leaders who participated in the study. The conceptual and structural framework of the Natural Resources Leadership Institute was described in order to provide the reader with a foundation from which to appreciate the leadership development institute and the experiences shared by the participants. The leadership institute was designed to specifically educate and support a
diverse group of professionals committed to striving for agreement on issues affecting the sustainable development of North Carolina’s natural resources and the quality of the environment.

This subsequent section provided a demographic view of the participants, familiarizing the reader with the natural resources and environmental leaders who agreed to participate in the study. The demographic profile revealed that nearly as many females volunteered to participate in the study as males. The age range of the youngest participant in the study was 30-39; the 60-69 age range represented the most senior participant, and 40-49 was the average age range of those interviewed.

Predominantly, the formal educational background for many of the participants was either in the natural sciences or in the social sciences, though other disciplines, such as the physical sciences, the formal sciences, the humanities, theoretical, and professional disciplines provided a foundational and educational basis. Seven of the participants interviewed provide leadership to a division or organization; the remaining four participants provide leadership to programs or projects in working with organizations and partners. The participants’ years of professional experience ranged from 5 to 22; the average level of professional experience among all of the participants was 15.7 years.

Geographically, most of the participants were from the Piedmont area of North Carolina, including its central, northern, southern, and western reaches. Two of the participants were located in the mountains or western area of the state, and two participants were from the eastern part of the state.

A broad profile of the study participants was introduced to the reader that described their reasons for coming into the natural resource profession. Often, early connections with the environment and with other people who connected to the environment influenced the career direction of the study participants. Most of the study participants immediately recalled an early influence in their life that guided their career direction, such as being outdoors, spending time with elders, or the influence of a teacher. Those who chose the profession later in life said the profession found them.
In defining natural resources and environmental leaders, words used to describe a characteristic of each kind of leader was “having a vision” or being “visionary.” Although some study participants thought it was difficult to distinguish between natural resource leaders and environmental leaders, a few characteristics emerged that set them apart based on the study participants’ responses. For example, a natural resource leader may lead based on the resource; the environmental leader may lead based on the issue. There tend to be fewer stigmas in labeling oneself a natural resource leader than an environmental leader. A distinguishing characteristic in defining natural resources leaders is that they receive more professional or formal training, both in experience and in education, than an environmental leader. Finally, several participants suggested that the future may bring new definitions that exclude current definitions. Concerned that the idea of a natural resource leader will become dated, and that the phrase “environmental leader” carries too much baggage, one participant suggested that the leader of the future is one who can respond to the interactive nature of human and natural systems.

The discussion with natural resources and environmental leaders about the current issues they face revealed the consequences of short-term solutions for future environmental problems. There is a level at which “uncertainty in nature is presumed replaced by certainty of human control…social systems initially flourish from this ecological stabilization and resulting economic opportunity. But that success creates its own failure” (Holling et al., 2002, p. 6). An example used by several participants is harden beach structures (i.e., jetties, sea walls, and groins) to control erosion. The suggestion was to encourage new kinds of conversations and thinking about the interactions between the natural and human systems.

The participants identified the five most important environmental and natural resources issues of the 21st century that are listed here in no particular order:

- Climate change
- Water availability, quantity, and quality
- Alternative, new, and renewable energy
- Population growth
• Societal change: changes in thinking

In addition to the five most important issues of the 21st century, the participants generated 10 additional issues, two of which were changes in ecosystems due to increase in invasives, pests, pathogens, and diseases and the role of technology in stakeholder communication.

What is clear is that human and natural systems cannot be understood in isolation. The overarching concern for the 21st century is how to balance the clearly intertwined and often difficult-to-separate interactions between the natural and human systems.

The comprehensive nature of chapter 4 was intended to provide context for the findings presented in chapter 5.
CHAPTER 5
DISCUSSION OF FINDINGS

This chapter presents a discussion of the findings from the perspectives of the participants, the interpretations of the researcher, and the relevant literature. Presented predominantly in the voice of the participants, an analysis of their individual stories documented a collective experience that occurred over a 10-year period. Responding to the overarching research question for this study: What was the nature of the experiences of leaders who participated in a natural resources leadership institute?, five primary themes emerged from the in-depth and rich perspectives of the participants:

1. Context of the NRLI Learning Experience
2. The Practicum: Planning for Change in Inter-organizations
3. The Rationale for Leadership Development
4. Integration of Leader Development and Leadership Development
5. Shaping a Learning Community or Cultivating a Community of Practice

Listed in the respective discussions of the five primary themes are auxiliary thematic findings. This chapter closes with a summary of the findings that resulted from the in-depth interviews.

Context of the NRLI Learning Experience

Context is a dialectic union of personal and external forces; a dynamic notion used by the learner to make sense of and manipulate their learning content (Baptiste, 2001). The context of the NRLI Learning Experience referred to in this study is the setting in which the learning occurred. A composition of the affective, cognitive, and action learning domains, the NRLI context includes the physical and geographical setting, the temporal, historical, and cultural aspects, and the people who influenced the setting. Consisting of the larger physical and sociocultural environment, it includes the external power dynamics that learners traverse to participate in the learning experience. It also includes the immediate learning environment such as the workshops, the learners and instructional team, the development of program
design, and day-to-day instructional activities that support the learning experience. This consists of the planning for change construct, the practicum, a mechanism to apply learning from the NRLI learning context to an external context.

Using Baptiste’s (2001) dialectic union of personal and external forces, the learning context includes the learning processes or internal learning mechanisms of the learners – the psychomotor, the cognitive, and the affective. The setting includes all the knowledge systems (Mackeracher, 2009) brought to the learning environment by the learners, the program developers, and the instructional team. The knowledge systems in this sense refer to the ways of knowing that create and validate new knowledge and a part of the learners’ affiliation and culture (scientific community, regulatory community, environmental community, business community, educational community, and so on). It is within the learning domains that the learner makes sense of and manipulates the learning content at both an intrapersonal and an interpersonal level.

Context is the situation, placing people and action at a point in time and space, as a way to understand what they say and do. Without context and its rich clues for interpretation, it is difficult to decipher or understand the experiences that are presented in a setting or situation. Lightfoot posits, “We have no idea how to decipher or decode an action, a gesture, a conversation, or an exclamation unless we see it embedded in context” (as cited in Patton, 2002, p. 63).

During the interviews, the eleven participants identified various elements that shaped the nature of their overall learning experience. Within the thematic category of Context of the NRLI Learning Experience, four integral themes emerged:

1. The Confluence of Learning: Merger of Science and People Education (Adult Learning, Leadership, and Environmental Conflict Resolution)
2. Diversity as a Source of Learning
3. Credibility of Institute Leadership and Others
4. Learning, Engaged, and Applying!
The Confluence of Learning: Merger of Science and People Education (Adult Learning, Leadership, and Environmental Conflict Resolution)

Natural resources and the natural environment from which they are derived are the backbone of civilizations and cultures. Many resources, such as land, air, and water, are essential to life and the quality of life. Natural resources and environmental leaders are often trained in how to manage these resources, in particular for their ongoing contribution to the ecological landscape. Yet, too often, a technical and scientific education does not prepare natural resources or environmental leaders for the social, cultural, and economic dimensions that are intricately connected to managing resources and the environment. Presenting a broad range of challenges, complex environmental problems do not readily lend themselves to technical solutions, especially when there is a social dimension to the problem (Manolis et al., 2008). The previously stated characteristics of environmental problems identified by Gordon and Berry (2006), the complex and contentious interactions between systems, a scattered knowledge base, the level of uncertainty and longtime toward solutions, amplify this statement.

Social Dimensions in Complex Environmental Problems Do Not Readily Lend Themselves to Technical Solutions

The Cape Hatteras National Seashore and Recreational Area (CAHA) is a dynamic barrier island along the coastline of North Carolina. Managed by the National Park Service (NPS), the CAHA became the first national seashore in 1937, established to preserve significant segments of the unspoiled barrier islands, a string of islands separated from the mainland. Narrow, low-lying, dynamic landforms that parallel the coastline, the barrier islands are constantly migrating and reshaping in response to wave and wind actions, storms, ocean currents, and changes in sea level. The NPS is mandated to preserve the natural and cultural resources of the park for the enjoyment, education, and inspiration of current and future generations.

The CAHA, also known as the Seashore, is a very popular destination for tourists, with a little over 2 million annual visits. Popular recreational activities include canoeing,
birding, swimming, fishing, and off-road vehicle (ORV) use. The CAHA is home to three federally protected endangered species: the piping plover shorebird, the seabeach amaranth plant, and sea turtles. The area is also critical habitat to populations of shorebirds and waterbirds. The peak visitor period coincides with the peak nesting season for waterbirds, shorebirds, and sea turtles. To protect the nesting cycle of these species, sections of the Seashore are managed with significant restrictions and closures to off-road vehicle (ORV) access.

Since 2008, the NPS has been developing the first ORV management plan for the Seashore. The intent of the ORV plan is resource and species protection, visitor access and safety, and management of potential user conflicts. Although a law has been in place since 1972 requiring the NPS to develop special regulations for parks that allow ORV use, ORV use has been largely unrestricted since the authorization of the CAHA. For more than four decades, a culture of permission and expectation ensued, until the recent plan that ensures management of ORV use.

Closure of beach access to ORV use is perceived as a restriction to local culture rather than management of a resource, especially since locals “have been doing this this way for a number of years.” Furthermore, there is the perception that visitors and locals who prefer ORV sport fishing will take their business elsewhere, thus dampening a local economic base. Yet, anger stirs those who “believe they speak for the resource, for the survival of the turtles and piping plover,” given the lack of a NPS management plan for ORV use over the years. Over time, this conflict has escalated within the community and beyond, pitting one side against the other, and has included threats of physical harm to community members involved in the issue. Competing uses, enforcement of ORV recreational use, and protection of critical species raise social, cultural, economic, and environmental concerns, resulting in tremendous conflicts. For natural resources and environmental leaders, the contentious issues at the Seashore are not simply management issues about resource protection; they are also about management of people and their access to the natural world.
Glenn’s story about his attachment and desire to improve his community conveyed the barriers and difficulties along the way. When he took his new job managing lake services, he learned quickly that people get very emotional about land in general, particularly if it adjoins a lake on which they live. He discovered that shoreline lake management, like the CAHA, was as much about the management of people and their access to the natural world as it was about managing the natural world. His previous training and education did not prepare him for the “people aspects” of his new lake services job.

My prior training did not prepare me for the [people aspects] of my job. My prior training in a military environment was very technical; certainly not oriented toward stakeholder processes [or shared decision-making]. So my background didn’t prepare me to do what I felt like I wanted to do. I had to get that on the job and through training processes like the Natural Resources Leadership Institute. So it’s very difficult I think to get the kind of training that includes both the science and dealing with people education that you need strictly in a classroom setting to be able to do what I’m doing now.

**Our Tendency is to Formulate and Solve Problems from an Intellectual Vantage**

Very often, natural resources and environmental issues are spoken from the scientific or technical base of one’s discipline. As a result, our discipline can frame how we understand and make sense of the world and communicate our understanding of the world to others. Conflict and tension in problem-solving environmental and natural resources issues is compounded by multiple ways of knowing. There is a tendency to formulate and solve problems from an intellectual vantage without regard to the fact that different people and groups think in different ways (Alder & Birkhoff, 2004).

In part, the NRLI brings together the hard sciences (for example, life sciences and engineering) with the soft sciences (adult education, leadership theory, and environmental conflict resolution), as one participant describes it, integrating science education with people education. In the context of the NRLI learning experience, participants are exposed to a range of existing natural resources and environmental issues from across North Carolina like the CAHA and other associated policy issues. This includes introducing the science and management strategies surrounding policy issues as well as becoming familiar with different
explanations and points of view about an issue, and processes or methods for working with divergent thinking in order to improve decision-making.

Joan discusses the impact of her scientific education on her role as a technical expert and educator and the value of including different points of view in environmental decision-making.

Much of my educational background is and was very science oriented. In my world, things are expected to be precise, and you set parameters to test your hypothesis, and so on. Historically, I have operated in that world of scientific rigor but I now think you have to do both, including bringing people together to determine what can be worked out.

During the training sessions, an effective instructional method for the participants was hearing and learning from other professionals like themselves through a case study. An in-depth investigation of a particular topic or issue – a case study – brought to life the reality of a geographically based issue as opposed to a theoretical problem. Told through the voice of a mixed panel of participants, the panelists brought to life the context and substantive nature of the issues, the process and procedures used to problem-solve the issues, and the outcomes of the endeavor, including the status of the situation. For example, sessions held at the coast examined a coastal resource and instructional sessions held in the mountains studied a resource issue pertinent to the mountainous region.

When Science and People Education Meet, Situations (and Systems) are Understood in a Deeper, More Critical Way

Involving individuals who “experienced or lived” the situation brought “real-world” examples of how the natural and human world connect and collide. Case studies, in this sense, are a useful instructional tool for developing awareness and understanding about the circumstances of situation in a deeper, more critical way (Apps, 1991). Sometimes the case studies were coupled with field trips to relevant locations where various stakeholders spoke at the site. On other occasions, videos of existing or previous situations were presented, accompanied by actual participants who added current perspectives about the situation. The use of multiple perspectives to tell a story allowed the participants to surface assumptions
about the situation with the case-study speakers. The case studies also provided an opportunity for participants to hear about the lessons learned or the principles of practice (Patton, 2002) that the panelists believed resulted from the situation.

For Frank, the value of the case study taught him two things: He was introduced to environmental issues in North Carolina and he was taught the importance of limiting his assumptions about various aspects of a contentious situation. The act of presupposing the motives of others or the context and circumstances of a situation constrained new knowledge and understanding.

One of the meaningful experiences for me was the real live case studies of what was going on in the local community where our session was located. I distinctly remember being surprised about what the issues were, and over time it conditioned me not make any assumptions about how it’s going to be.

For example, the coastal region of North Carolina is a vital part of the state’s heritage, its ecological health, economy, and the daily life of its residents. One management strategy to ease coastal erosion is beach renourishment. Several coastal residents shared various facets about beach renourishment during a case study: Someone from the scientific community discussed the natural processes of beach activity; a representative of a homeowners’ community described the value of the beach renourishment to their property values; a representative from the local economic commission described the importance of protecting recreational values while maintaining the ecological health of the area; and member of the regulatory community presented about the impacts of beach renourishment on coastal environments. The same questions were posed to the panelists:

1. What are the concerns about beach renourishment that the environmental community has? The homeowner? The local economic commission? The scientific community?
2. What steps are being taken to address each of those concerns and reduce the level of conflict surrounding this issue?
3. What other alternatives might be considered in deterring beach erosion?
The Beach Renourishment case study took place on the North Carolina Outer Banks. The case study was rich in scientific information about the dynamic nature of the beaches and inlet migration on the Outer Banks, the natural process of shifting, building up, and then shifting or eroding again, in response to waves, winds, storms, and relative sea level rise. Protecting the mainland from the ocean, the migrating barrier islands are in constant flux. With anticipated sea level rise and sinking of coastal lands in some areas, questions have been raised about the risks of continued development on the barrier islands. The loss of sand during the natural barrier island process has, in some instances, placed the shoreline close to homes and commercial enterprises. Beach renourishment, as a management strategy, extends the shoreline back out and away from coastal property, thereby protecting homes as well as the recreational value along the shoreline to maintain tourism-dependent economies.

The case study included a field trip to a site of beach renourishment. Guided by a local scientist, the group discussed the process of relocating sediment to replenish the eroded beach areas. Sediment mixture used for renourishment is expected to be very similar in composition to natural sand. Once an area is renourished, it is anticipated that it will need to be renourished again, because renourished areas have a tendency to erode more quickly than areas of natural sand.

The application process of beach renourishment is not without conflict. First, the process of extracting sand from one area to another can have short and long-term impacts to the ecosystem, such as disturbances to the biological coastal communities on the beach or at the dredging sites. Second, an eroding shoreline is a natural process; beaches are designed by nature to migrate and protect the mainland, thus the protection afforded by beach renourishment is for the benefit of coastal homeowners and economies. Beach renourishment is not protection for the beach. Third, one of the more contentious aspects of beach renourishment is the recurring payments for renourishment applications. Subsidized historically by federal and state dollars, there is push for coastal economies to bear most of the costs for renourishment.
Like Frank, Kate valued case studies like beach renourishment as illustrations of the different kinds of natural resources and environmental issues throughout the state. Of particular importance to her is the role of process management and process design in helping groups discuss and generate options for contentious environmental issues.

Another meaningful part of the NRLI was getting a better understanding of the current issues going on in the state, and the interplay between state and local government policy initiatives. Likewise, I liked learning about the past issues and specifically how you all [Institute director and associate director] as the facilitators, worked through those issues, whether the results were positive or negative.

Learning how and when to involve a wider group of participants in a process to achieve a collaborative decision takes time and patience. The more stakeholders are involved, the more complex are the roles, the differences in individual knowledge, and the dynamic aspects of science, policy, and vested interests in the issues.

*Development of Future Natural Resources and Environmental Leaders through Science and People Education*

The confluence of science-based education with people education is the coming together of natural resources and environmental science and policy with adult education and learning, leadership, and environmental conflict resolution. The gathering together of traditionally separated disciplines provides an integrated and multidimensional perspective on learning and the context in which the learning was situated (Merriam, 2008). The integration occurs across subject domains (i.e., natural resources and the environment, leadership, and environmental conflict resolution) as they are discussed, examined, role-played, and applied during a leadership project, as if they were one subject.

Context is socio-cultural: There is a multidimensional nature to the learning experience. The mainstem of the context is the human dimension within the natural resources and environmental context. For example, O’Sullivan (1999) described the Western tendency to separate understanding of natural systems from human systems, in spite of the innate coupling of individual, societal, and ecological systems that are together in a combination of competition and mutual dependency (Bateson, 2000a). Given the intricacies and connections
between the environment and society, problems faced by organizations are becoming more “environmental” because of an increasing human population, broader availability of information, and the need for involvement in decision-making by the larger populace (Gordon & Berry, 2006). Because environmental issues are burgeoning and contentious, the premise of NRLI is alternative thinking about leadership that helps resolve or manage these interconnections and interactions.

Luke believes it is critical to teach science education, like biology, along with people education. He believes this learning format is “totally lacking in the traditional educational process,” that it should be a requirement for the future development of natural resources and environmental leaders.

Maybe it’s different now, but I believe we can’t just focus on the biology of a system. We have to teach others to have an understanding of people. Institutions have always fallen very, very short of this goal. It’s said that 95% of the people that are biologists are introverts in every sense of the word. I’m not talking about the kind of introvert who is a really excellent teacher but has to go recharge his batteries by being alone. I’m talking about people that can’t interact with people, or if they do, tick them off, from the get-go because they just have this high and mighty opinion about an issue and have trouble seeing various sides of a position.

The skill to effectively interact with people, to be able to see their viewpoints, appears to be totally lacking in a majority of people that are in our business. Learning these skills ought to be as big a part of the curriculum to develop the future natural resource leaders. I cannot say that enough, even in my own organization. There have been times during a meeting when I’ve heard a colleague make a statement that I cannot believe they just said. For me, if someone takes the time to understand what I think about an issue, who asks questions, and is actually listening to me, the value of that simple interaction is immeasurable. We just do not do a good enough job training people about the importance of interacting with others.

The confluence of learning also occurs as result of an adult learning theory and teaching concepts about confluent education, as described briefly by Knowles and colleagues (2005), and at length by Brown (1990) in his introduction to confluent education. Confluent education is both a process of teaching and learning, integrating the affective and the cognitive domains in individual as well as group learning. Traditionally, the education of
scientists involves a greater emphasis on the cognitive aspects in teaching and learning, such as comprehension, synthesis, analysis, and evaluation, and the development of skills and concepts. Yet, the affective domain of the learning – the learner’s values and motivations, their attitudes and perceptions, and their assumptions and stereotypes – is just as crucial, particularly with respect to controversial issues, because the affective domain can limit, inhibit, or enhance the learning environment.

In Brown’s (1990) Confluent Education, the cognitive and the affective aspects of the learning and teaching environment are brought together in the context of learning, particularly in the discussions of controversial issues. Learning experiences that challenge the learner with alternative points of view can enhance self-awareness. The learner understands his or her position more readily and clearly, becoming aware of the inadequacies and inconsistencies in their arguments and rationale. This creates learning room to engage others in the creation and generation options for feasible solutions. Integrated in the learning environment, then, is an interaction between the learner and other learners, between what the learner brings to the learning environment as well as what he or she is experiencing. The instructor is attuned to the individual learning styles and context; the interactive learning between the learners and the other learners within the setting; considering what each learner brings to the educational development; to the aspects of science being taught; and where new strategies of understanding and options can be generated.

The next section presents the theme of Diversity as a Source of Learning as part of the Context of the NRLI Learning Experience.

Diversity as a Source of Learning (How to Sing with a Different Choir)

An earlier evaluation of NRLI discussed the tremendous importance of diversity to the success of the program (Greene, 2001). Diversity is defined in the broadest and richest of terms and as an essential source of learning. Identified as an emerging theme, diversity in this particular context meant had numerous facets, including:

- Mixture of gender, age, ethnicity, and religious backgrounds and preferences.
- Various affiliations from the public, private, and non-profit sectors.
Different type of roles of each participant, from directors to public affairs officers to biologists to educators to Presidential Management Fellows.

Broad range of expertise, from those with five years of experience in the profession to those with 30 years of experience.

Broad range of personal or other professional expertise, from those who are Peace Corps volunteers to those who serve in their communities in various capacities.

Different perspectives and ways of understanding very complex issues, including how other professionals approach and manage these complex issues. Moreover, using assessment tools, such as the Myers Briggs Type Indicator, as well as case studies to demonstrate the differences in problem-solving approaches used by individual professionals.

Diversity in this sense includes the more traditional aspects of gender, age, race, and ethnicity as well non-traditional aspects: variation in professional years of experience; types of positions from those who supervise people and those who do not; variation in volunteer experience and international experience; and the diversity of the participants with respect to their affiliation. Diversity represents a broad range of: natural resources and environmental professionals including directors, public affairs officers, biologists, educators, regulators, and Presidential Management Fellows; a range of expertise from five years of experience to those with 30 years of professional experience; personal or other professional expertise; the different contextual factors with which professionals work; and the different perspectives and ways of understanding very complex issues, including how other professionals approach and manage these complex issues.

The expectation is that each January cohort of participants is a diverse mix of individuals from the public sector, including federal, state, county, and local government; the private sector, including business and industry, consultants and landowners; and the non-profit sector, including education, conservation and environmental groups, and community leaders. Within each sector, the intention is to increase the diversity in affiliation a bit further. During the recruitment and application process, for example, an effort is made to recruit from various federal agencies (i.e., U.S. Army Corps of Engineers [USACE], U.S. Forest
Service ([USFS], National Oceanic and Atmospheric Administration [NOAA], Federal Highways Administration [FHWA], and U.S. Fish & Wildlife Service [USFWS]). Even though applications may not come from all five agencies, the intention is to recruit from them to establish as broad a base of affiliations as possible. The recruitment process targets local, county, state agencies and organizations, and the private and non-profit sector.

The diversity in perspectives as well as in personal and professional experiences is crucial to providing a challenging but safe learning environment as the participants learn and problem-solve together. This particular context allows them to get to know their peers from across the state and from multiple agencies and organizations. It also fosters and develops new working relationships and partnerships that many participants hope will assist them in achieving their agency or organization’s mission.

For Joan, one value of her experience was learning about the various perspectives that different participants held about natural resource and environmental issues; it was an opportunity to understand their rationale and their way of thinking.

Since being in NRLI, being able to think, really think, about where somebody else is coming from and how they are seeing the issues were some of the most meaningful and useful lessons for me. Not how you think someone should see the issues, but really try to get at how they do so that everybody understands why you are at the table or why you are concerned or what is important to you.

For Kate, the diversity of the institute added an element of challenge to her overall learning experience and the level of interaction.

Meeting people from different backgrounds within the natural resources and environmental profession was awesome. The learning experience challenged me in ways I had not been and including interacting with people who have different opinions and ideas than I do. Developing working relationships and learning to lead effectively – in order to more fully understand the various aspects of natural resources and environmental issues is crucial to me and my role.

Ensuring a broad range of representation from the public, private, and non-profit sectors of natural resources and environmental leadership provides diversity in perspectives as well as in personal and professional experiences. This is a crucial learning aspect:
providing a challenging but safe learning environment as the participants learn and problem-solve together. This particular context allows them to get to know their peers from across the state and from multiple agencies and organizations. It also fosters and develops new working relationships and partnerships that many participants intend to use to assist them in achieving their agency or organization’s mission and the larger goal of sustaining resources.

The sessions are typically several days of intense instructional learning that encourage personal development through intrapersonal reflection and interpersonal development through group and inter-organizational interaction. The learning environment places people with different perspectives together to understand how to work more effectively together using collaborative approaches to problem solving.

Going beyond Republicans and Democrats, Methodists and Baptists Kind of Thing

During the leadership experience, assessment tools, such as the Myers Briggs Type Indicator (MBTI) Step II, as well as case studies demonstrated the differences in problem-solving approaches individual professionals employ by measuring preferences. The MBTI Step II assessment incorporates both Type Theory of Myers and Briggs and Temperament Theory of Kiersey and Bates. For example, the Sensing (S) and Intuitive (N) mental preferences Myers and Briggs extrapolated from Jung’s typological theories relate to how information is processed: Sensors (S) prefer to process information by its details before considering the larger picture while Intuitives (N) prefer to process information from a global picture before considering the details (Knowles et al., 2005). Kiersey and Bates (1984) reduced the 16 types developed by Myers and Briggs to the four temperaments (SP, SJ, NT, and NF), reflecting preferences in how information is gathered and utilized.

Randy was genuinely surprised at how different individuals approach problem solving and everyday learning activities. During his initial NRLI session, his cohort, as other cohorts before him and since then, participated in a Myers Briggs Type Indicator, an instrument designed to facilitate self-awareness and awareness about others. Based on Jungian theories of primary ways individuals differed from one another in thinking and acting, Myers labeled these differences preferences. The description of mental preferences

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Myers and Briggs extrapolated from Jung’s typological theories, in part related to how people perceive or take in information, astonished Randy. His clear preference for taking in information was the Sensing (S) perception, viewing information in the here and now, the details as clear and tangible. In contrast, those who prefer the Intuition (N) perception process information as abstract concept and its possibility for the future. Understanding how Intuitives prefer to process information gave Randy more insight into how to work with people who have this preference. Randy described his astonishment:

I learned a lot about me and in learning about myself, I was learning how different we are, even if we come from a similar educational background. I was astounded during our early exercises as to how people could look at the same object and see widely different things. What a revelation at how differently people look at the same object [sensing and intuitive types]. I always knew there were Republicans and Democrats, Methodists and Baptists kind of thing but this was a different dimension.

Based on the 1987 work of Wood, Huitt (1992) stated that a strategy for problem solving is limited in use without having a knowledge base about the problem or issues, and without the development of critical thinking and communication skills to identify and implement solutions. In order to take advantage of a wider knowledge base, Huitt (1992) related a problem-solving process to Type and Temperament, focusing on important individual differences and preferences for data gathering and information processing. Analyzing specific techniques for use during a problem-solving and decision-making process, Huitt posits that facilitators and instructors can encourage individual differences and preferences for problem solving. For example, Huitt references the 1982 work of Whimbey and Lochhead, which demonstrated that verbalizing one’s thinking process while someone else listens and critiques that process (the think-aloud technique) is one of the most valuable ways to improve problem solving and decision making. This technique advances the individual’s decision-making powers and contributes to the knowledge of the group.

In *Learning to Teach, Teaching to Learn*, Margret Bateson (2005) contends,

You are not what you know but what you are willing to learn. Willingness to learn demands respect for others across difference. Puzzling and even disturbing ideas are invitations to curiosity, and the greater the difference, the more there may be to be
learned….willingness to learn is a form of spirituality. It is a stance of humility because there is so much to be learned. (n.p.)

**Serendipitous Acts of Leadership Instruction**

Learning is a multidimensional phenomenon in part influenced by the mind and body connection (Merriam, 2008), and as a function of the central nervous system (Mackeracher, 2004). Shaped by their individual learning culture, family background, socio and economic level, and educational discipline influence the learner. Imbedded with prior knowledge and experiences, and influenced by current external factors such as health and general well-being, and the context of the learning environment, all add layers of complexity to the learning phenomenon.

Ann further identified the role that diversity plays in informal instruction: how hearing from people that have different ways of looking at things and just being in the room may facilitate very random acts of instruction that help make sense of people or situations, or simply the science but offered in a new way.

There is huge value in just bringing different people to the table. Moreover, you as [the facilitator of that learning environment] may not be able to orchestrate all of that in an instructional format, but just the act of bringing together can actually create some really teachable moments. For the most part, agencies train within their agencies [they sing with their own choir]. I believe leadership development can hold value for those individuals or organizations that predominantly work in the same agency and do most of their training within the same agency. Getting outside the agency and into a different arena with others, collaborating on ideas and experiences would be very beneficial for these people.

Melody echoes Ann’s appreciation for the value of learning from other professionals who represented the different aspects of natural resource and environmental management and research. The learning outcomes were not simply from the instructional materials but also came from the stories they told about their own experiences on the job or in working with other groups. Melody in particular learned from the kinds of questions other professionals raised during the sessions, from the debriefing sessions, and the ongoing discussions that resulted after sessions.
There was richness in having so many professionals from different aspects of natural resources, in listening to their different perspectives, and the descriptions of what they were dealing with, their struggles. That was extremely valuable to me.

As someone who was not an expert in environmental policy, Melody had an opportunity to learn about the ways she could contribute in implementing sustainable ideas or supporting those who were implementing those ideas.

Learning transactions are in themselves multifaceted both between instructor and learner and learner-to-learner. A characteristic of program design is to attend to some of the internal and external factors in order to influence learning that meets programmatic outcomes at the individual, organizational, and societal level (Caffarella, 2002; Knowles et al., 2005). An aspect of the multidimensional nature of learning that is not clear is how learners influence the learning situation through their differences and what they contribute to the learning process. How do instructors and facilitators of learning use individual differences to affect the overall learning environment, in particular to achieve the designated learning outcomes and growth in individuals, organizations, and society? Actually structuring a learning environment where the participants can share their perspectives results in teaching one another, and results in informal instruction of other leaders to one another. This is an area that requires future research.

Educators and learning theorists recognize that adult learners are not homogenous. In fact, research has focused both on categorizing the broad differences in adult learners in addition to how individual differences affect adult learning (Brookfield, 1986; Knowles, 1990). A major premise of research on individual differences is aptitude-by-treatment interaction; by adapting instruction to accommodate learner differences, there is a greater chance of achieving the learning goals (Knowles et al., 2005). For example, Jonassen and Grabowski (as cited in Knowles et al., 2005), categorized individual learner differences as cognitive, personality, and prior knowledge:

Cognitive differences (general and primary mental abilities, cognitive controls and styles for information gathering and organizing, and learning style preferences),
Personality differences (attention and engagement styles, and expectancy and incentive styles),

Prior knowledge (prior knowledge, experiences, and structural knowledge). (p. 154)

Understanding how adults learn and what influences the multidimensional learning process helps instructors and facilitators structure relevant learning activities that resonate with the learner and the intent of achieving programmatic goals (Merriam, 2008). For example, the core principles of the andragogy learning model can be applied to fit the adult learner’s cognitive abilities and learning style preferences concerning orientation to learning, ensure what each learner needs to know and why, and how they will learn the subject matter.

Second, an assessment of individual characteristics helps tailor the andragogy principles towards the needs of a particular learning group. For instance, if a group of learners prefers less control of their learning environment, one would provide clear structure and organization of materials including external guidance. Lastly, one must clearly identify the goals and purpose of the learning experience in order to use the andragogy principles to help expand the learning experience. For instance, if a group of learners is intent on making a societal change, additional attention toward the self-concept of the learner and in developing self-directedness seems appropriate.

**Bridging the Gap Between “Policy Abstractification and Practical Implementer People”**

For Ann, the diversity of her cohort group was the most meaningful learning experience for her. In particular, she enjoyed individuals from the group with international experience and perspective, as well as a participant who attended from another state.

What was a meaningful experience to me were the people in our class from other countries and others parts of the United States. I really valued that a lot. I don’t know how often you have that opportunity, but I really think it’s really valuable when you do. All of that adds to the diversity of the class, including our different ages. Diversity in the class added a completely different perspective to what we learned.

Ann also valued the diverse location of the sessions, the sequential focus of the various sessions, and the unique instructors who influenced different aspects of the learning process between human and natural systems. She especially appreciated those learning
sessions that created a bridge between the gap of “policy abstractification and practical implementer people” (Grandin, 2008, n.p.). For example, at a May session in Washington D.C., Dr. Temple Grandin joined the session.

Ann shares the value of the Washington, D.C. session:

The D.C. trip was very valuable to me. One of the most interesting take-aways was Dr. Temple Grandin. She spoke to our group about how to monitor and be sensitive to conditions in our environment. She was very non-bureaucratic, totally outside of everything that has been in our experience. I value this similar theme though from a very different perspective.

A professor at Colorado State University, Dr. Grandin is highly regarded for moving beyond the constraints of her autism and the social biases associated with this development disorder, to becoming renown and an extremely accomplished individual. One of the few in the world who is a scholar and designer of humane and practical livestock-handling equipment, Grandin successfully challenged previous methods employed by slaughterhouses. Thus, Temple Grandin has been an inspiration to those in the community with autism as well as those who advocate for humane animal welfare. She has designed the facilities in which half the cattle in the United States are handled, consulting for firms such as Burger King, McDonald’s, Swift, and others (Grandin, 2010).

In Peripheral Visions, Margret Bateson (1994) explains how in learning from experience, “each person is calibrated by the experience, almost like a measuring instrument for difference, so discomfort is informative and offers a starting point for new understanding” (p. 17). In the learning situation that is NRLI, the participants often do not know each other as they are calibrated by their experiences. Challenged by differences as well as similarities, by dualistic thinking, multiplistic thinking, and integrated thinking, all different ways of understanding the world (and self), diversity as a source of learning is informative as it reframes our understanding of what we think we know and of what we know more clearly.

The next section presents the theme of Credibility of Institute Leaders and Others as part of the Context of the NRLI Learning Experience.
Credibility of Institute Leaders and Others

A surprising theme that emerged was the value placed on the experience and ability of the Institute’s leadership to provide process design and management services for agencies and organizations faced with contentious environmental issues. For example, a situation assessment conducted on recreational use of the Chattooga River was completed for the U.S. Forest Service (USFS) in North Carolina, Georgia, and South Carolina, the administrative seat for the project area. Designated a Wild and Scenic River in 1974 for its outstanding remarkable fish, wildlife, recreation, scenic, and historic values along the 15,432-acre corridor of its upper reaches, these sections of the river were closed to boating above the Highway 28 Bridge. In 2004, the whitewater boating community appealed the USFS Forest Management Plan that maintained the geographic closure to boaters. The primary goal of the situation assessment was to assess the perceptions of river users about whether a collaborative approach could help tri-state leadership of the USFS develop decisions governing recreational use of the Chattooga River. Subsequently, the situation assessment assisted in the design of stakeholder workshops for generating and evaluating alternatives for recreational use on the river.

In addition to providing professional support, the contractual experiences in process design and management resulted in the development of new instructional materials and case studies as the experience and expertise level of the Institute leadership expanded. For example, an instructional video was developed based on a three-year facilitation of a hydropower relicensing process that spanned two river systems titled, *When Talk Works: Building Consensus on the Nantahala*. The video provided instructional context that exemplified and communicated about the phases and steps of a collaborative decision-making process. As an instructional tool based on actual inter-organizational work, it also resulted in a blend of theory and practice, predominantly about adult learning strategies, leadership, and the value of environmental conflict resolution.
According to Frank, the Institute leadership has “street cred” gained by actually applying the principles and skills taught in the Institute to complex and contentious inter-organizational situations.

Well, I saw this person facilitating a meeting and it was cool. The facilitator brought out some of the same issues we had to deal with and acted competent. We were initiating a watershed plan through another state agency and some stakeholders had very specific issues that the facilitator helped us address.

The early founders envisioned the Institute as a leadership development program. As the Institute matured, its mission expanded from education to both education (leadership development) and support (environmental decision-making) of a cadre of leaders committed to seeking consensus on issues affecting the sustainable development of North Carolina’s natural resources and the quality of the environment (Levi, 1999). Subsequently, the Environmental Decision-Making program grew out of the complex practicum work of several participants and by word of mouth that the Institute could provide help to facilitate controversial issues. With experience in both successful and unsuccessful management of environmental decision-making processes, the NRLI grew as a capacity-building model for collaborative decision-making in North Carolina.

Randy illustrates this point by discussing the type of confrontational public meetings his division had held and the assistance the Institute provided his agency by demonstrating management of publicly held meetings.

Those lessons we learned from you all were very helpful; we put them into practice within our division. Learning specific and applicable skills from someone who has facilitated and designed productive public meetings was very helpful. It was important to hear from people who had been in contentious meetings and tried different things, a major benefit of attending NRLI. Although there is always going to be rancor associated with our processes, we have minimized it, slowed it down, and gotten the train under control to what it used to be. We are learning from ourselves so to speak. We do not do some of the things that we were unintentionally and ignorantly doing wrong. My participation in the institute and that of my staff has been very valuable.
The importance of credibility extended to other instructors at the Institute, often practitioners in the field of environmental dispute resolution or natural resources and environmental professionals who have spent time working directly on collaborative decision-making projects or researching collaboration in environmental decision-making. Furthermore, NRLI Fellows who have gone on to develop as practitioners or who employ collaborative practices within their work and organizations have lent credibility to the Institute and to their profession. During the interviews for this study, several participants responded that a motivating factor for applying to NRLI resulted directly from watching a NRLI Fellow apply what he or she had learned to a contentious situation and resulted in positive outcomes for those in attendance.

For example, Joan shared that she was in a meeting with a NRLI Fellow who facilitated a group and helped them develop an agreement about a particular issue.

We were stuck during this interagency team effort. This person introduced us to a tool of writing things down, then putting up the things we'd written on a board and we listened [to each other], and as a result, moved forward from our standstill. When I asked where they had learned to do this, the person said NRLI.

Kate shared a similar story. While attending a Stormwater Phase II workshop, Kate watched a Fellow of the Institute demonstrate several facilitation techniques.

I went up to facilitator afterwards and said, “You are using facilitation techniques I’m not familiar with. Where did you learn your skills?” That is when I learned he had participated in the institute several years back.

Professional development and peer-to-peer learning opportunities enhanced the trustworthiness of the Institute leadership, other faculty, and instructors. For example, the Institute leadership has been associated for a number of years with other environmental conflict resolution professionals through a growing profession, by membership in professional organizations, or service to the profession. Professional organizations like the Community Based Collaborative Research Consortium, the University Network for Collaborative Governance (Policy Consensus Initiative), the Environment and Public Policy Section of the Association of Conflict Resolution, and the U.S. Institute for Environmental
Conflict Resolution have encouraged standards of best practice and peer-to-peer learning through national conferences, trainings, research, multi-party facilitations, and new developments in practice.

Learners want instructors (and mentors) that have real life experiences, not simply expertise. The participants wanted to learn not simply from their successes but also from the processes that did not meet the intended purpose of the project. From theory to practice, and practice back to theory, what was meaningful to the participants was recognizing the different ways of working with a disparate group of stakeholders. Direct observation of negotiation and process management skills modeled by instructors and other Fellows, followed by orchestrated application of similar skills during role-plays and practicum projects engendered an understanding of these processes. The sharing of prior learning experiences by the instructors, guest speakers, and the participants themselves added significance and relevance to the learning experience and increased the participants’ motivation in the practicum projects.

One plausible explanation for the value placed on the experience and ability of the Institute’s leadership can be found in John Dewey’s (1998) four concepts of effective instruction (Knowles et al., 2005). Experience is the starting point of Dewey’s learning system, and pragmatism is its very core. A firm believer in the unity between theory and practice, Dewey believe in the contribution of practice to theory, and theory to practice, a core teaching principle of the Institute leadership. The challenge of any learning system is creating - providing experiences that contribute to subsequent learning experiences and intellectual growth. This is Dewey’s principle of continuity, meaning the learning experience takes up something from the one before, incorporating that something into the experience that will come after it. Programming leadership development is certainly an exemplification of the principle of continuity.

Other key concepts of Dewey’s learning system include democratic learning and interaction (Knowles et al., 2005). Democratic learning opportunities are participatory in nature, promoting as Dewey (1998) would say, “a better quality of human experience, one
which is more widely accessible and enjoyed, than nondemocratic and antidemocratic forms of social life” (p. 25). Interaction as a learning concept is considered a chief principle of effective teaching, emphasizing the external conditions (what the educator controls) and the internal conditions (what the learner controls). “The environment is whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience to be had” (Dewey, 1998, p. 42). An experience is always a transaction between the individual and the environment, whether that environment is another person, a book, or a discussion about the learning experience. “Educational value is not abstract; it must fit the needs of the learner” (Dewey, 1998, p. 45). What fit the needs of the institute learners was learning from someone tested by fire - tested by experience - who could share the value of that experience with others.

Brookfield (1986), in his publication of *Understanding and Facilitating Adult Learning*, offers similar principles of effective practice in the learning environment. The six principles he listed include:

1. Participation in learning is voluntary (the decision to learn belongs to the learner).

2. Effective practice is characterized by respect among participants for each other’s self worth (a sense of self-worth is maintained even during times of feedback and criticism), uniqueness, and separateness.

3. Facilitation is collaborative (leadership and facilitation roles can be assumed by different group members, at different times, and for different purposes, and can be a constant renegotiation of activities and priorities).

4. Praxis, in the spirit of Paulo Freire, is at the heart of effective facilitation [and practice]. There is a forum for a continual process of activity, reflection upon activity, collaborative analysis of activity, new activity, further reflection, and so on…the alternating and continuous engagement in exploration, action, and reflection.

5. Foster critical reflection of the supposed givens (perspective transformations).

6. Nurture self-direction, proactivity, and the continuous re-creation of self. (p. 9)
Knowles and colleagues (2005) remind educators that “it is not sufficient for adult education programs to satisfy the identified learning needs of individuals, organizations, and society. Instead, educators should seek to help adult learners transform their very way of thinking about themselves and their world” (p. 105). Of Brookfield’s six listed principles, praxis is not only at the heart of effective facilitation, but also at the heart of continuous recreation, of characterizing the concept of respect prominent in principle #2, and of perspective transformation. Said Brookfield (1986),

Significant personal learning,” “entails fundamental change in learners and leads them to redefine and reinterpret their personal, social, and occupational worlds. In the process, adults may come to explore affective, cognitive, and psychomotor domains that they previously had not perceived as relevant to themselves. (p. 214)

The next section presents the theme of Learning, Engaged, and Applying! as part of the Context of the NRLI Learning Experience.

**Learning, Engaged, and Applying!**

One of the fundamental learning principles advocated by Knowles (1990; Knowles et al., 2005), Brookfield (1986), and Mackeracher (2009) is recognizing that adult learners like to engage in learning activities that will have immediate and pragmatic application in their lives. In fact, adult learners are often unwilling to engage in formal learning activities that do not have relevance to their lives, or that they do not perceive have relevance, given the limitations of time and resources. Because the Institute requires an intensive time commitment of 18 months, ensuring relevant learning activities early on and building rapport is crucial in supporting the four learning concepts advocated by Dewey (1998): the principles of experience, participatory decision-making, interaction, and continuity for ongoing participation and motivation. For the most part, those who applied to the Institute wanted to grow personally and professionally in terms of natural resources and environmental leadership. Several participants discussed the timing of their participation in the NRLI and the immediate application of the concepts and skills learned to actual situations between their organization and other organizations and communities.
When a colleague asked Glenn to consider applying to the Institute, he responded that the time commitment would be a challenge. However, during Glenn’s participation in a facilitative process for environmental decision-making, he was able to see the direct application of the NRLI.

Immediately I was learning! Moreover, immediately, I was applying what I was learning. I was going through a large stakeholder process at the time I was going through the NRLI Program. Once you have seen some of the techniques applied and how it can benefit the communications amongst a diverse group of people, it really got me interested.

Following each of the workshop sessions, the participants return to their working environment for real world application of their learning. They are not only engaged in direct application throughout the sessions but in their practice at work and their leadership project, the practicum. The value of immediate and direct application of learning is often essential for participants who are involved in current inter-organizational or stakeholder projects.

James had just begun to work in the natural resources and environmental profession when he applied to the Institute, creating a perfect opportunity for him to combine many different learning aspects.

I could immediately connect to a network of people to learn a broader range of issues than the ones my own organization might focus on, and grow in my own area of leadership…NRLI was like a case study, you know, and every time I would learn something and I would go, “I have to apply it.”

**Learning as a Product, Function, and Process**

“Learning can be intentional, resulting from deliberative inquiry as well as incidental, the by-product of an intentional learning activity or mindless activity according” (Mezirow, 2000, p. 5). Learning, as a concept or theory, emphasizes the person in whom the change occurs or is expected to occur (Knowles et al., 2005). Learning can be defined by three general uses such as (Smith, 1983):

- a product, in the acquisition and mastery of what is known,
- a function, through an organized, intentional process of testing ideas relevant to problems, and
Another explanation of learning that resembled Smith’s (1983) characterizations was based on research of 90 Swedish adults and young people with varying levels of formal education. The intent of the research was to understand the learners’ perceptions about what they believed learning was all about. Based on the research conducted by Säljö (1979a), the learners characterized learning as:

- acquiring information, knowing a lot by increasing one’s knowledge.
- memorizing and storing information for later use or reproduction
- acquisition and retention of facts, principles, skills, methods which can be used personally or professionally
- making sense or abstraction of meaning, relating parts of subject matter to each other and the real world; and
- interpretative of and understanding of reality through ending by reinterpreting prior knowledge or experiences.

The first three learning concepts resemble learning as a product. These three concepts describe learning as something external to the learner, perhaps ready-made materials that can be brought in from the outside to the inside. There is an overlap however, with the second and third concept, both of which resemble learning as a function. The second and third concept described learning that can be used later from memory or recall of a prior experience, or more immediately; for instance, in the application of methods. The last two concepts look more toward the internal world of the learner, the personal aspect of learning.

Learning is a process, a way to experience and understand the world. Finally, learning can be understood as a process associated with all five concepts of uses, a fundamental and natural element that helps make sense of life’s experiences and gives meaning to whatever sense is made (Mackeracher, 2009). Learning is a process that uses prior interpretation to construe a new or revised interpretation of the meaning of one’s experience as a guide to future action (Mezirow, 2000).
**Dimensions of Context Transfer: The Temporal, the Near and Far, the Generative**

In the learning examples provided by Glenn and James, dimensions of context transfer are described as a temporal dimension, a near transfer, a far transfer, and a generative transfer dimension (Bloom, 2010; Mestre, 2003). For instance, there is the temporal nature of context (Bloom, 2010): the past, present, and future. In Glenn’s story, there are memories or prior knowledge, experiences, or inquiries that come from the past to the present. There is his connection during the workshop about the value of communication skills in a stakeholder process; again, a temporal connection. Glenn plans to apply the knowledge he gained in techniques and communication toward a far transfer, a future stakeholder meeting in a somewhat related context in which he will be participating.

There was immediacy of the learning for Glenn and James; Glenn was very pleased that up front, he was acquiring information while having the ability to test ideas in a simulated context and clarify that experience in a near transfer. Likewise, James found an instantaneous connection through the new network he was building. In a near transfer, he began to develop his understanding of North Carolina, the environmental issues the state faced, and what was being done to resolve those issues. In a generative transfer, James began to use the knowledge or procedures he was learning to develop his leadership abilities in novel contexts.

Relevancy, as a concept, also describes why the learning was immediate for Glenn and James. Both made connections between the current learning activities and their present and future needs (Mackeracher, 2009) by solving problems in their lives, in receiving internal payoffs, or both (Knowles et al., 2005). They were ready to learn and motivated to learn, in particular as the learning environment they were participating in supported their ability to learn.

Transfer of learning has long emphasized classical behavioral learning theory or the perception of learning as a process of controlling, changing, or shaping behavior (Knowles et al., 2005), including the expectation that what will transfer will be specified in terms of observable changes in knowledge, skills, and attitudes (Broad & Newstrom, 1992). Based on
earlier work of behavioral theorists, Thorndike and Woodworth (1901) explored the transfer of practice or the influence of improvement in one mental function on the efficiency of another mental function. There is an assumption that learning would transfer from one context to another, in particular if the learning task and transfer task were similar. The concept is not without controversy. Recent conferences and a swell of literature have explored the contested and multidimensional nature of transfer of learning (Caffarella, 2002; Catterall, 2002; Lobato, 2006; Mestre, 2003; Ottoson, 1995, 1997).

Mestre (2003) conveyed the operational definition used during the 2020 National Science Foundation workshop on transfer of learning as broadly meaning the ability to apply knowledge or procedures learned in one context to new contexts. The workshop definition is distinguished by the following dimensions of the transfer (Bloom, 2010; Mestre, 2003), as:

- Near transfer – transfer of the knowledge or procedures is from the given setting to a closely related situation.
- Far transfer – transfer of knowledge or procedures is to a different context (one that overlaps or is related or distally related) in addition to using the initial knowledge or procedures to solve novel problems that share a common structure with the knowledge or procedure initially acquired.
- Generative transfer – transfer of knowledge or procedures is the ability of the learner to come up with novel instances or solutions.

The generative characterization of transfer is particularly important in a service-based, fast-paced problem-solving, and knowledge-based society (Mestre, 2003). Suffice it to say, when the learners are required to process information for meaning, where learning is a process similar to the 4th and 5th learning concept identified by Säljö (1979a), ([4] making sense or abstraction of meaning, relating parts of subject matter to each other and the real world; and [5] interpretative of and understanding of reality through ending by reinterpreting prior knowledge or experiences), there is a larger influence on transfer of learning. The “research suggests that transfer is enhanced when the learner abstracts the deep principles underlying the knowledge being learned, and that abstraction is facilitated by opportunities to
experience concepts and principles in multiple contexts” (Mestre, 2003, p. 6). These findings, says Mestre (2003) are consistent with the body of research based on the work of Auble and Franks, Bartlett, Slamecka and Graf, and Wittrock, that say “effort after meaning” (or “generative processing”) facilitates learning (Mestre, 2003). Catterall (2002) suggests that there may be a larger view for transfer, for preparing future learners, for developing competencies than simply measuring immediate tests of application.

Transfer of learning in the current discussion presented by Glenn and James indicates that both were able to apply aspects of their learning from the institute directly in their work settings; for Glenn, stakeholder processes and communication; and for James, leadership and building relationships. In fact, both continue, in 2010, to make use of the skills and knowledge gained from the institute, in particular, in their continued work with inter-organizational efforts. In the section that presents the inter-organizational work of the participants in more detail, there will be a discussion using the near transfer, far transfer, generative transfer, and factors that facilitate transfer.

**Summary: Context of the NRLI Learning Experience**

“The human condition,” according to Mezirow (2000), “may best be understood as a continuous effort to negotiate contested meanings” (p. 1). Context serves as the center for that action; as social beings, a vast majority, if not all, of what we learn is situated in our social contexts (Bloom, 2010). Baptiste (2001) concluded that context is a dialectic union of personal and external forces; a dynamic notion used by the learner to make sense of and manipulate their learning content.

“Learning in context is paying attention to the interaction and intersection among people, tools, and context” (Hansman, 2001, p. 44). The idea that context is central to learning is promoted within social learning models that suggest learning is situated in and shaped by the context but also by the culture and the tools that mediate the learning. Situational learning is an umbrella term for a number of methodologies including simulations, case studies, scenario-based learning, and online role-plays which present learners (working individually or in groups) with contexts involving concrete, real life
problems (Davenport & Brown, 2007). To solve the problems, the participants make decisions and deal with the consequences, using content or learning aids to inform decision-making. Additional examples of tools used for situational learning include telling stories, reflection during learning activities, providing many different opportunities, and engaging in practicum (Mackeracher, 2009).

Context refers to placing people and action at a point in time and space as a way to understand what they say and do. Without context and its rich clues for interpretation, it is difficult to decipher or understand the experiences presented in a setting or situation. Lightfoot posits, “We have no idea how to decipher or decode an action, a gesture, a conversation, or an exclamation unless we see it embedded in context” (as cited in Patton, 2002, p. 63).

Context-based adult learning matters since learning is inherently social in nature (Hansman, 2001; Hondale, 1999). Context matters in how to plan and design programs that will shape the learning experience, including knowledge about the people, the organizations, and the wider external factors (Caffarella, 2002). Context matters when planning for change from one context to another, when the learner intends to apply what has been learned from one situation to another situation. In this study, context refers to how and where the learning is situated, the tools and cultural aspects that mediate the learning, and the relative matters of the program design that facilitate learning, both in the immediate and long-term application of the learning experience.

Lastly, one idea that has not been explored as a means to describe transfer is the idea of “context training” introduced by Lefkoe, a process of context shifting and perspective transformation (Knowles et al., 2005). Focused predominantly on business and industry audiences, Lefkoe posits that participants who create a new context for themselves and a way for defining their role at work or in social situations take it upon themselves to do and learn what is required to operate within that new context. The learning environment involves having the participant create a new context before participating in skill building or training.
The assumption is that if you are successful in changing adults’ perceptions of the world in which they live, you will not need to teach them to acquire new skills (Knowles et al., 2005).

**The Practicum: Planning for Change in Inter-Organizations**

Frequently cited vital elements of adult education and the learning experience are participation or collaboration and the critical reflection that fosters learning (Brookfield, 1986). Another essential concept of the learning experience is the opportunity for the learner to practice the knowledge, procedures, or skills learned. “It’s not what the teacher does that constitutes a learning experience; it is what the learner does” (Boone, Safrit & Jones, 2002, p. 58).

**Distinguishing the NRLI Practicum Framework**

The practicum has been a central component of the NRLI since the founding of the institute in 1994 at North Carolina State University. In order to fulfill the requirements of the leadership development experience, each participant or team of participants develops a collaborative project, an applied learning project, for approximately one year. Working in groups or individually, participants apply the skills and information gained in the classroom to situations they faced at work, in their organizations, or in their communities.

The primary rationale of the practicum is two-fold. Foremost, the practicum in the NRLI learning experience serves as a mechanism for transfer of learning into a real world context (Bloom, 2010; Broad & Newstrom, 1992; Caffarella, 2002; Mestre, 2003). Structured around a written “planning for change” model, the participants, as working professionals, apply the knowledge or procedures learned in one context (the leadership development institute) to a new context (the participant’s community, organization, or multiple organizations). After approximately one year, changes documented in the practicum report account for the inter-organizational change efforts. In this discussion of findings, the NRLI practicum is compared to the traditional use and form of the practicum, based on a limited examination of the practicum literature. This discussion is followed with an analysis of the outcomes that resulted from several practicums.
The practicum has been a central component in higher education as a way to prepare students for the field of work (Ryan, Toohey, & Hughes, 1996). Based on the review by Ryan and colleagues, (1996), students valued the practicum experience when it added real value to the employer and the work situation, and when they, the students, could participate in project work. Contributing factors to the overall success of academic practicums have included a structured and supervised experience. Historically, there have been two predominate ways to think about the purpose of the practicum:

1. Link theory with practice as it provides the student a structured and supervised learning experience to apply and test knowledge learned – a traditional practicum model introduced by Price (Ryan et al., 1996).

2. Explore problems and issues that test related theory and knowledge – a reflective practicum model introduced by Schön (Ryan et al., 1996; Wilson & I ‘Anson, 2006).

In the literature review conducted by Ryan and colleagues (1996), the practicum can contribute to the learning experience and is considered a valuable tool for continued practice in a learning experience, though there are limitations associated with the practicum. The practicum appears in various forms: as field experiences, cooperative education, internships, sandwiched toward the end of the academic learning, or as a microteaching event to reduce complexity for the learner (Ryan et al., 1996; Wilson & I’Anson, 2006).

**Common Elements of the Practicums**

- Rationale for the practicum and its value to educational programs
- Relationship between the learning outcomes of the program and the practicum
- Placement of the practicum within the program (i.e., at the end of the program or schedule microteaching throughout the educational activity)

While the purpose of the NRLI practicum is similar to the Price model, there are times when participants have chosen to explore issues testing the knowledge gained.
Distinctions of the NRLI Practicum Model

There are noted differences between the Price and Schön practicum models described in the literature of Ryan and colleagues (1996) and Wilson & I’Anson (2006), and the NRLI model.

1. Working professionals, as opposed to students, participate in the practicum.
2. Working professionals bring their experience and expertise into the learning environment, where they test and modify their own knowledge system with the curriculum and theory being taught. While non-traditional students may bring their working experience into the academic setting, students who have not entered the work force will most likely lack a professional background or experience.
3. Working professionals apply new concepts, insights, and skills to an actual situation within their organization or community using the semi-structured planning for change model (a written plan, that once approved, outlines an approach for creating change).
4. The NRLI practicum is mentored and coached rather than supervised as the participants utilize or refine the approach they developed.
5. There is a strong inter-relationship between the learning outcomes of the institute and the practicum, as new knowledge is applied to the real world situations. Learning outcomes are:
   - Apply and test new knowledge and concepts to a real setting (role-plays during the institute provide practical settings to apply and test ideas)
   - Progressively include development of self and the development of the competencies in leadership, collaborative decision-making, negotiation, or process management
   - Gain insight into the professional practice of other peers and networks
   - Evaluate progress through critical reflection and analysis, identifying areas where further personal and professional development is needed

Since each NRLI practicum is a real world situation, standard results are not the measure of success; rather, the projects are evaluated based on the initial goals desired and
the self-report changes documented by the participants, including immediate and long-term outcomes and overall impacts. The practicums are then seen as a range of inter-related experiences that connect to the curriculum on collaborative decision-making.

Applying knowledge or procedures learned in one context (the leadership development institute) to a new context (the participant’s community, organization, or multiple organizations) broadly refers to transfer of learning (Bloom, 2010; Broad & Newstrom, 1992; Caffarella, 2002; Mestre, 2003). Projects range in size from natural resources councils, to communities or organizations, to the statewide level. The issues can range from developing a solid waste online database accessible to communities providing regulatory information and educational information to establishing a shorebird conservation working group in the Tennessee River Valley.

Experiential in nature, the practicum provides a way for the participant to take a leadership role in responding to a natural resource or environmental issue. Often there is an element of controversy and collaboration about the practicum, as the participants are asked to design a process that is conducive to exploring the issues with multiple interests and, where appropriate, integrate solutions for resolving the issue. Measurable progress is expected within a year, including identifiable tangible and intangible results. An achievable project is one that is within the participant’s sphere of influence (i.e., he or she is in a position to make or influence decisions about the process) and is within the participant’s scope of activities (i.e., is part of his or her job, volunteer activities, or current interests).

**Successful Aspects of the NRLI Practicum Model (Based on Participants’ Comments)**

Following are examples of aspects of a successful NRLI practicum.

1. Connects NRLI Fellows from one class to another in order to develop projects together, or continue to build a long-standing project, or build a new project from the effort of a previous project

2. Allows for simulation and development of skills that might not have been acquired or practiced otherwise in a real world situation
3. Gain knowledge and appreciation about the practice of other organizations, how they problem solve issues and concerns

4. Participating in the institute (during role-plays) increases self-confidence in order to push the envelope for what is possible during the practicum

5. Allows continued development of interpersonal skills, both internal to one’s organization and in working with other organizations

6. Provides the practical piece to the components of the theoretical learning experience – the application of knowledge

7. Increased personal confidence in working with complex, multidisciplinary, and contentious issues, including willingness to work in a public arena with very contentious issues

8. Because of the educational component, internal colleagues are more willing to support effort and may leverage internal resources toward the project (legitimizes both internal and external collaborative efforts)

9. For most of the study participants, the practicum is one of the most important learning experiences of the institute; it provides relevance to the learning experience.

10. Confirms importance of process management in environmental decision-making and building of working relationships rather than simply focusing on substance

11. The structure and placement of the NRLI practicum is what Ryan and colleagues (1996) refer to as the extended single placement, a format that stands a greater chance for project completion.

12. The practicum report describes success stories and, where appropriate, impacts to the environment (e.g., setting aside acres of land for conservation purposes; meeting biological and non-biological objectives); the economy (e.g., providing hydropower to communities, resources for management options of private property; legislative changes); and society (e.g., assessing current public outreach and involvement strategies).
Limitations of the NRLI Practicum Model (Based on Participants’ Comments and Researcher’s Knowledge)

Following are limitations of the NRLI practicum model:

1. It is difficult to propose a project or work on project that is not within the scope of one’s job and responsibilities.

2. A relocation, new job responsibilities, or employment with a new organization can limit completion of the practicum.

3. Consultants are often limited in documenting narratives for the practicum report due to protection of proprietary data.

4. Practicums without challenges or multiple stakeholders are less likely to contribute to the overall learning experience.

5. Participants who do not engage in the review sessions and connect on a monthly basis with their mentors are less likely to fulfill the requirement of completing the practicum, including submitting the practicum report.

For the most part, the practicums occur in an inter-organizational context, representing the intricate connections across communities, organizations, and jurisdictions that manage, utilize, and benefit from natural resources and the environment (Gray, 1985, 1989). Building collaboration and consensus is critical, as no one organization can unilaterally solve the complex environmental issues (Westley, 1995). Within an inter-organizational context, policies, programs, and decisions for natural resources and the environment are unlikely to be understood, approved, and implemented unless there is a process of interpersonal influence involving key partners, individuals, and groups, both internal and external to the organization (Gray, 1985; Portugal & Yukl, 1994).

What Makes a Collaborative Successful: Examples from the Literature

The need for inter-organizational collaboration has been established (Feyerherm, 1994; Gray, 1989; Wondelleck & Yaffee, 2000). A number of features have been identified that make a collaborative successful (Addor et al., 2005; Feyerherm, 1994; Gray, 1989; Wondelleck & Yaffee, 2000; Westley, 1995), which include:
1. It is essential to define the problem and have a shared understanding of what the problem is (hence the need to identify the stakeholders earlier on in the process). However, processes are iterative as additional stakeholders surface to further define or enrich the definition of the problem.

2. There must be a willingness to negotiation and problem-solve together (mutual recognition for collaboration, recognition of the legitimacy of other stakeholders, and a legitimate convener (Gray, 1989).

3. There must be a determination of shared values

4. There must be dispersal of power among the stakeholders (in particular, sensitivity to those perceived as less powerful or with fewer resources and deference to final agency decision-making power)

5. There must be a level of support and commitment from the constituents’ organization

6. There must be shared resources to support the collaborative.

**What Makes a Collaborative Successful: Perspectives of the Participants**

1. Ensure an assessment is conducted that can help determine what the issues are and whether a collaborative is the right forum through which to respond to those issues.

2. Establish a clear purpose and need, one that helps potential stakeholders understand how they can contribute (e.g., resources in financial and human capital, ideas, expertise, process management skills).

3. Ensure shared responsibility is a core value of the collaborative such that all share in the rewards and the risks of the collaborative (though levels of degree will vary).

4. Provide training and opportunities for skills development to work with polarizing positions and to work in the public eye.

5. Insist on measurement of the successes, both the stories and the impacts to the socio-environ-economic systems (include limitations of the collaborative).

6. Maintain ongoing working relationships as agreements are implemented and transitioned to others who become part of the implementation team.
7. Develop internal structures that support and allow for inter-organizational effort.

8. Do not underestimate the value of listening first and then asking questions, whether working internally on behalf of the collaborative or externally. Do not underestimate the value of building trust whether working internally on behalf of the collaborative or externally, such that others want to take a risk with you.

9. Balance advocacy of one’s knowledge system with inquiry.

10. Ensure as much attention is provided to process management details as it is to deliberating the substantive nature of the issues.

11. Success in one collaborative can lead to additional collaborative efforts.

12. Leadership in a collaborative can evolve in multi-directions and roles: message leaders, directional leaders, the convener and facilitators as leaders, stakeholders as leaders. The key in leadership is to ensure everyone has a contributing role.

Analyzing the Inter-Organizational Practicums of NRLI

Using Westley’s (1995) classification of the origins of inter-organizational collaborations, three practicums were examined: a vision-led collaboration, a learning-led collaboration, and a planning-led collaborative. This framework assisted in discussing the strengths and vulnerabilities of three NRLI practicums. The greatest measure of success of the NRLI practicums is taking into account the cumulative role all of the practicums since 1995.

Westley (1995) gauges the origins of inter-organizational effort based on three structures: structures of signification (issue definition, stakeholder convening, direction setting), structures of mobilization (action mobilization and resource mobilization), and structures of legitimization (institutionalization of the collaboration, development of norms for interaction, terminology for expectations, rules for balance and productive participation). Westley classifies the origins of inter-organizational collaborations in three ways:

1. Vision-led collaborations or collaborations organized and inspired by a visionary. These often are associated with the activities of a visionary and supporters of that vision.
2. Learning-led collaborations or collaborations that spring from communities, citizens, or inter-university networks. These can take the form of a social movement, scientific consortia, and community forums.

3. Planning-led collaborations or collaborations mandated or required by government. These often take the form of task forces, roundtables, and committees.

Westley (1995) gauges the origins of inter-organizational effort based on three structures: structures of signification (issue definition, stakeholder convening, direction setting), structures of mobilization (action mobilization and resource mobilization), and structures of legitimization (institutionalization of the collaboration, development of norms for interaction, terminology for expectations, rules for balance, and rules for productive participation). Her classification system, briefly introduced, is used as a framework to begin to discuss the practicums, including the strengths and limitations of each origin type. Although each study participant responded to the question regarding how the practicum contributed to their learning experience, only three examples were presented using Westley’s classification system. The remaining practicums were presented as a narrative without an analysis of their origins, although key points that contribute to the success of collaboratives and future research were acknowledged.

**Vision-Led Collaborative**

An example of a vision-led collaborative was the creation of a conservation partnership that has been ongoing for several years. There is substantial literature about the role visionary leaders play in the success of organizations (Bass, 1990b; Kotter, 1995; Portugal & Yukl, 1994); however, little is understood about the role of visionary leaders in an inter-organizational context.

Luke began his story about the role his practicum played in his learning experience by discussing the outcomes his practicum had achieved. Clearly indicating how the practicum contributed to his learning experience, Luke also discussed how the practicum contributed to the mission of his organization and the mission of other organizations, stating his beliefs about why he thinks his practicum continues today.
My practicum created a conservation partnership that has resulted in a collaborative approach to landscape conservation in North Carolina. Several results include recovery numbers of an endangered species in several locations in the state and protection of more than 15,000 acres at a cost of over $50 million dollars of invested resources from multiple stakeholders. It is still alive and thriving and it will be there, because it still has a purpose beyond the initial recovery objective.

I would not have thought about the idea of forming this partnership without my participation in NRLI. My position initially had a discrete role. I could have kept doing that role, working towards an end state. It never occurred to me to pull together a group of stakeholders. Therefore, if I had not participated, there probably wouldn’t be a conservation partnership. And we wouldn’t have met a number of biological and non-biological objectives. Even though we’ve achieved one goal, we’re still moving forward because we realize that the state of the landscape is still very tenuous relative to development pressures so we’ve shifted our focus and now we’re working with a whole larger broad-base stakeholder group to ensure that we find that quality of life balance between the need for economic development, human space, and protection of natural resources.

For me, a good benchmark of a successful partnership has been to ask the question: if the individuals who first created it left, could it still survive? The answer is, if you have done your job of instilling enough institutional memory and the partnership still has a purpose, it will survive.

As Westley (1995) identifies, vision led collaboratives are initially strong in the structures of signification, such as issue identification and structures of mobilization. They bring together strategic action and resource mobilization, both in-kind capital as well as human and financial resources, and time. The difficulty that vision-led collaboratives face, according to Westley, is with structures of legitimization, particularly institutionalization of process or assurance of resource flow.

Luke’s practicum, a very long-term collaborative effort, has excelled in each of the task areas of origin: in direction setting, including being in the eye of the public, in mobilizing resources to support the ongoing strategic directions of the collaborative, and in institutionalizing the collaborative as a partnership structure (one that requires development of norms for interactions and rules for balanced and productive participation, not as something requiring a large built infrastructure).
Luke identified two additional contributions to the success of collaborations for the long term: ongoing purpose and continued measurements of success. Vision-led collaboratives require a purpose, a need to bring the collaboration together; but they also require ongoing measurement of successes and risks to the collaboration. There is a learning mode that is incorporated into the vision-led collaborative. In the learning mode, the partnership advances the collaborative through incremental definitions of the issues. This results from ongoing negotiations, measurements of success, and continued success that meets the interests and needs of each individual member and their organization. Because of the long-standing nature of Luke’s practicum, additional research is warranted toward sustaining collaboratives and the role of leadership in sustaining inter-organizational efforts.

**Learning-Led Collaborative**

An example of a learning-led collaborative was the creation of a community initiative that Sophia generated. An adage that comes to mind for Sophia to describe her practicum is, “go slow to go fast,” although she describes her initial approach as, “go fast to go fast” because she thought she needed to complete her project in a year.

Clearly, over the time, the practicum was really where I saw the greatest learning curve. For me, it involved the greatest understanding, and the greatest application of how and what to do, and understanding why. It was really nine months into the project when I “got” what the situation assessment was and the value of it. Even though I had been applying bits and pieces of what I had learned, it took me nine months to understand the multi facets of the tools that I needed to use. The practicum was not intended to be about driving an issue but I fell into advocacy. And I learned a lot from this experience and the negotiations, even though it took me nine months to come back around to being collaborative. This evolution of my leadership abilities was exactly what I needed to do....testing the waters is just so important. Yet, the practicum was really about relationship building. It was not about getting the project done.

I think it was also about taking risks in the sense of challenging myself and pushing others to keep moving forward. I think this is really what leadership is about. It’s about not being static but moving forward, and taking in all that’s around you and being flexible and molding and changing your direction when that’s what the need is. So I think I’ve applied these skills and the application has definitely evolved and it will continue to evolve. As I continue to experience and accumulate these
experiences, my ways of working will change – simply by being open and not being static.

Again, using Westley’s (1995) origins of inter-organizational effort and the tasks that bring about change, Sophia would share that it was in the structure of signification (issue definition, stakeholder convening, direction setting) where the origin of her practicum experienced bumps in moving forward. Without a clear situation assessment to help identify the purpose or issues, she resorted to advocacy, which prevented an incremental issues definition through negotiations. Though she and other partners are currently engaged in moving her practicum forward, she found this situation brought her the greatest learning as she became aware of how her own behaviors of advocacy limited the ability to move the project forward.

**Planning-Led Collaborative**

Randy’s practicum was an example of a planning led-collaborative. It involved the integration of negotiation and public involvement principles at his unit. He stated that what he learned in the Institute was integrated into processes at work and has evolved into a standard operating procedure, one that is still to support inter-organizational efforts.

The application of all those things we learned, like BATNA (best alternative to a negotiated agreement), I was doing through my practicum. It was a culmination of all those things we learned. I really lucked into a good practicum that fit both the course, my job, and what our organization is about. It just all came together really in a super fashion that kind of crystallized it all. During our final sessions, some of the hard nuts and bolts, hints, advice, why-don’t-you-do-it-this-way kind of things, why-don’t-you-implement-it-this-way kind of suggestions, are what we still use in our organization today. Those are concrete things that are almost mantras around here as to how we solve practical in-the-field problems that involve dealing with people and controversy. And let me emphasize, we deal with controversy. In fact, what we learned was integrated into our process at work and has evolved into a standard operating procedure, one we still use.

A planning led collaborative can initially be weaker in structures of signification and thus in mobilizing partners to act on the benefit of the collaborative. Although Randy’s organization works with highly polarizing and contentious issues, his organization has
reduced the level of conflict once experienced by establishing an internal standard operating procedure that supports inter-organizational effort.

Other examples of practicums as described by the study participants included:

Melody discussed how her practicum confirmed the importance of the role of process management in environmental decision-making.

For me, continuing to understand the role of facilitation has been of enormous value. This includes developing some basic skills of facilitation but also recognizing the need to bring in a skilled outside facilitator. In some cases, it’s not simply having a trained facilitator but someone who understands the subject matter. So for me, one of the ways my practicum was helpful was having that background theory and knowledge about facilitation, understanding how and when I could use it, and the different techniques.

My practicum has helped me to figure out when to bring in somebody else and how to select them. It was also used to form a statewide initiative. It has also given me confidence in being able to include and work with others who might be a bit more contentious in nature. So continuing to practice facilitation and use the tools we learned has made me more comfortable in managing groups and handling those controversial questions and situations.

Mark described how the practicum increased his knowledge and appreciation in working with conservation groups. Although he does not typically operate within an inter-organizational context, he did so for his practicum.

A better appreciation for working with conservation groups. I learned how the conservation agencies work: what it took to operate a non-profit, where their money came from, and how they used it. I also better understand how slow of a process it can be for them when these folks have to wait for resources. I recall someone saying, “We can’t tell you anything now; until we get this funding, we can’t go forward.” I got a better appreciation for how they work overall, in particular as we developed a memorandum of understanding that allowed us to create working opportunities for each of our organizations.

Kate described how her practicum contributed to her learning experience. Her project was based on a request to assist with the development of a conservation easement and resulted in the development of resources for property management options.
In partnership with another participant, we pulled together an advisory group to look at the long-term management of property and its potential for an easement. As we began the process, we realized when a district called and asked for resources on an easement, they had a list of twenty different people to contact, just to gather data about options. This led us to develop a resource book in partnership with other organizations to help districts make choices about property management options.

My practicum has resulted in ongoing dialogues with other NRLI Fellows about property management options. One other outcome of my practicum was the request for a change in legislation to allow local government to hold long-term funds for the preservation of easements, in particular for monitoring and easement enforcement.

For Frank, the practicum was a window for looking into what other opportunities there were for his coastal program to develop, including making changes in their current public outreach efforts.

My project was in a watershed. It’s still one of our toughest watersheds but it also gained us perspective on what else we could be doing in that watershed besides just reaching out to the public. It was one of the most valuable things that could be done though it’s not going to solve all the problems. We’re still working in the watershed. And it’s gratifying when you make successes.

For public outreach, we’ve changed approaches. There’s never just one way to get the word out there. We have a very well-rounded program. We do a lot of different outreach in a lot of different ways.

James described his practicum as facilitating an internal development and organizational structure. He was able to help facilitate the process due to his NRLI training. Furthermore, he went on to apply the knowledge he had gained to one of the most visible projects in North Carolina.

I was able to learn about the political nuances within my own organization, how to negotiate around those differences, and get the greatest return for the most people. I’ve benefited from my practicum ever since. With it came a new position and confidence since I had help to create the very structure I was going to lead and had a supportive organization around me. And also I benefitted in working on future projects like the Navy landing field issue. It was the most intense field experience … with tons of lessons learned. The main thing though was an experience in collaborating with many different partners and viewpoints. It was the NRLI training
came into play for me – how you negotiate, how you work with diverse groups, how you collaborate.

Glenn’s practicum was on land conservation, and it was a difficult issue for his company to deal with. The difficulty, in part, was because a portion of the property being discussed for land conservation was under ownership of an affiliate within his company, and he had no control over this affiliate.

So you’re in a negotiation internally, without power. How do you convince folks that held a lot of the property that it seemed to be of the highest interest of the people that we were negotiating with, to allow large chunks of property to be conserved? We had also merged with another corporation at the time. So we had organizational changes, including new people in decision-making roles.

There were many times going along through that practicum that I thought, “Well, I’m demonstrating the things that I learned in NRLI but I’m going to fail.” And it wasn’t because the NRLI training was inadequate. It was because the practicum that I chose was a very, very, very difficult thing to do. And to wind up with conserving thousands of acres of property in a river basin that’s the most heavily populated river basin in the Carolinas and with sky high property values at that time, the economics were very difficult to overcome. In the end though, in the end, some of those communication techniques like listening first and then asking questions, and having people that I reported to who were willing to take a chance, made all the difference in the world.

Even though we are hung up in litigation right now, it was absolutely, worthwhile …as most people agreed to significant long-term things. A lot of this comes down to everybody having a contributing role. And with any group of people that meets regularly, you eventually have some people that emerge as message leaders and as directional leaders. The convener by definition has a leadership role. The facilitator has a leadership role. And we had some people emerge in this process that if they wouldn’t have, we would not have succeeded. The stakeholders themselves sometimes don’t recognize their opportunities to lead but were fortunate enough to have strong people that were balanced, that did recognize the opportunity to lead, and that their organization gave them the room to lead….So it was an absolute learning process.

Ann’s practicum served as a tool to accomplish projects on her job rather than as a learning experience. She believed the practicum was a way to leverage the resources she needed within her organization to complete a project that required closure. It also allowed her
to interact with other people and encourage participation from internal staff on the project that involved the public.

Actually having a project I needed to complete as a practicum helped me get it done. It helped me leverage within my organization and in interacting with other people. It gave me some authority to move forward and do it. Although a practicum is not critical in my opinion to the overall learning experience, it is probably necessary because it’s the practical piece, the application of knowledge. Actually, without it, the training could be considered just theoretical.

For Joan, the practicum experience was not a major contributor to her overall learning experience. For her, the value of the practicum as a learning experience would have increased, had her project been more challenging and had it involved multiple stakeholders.

The practicum would have been more valuable for me if I had been in a situation where I could have taken on more outside of the project management work I was regularly doing or even something with more controversy to challenge me to learn.

Summary: Planning for Change in Inter-Organizations

The practicum remains a central component of the NRLI Learning Experience. As described by the participants’ stories, the practicum serves two purposes: It creates a mechanism for transfer of learning and practice in a real world context, and the practicum report documents the changes that have occurred, through stories and actual socio-environmental-economic impacts. In analyzing the several articles on practicums, it is apparent that the NRLI practicum model is distinct from the more traditional academic model, predominantly in operations. This is in part due to the audience. The traditional model often targets students without work experience, while working professionals are the predominate audience for the NRLI practicum model. In this analysis, successful aspects of the NRLI practicum model were listed as well as limitations of the model, based on the study participants’ comments. Given the limited purposeful sample size, it would enrich the overall understanding of this type of practicum model if more participants were able to discuss the role of the practicum in their NRLI learning experience.

Using the origins of inter-organizational framework developed by Westley (1995), some of the strengths and limitations of the practicums were examined based on three
structures: structures of signification (issue definition, stakeholder convening, direction setting), structures of mobilization (action mobilization and resource mobilization), and structures of legitimization (institutionalization of the collaboration, development of norms for interaction, terminology for expectations, rules for balance and productive participation).

The leader of the vision-led collaborative was able to successfully include all three structures in the development of the collaboration. This included the structures of legitimization or institutionalization of the collaborative in the sense of development of norms for interaction, terminology for expectations, and rules for balance and productive participation. Given the number of years that the collaboration has existed, a pattern of continuity exists in how the collaboration functions. The structures do not refer to a built environment or a central location for the inter-organizational collaboration. What structures refers to are the regular face-to-face meetings and ongoing communication, established meeting protocols and procedures, the documentation of success and ongoing measure of success, the history of the project, and a fairly consistent steering team.

Other common characteristics of visionary leaders Westley (1995) and others have identified include: the ability of visionary leaders to shape and reshape the myths and use symbolic language to communicate about the vision; and the reliance on face-to-face exchanges of communication, in particular with middle and lower action levels of organizations.

In visionary models of strategy the system remains flexible and responsive not because of a nested system of decision rules, but because of nested authority and meanings. Those closest to the action are empowered to act, and they do in the interests of a common purpose and mission. (Westley, 1995, p. 400)

The leader of the learning-led collaborative experiences difficulties in issue definitions and stakeholder convening. In developing the collaborative, Westley (1995) identified that the leader would have the least difficulty in the structures of signification. The leader in this example discovered that advocacy limited the ability to negotiate incrementally about a definition of the issues. This was confounded because the negotiations were occurring predominantly with leaders who could mobilize resources as opposed to emerging
from a groundswell of concern, a composite of experiences, and reactions of many individuals simultaneously (Westley, 1995). Once the leader was able to understand the impact of advocacy on process development, negotiations could begin about issues definition and working relationships could be established to mobilize for action and resources. Weick suggests learning, like action, is an irrational, highly social activity more connected to the construction of meaning (structures of signification) than to rules or authority (as cited in Westley, 1995). Once the meaning was clear and shared between the parties, the stakeholders involved were able to support the purpose of the collaborative and mobilize.

In planning-led collaborative, according to Westley (1995), structures of resource mobilization and legitimization are strongest, while structures of signification and action mobilization are typically considered the weakest. In the example used, the leader was able to establish structures of signification, particularly issues identification because the leader chose to work simultaneously with internal and external stakeholders, expanding rather than limiting the knowledge about the issue definition through negotiation of the definition and the need. Resulting in an internal standard operating procedure, this internal change and involvement of both external and internal stakeholders facilitated cooperative action in support of the procedure, which is still used today.

**Rationale for Leadership Development**

Recalling an earlier definition offered by Dixon (1993), leadership development is about building the capacity of groups of people to learn their way out of unforeseen challenges and problems. The first section, Motivation for Participation in NRLI, discusses the rationale as presented by the participants for their participation in the NRLI learning experience. This involved an extensive commitment of resources and time on their part. Five main threads run throughout this finding. In the next section, the Role of Leadership Development in Management, Conservation, and Protection of Natural Resources and the Environment, the participants discuss the value of the NRLI leadership experience pertaining to their ability to manage, conserve, and protect the natural resources and the environment. Eleven main themes occur in this finding regarding management, conservation, and
protection of the resource, and five themes are attributed to the role of leadership development.

**Motivation for Participation in NRLI**

People attend leadership development programs for different reasons. Continuing education and professional development can be likened to stepping-stones on the way to something else. For some, it is self-advancement in a career; for others, it is being able to influence the process from a current position.

Ann, had two reasons for her participation in the institute: one was for self-advancement in her career. “I worked for a NRLI Fellow and thought participating would better position me for my target position in the agency. And it did.” The other reason was to fulfill her need for continuous learning and insights about new people and situations while looking for broad-based applicability to situations like her own.

Sophia hoped to merge her passion as a community leader for collaborative decision-making with increased knowledge about the types of natural resources and environmental issues within the state and the conflicts faced by resource managers. Her NRLI experience aligned her personal and professional interests: “It made jump-starting my efforts around environmental issues much easier because I didn’t have to learn two things.”

Preparing for current and future challenges is another reason the participants provided for attending a leadership development institute. Luke in particular was intrigued with a new definition of leadership that moved beyond self-advancement and included experiencing interactions with those who held diverse perspectives and knowledge while concurrently learning how to achieve mutual outcomes through those interactions. It was a means to connect to a network of individuals who were working on various natural resources and environmental issues and were enhancing their ability to work across sectors with different organizations.

I came to the realization that you can only butt your head against a brick wall so long and you have to start thinking out of the box. When I read the description about what NRLI was all about, it clicked and I said, “That’s exactly what I’m talking about.” I wanted to go there to learn facilitation and negotiation skills, and be in an
environment with other people of that like mind. That prompted my participation because at the time there were not any courses like that available in my organization. Actually, it was the only leadership course that I had ever heard of and my goal was not to go up the food chain for the purpose of self-advancement within my organization. My goal was trying to get into a position where I could influence the decision process in a positive way and I thought NRLI would be very helpful.

Others, such as Glenn and James, applied because of the immediate relevance of the institute to their organizational needs. In the section Learning, Engaged, and Applying!, both stressed the importance of the immediate connections: in learning about oneself and how that self-awareness can build relationships with others; and in being able to apply what was learned immediately to situations they both were experiencing.

Joan, Kate, and Frank wanted to participate after watching demonstrations of NRLI Fellows or Program Leaders’ successful work with inter-organizational or diverse stakeholder groups. Melody and Randy wanted to participate in the institute after hearing from colleagues about the value of the institute in teaching how to work more effectively with diverse stakeholder groups through process management and negotiation.

Mark was quick to identify the challenge he wanted to embark upon during his participation in the institute. He wanted to challenge stereotypes: both “stereotypes” others might have about industry professionals and “stereotypes” he had about himself:

I wanted to grow personally and professionally, and progress in my organization. Knowing I was not gonna be comfortable in some of the situations, like role-plays or jumping from a tree, both of these personal challenges allowed me to grow in the company of others I might not have interacted with. I wanted a chance to prove I could do something a little different and challenge the stereotypical image of industry professionals as introverted non-sharing types who will not mix with extroverted share-their-feelings type. I looked at it as an opportunity to grow personally and I did. NRLI was an excellent growth opportunity for me, personally and professionally.

The participants’ rationales for their application and participation in the NRLI learning experience included:

1. Self-advancement (advance my career as a result of participation)
2. Leadership beyond self-advancement (influence the process from where I stand as I build the leader in me and challenge the leader in others)
3. Expand knowledge about natural resources and environmental issues in North Carolina and the complexities surrounding these resources
4. Continuous, relevant, and applicable learning that prepares and readies leaders for current and future challenges
5. Connecting to a network of learners (develop the capacity to work across sectors on issues of complexity and uncertainty toward insightful and integrative solutions).

Five major concepts resulted from the participants’ responses. Of particular significance is structuring a program that integrates both leader development and leadership development. The participants valued the continued development of their intrapersonal capacity for critical thinking, self-reflection, and self-control, the leader development aspects of the institute. Although some of the participants initially emphasized the development of their interpersonal capacity in working with others or the leadership development aspects of the institute, the study participants found value in both the leader and leadership development aspects of the institute. They recognized the importance of building an internal capacity for self-awareness and critical reflection, and the role of intrapersonal development in meaning making and relationship building.

**Role of Leadership Development in Management, Conservation, Protection of Natural Resources and the Environment**

Leadership development is the cornerstone of the Institute. Education and support serve as the primary mechanism to help a diverse group of leaders seek consensus on issues affecting the sustainable development of North Carolina’s natural resources and the quality of the environment. Yet, it is not often clear whether participating in a leadership development experience helps participants to learn their way out of unforeseen challenges. Moreover, if it does, how does leadership development support participants in creating change? This section discusses how leadership development, from the perspectives of the
participants, has helped them to manage, conserve, and/or protect natural resources and the environment.

Randy described how he was able to do a better job by avoiding gridlock and thus becoming more efficient in his ability to protect the natural resources and the environment. For example, Randy says:

Relatively new to our organization is rather than sending [our environmental cases] to the administrative courts, we are attending court mediation. My NRLI training has helped me to prepare for and negotiate settlements of penalties in some of these court ordered cases. Having the ability to understand the court ordered mediated process and preparing for it has been very helpful to me. As a regulator, NRLI helped me achieve better results in mediated settlements.

Because of my participation, I’m able to recognize and respect the differences in others, including their respective contributions that help make better decisions toward improving the environment. Being good at what we do, which is resource protection and development, leadership development helps us do this.

Luke referred to his conservation partnership as a way to describe how leadership development helped him to manage and conserve the natural resources and the environment during the past decade. He conveyed how working through the conservation partnership and leveraging the resources of the partners in a facilitated and collaborative environment protected key conservation lands in the right places in order to ensure the long term sustainability of the long leaf pine ecosystem. One of the value-added benefits in working with other organizations is sharing the tasks and responsibilities, but more importantly, sharing intellectual “know how” and “who” can best provide the “know how.”

Second, at the national level, Luke found the opportunity to engage in a collaborative process within his organization that promoted a change in the way his organization does business. Luke says,

There are long term changes that are going to result in untold benefits to conservation because for the very first time my organization, together with other organizations within our department, are going to collaborate together to come up with conservation goals and objectives, and actually implement them by reaching out to other external partners at a national and regional scale.
So we’ve seen both on-the-ground conservation benefits as a result of engaging in a collaborative process based on what I learned in NRLI as well as at the national level, because I was willing to take the opportunity when it arose to be engaged in a totally different process. It requires a lot of facilitation and finesse to maintain engagement of those parties at that level to affect policy change. Through a large-scale landscape cooperative, I plan to coordinate and engage many external partners to forge the form and function of this new cooperative.

James talked about the value of leadership development for him using his role in working with the Navy Landing Field that challenged the protection of resources. Although others played a key role, James contributed by bringing diverse groups together around their talents, expertise, and passions. He articulated the case in a clear and concise way, staying on message so that other could understand him. For James,

This is the case of having all of this training and experience, and being able to apply what I had learned. In the process of working with others, we protected a national wildlife refuge for future generations. So over time, as I continue to practice the skills I learned, it has helped me deal with several complex issues.

The success of the Navy Landing Field challenge wasn’t about just stopping the Navy from building the landing field. Once the refuge was protected, there were other conservation challenges and needs of the whole community. Yet, the real success, for me, was how the Navy changed its way of doing things when working with communities and how the locals came to appreciate what was in their own backyard.

At one of the public hearings, I saw someone in the back of room wearing a tee shirt that someone had produced. In the middle was an image of a tractor, around it were pictures and identifying words of a tundra swan, a cardinal, a snow goose, an eagle, a red wolf, a bobwhite quail. The caption of the tee shirt was something to the effect of Protecting our Farms and Flocks. I knew then, we’d won the bigger battle, that we’d built a community that realized the connections between their culture, their business, their agriculture and the natural world. The project had achieved a life of its own.

That’s when I knew we had a real victory, not just a momentary victory, but one that has helped evolve the AP3c regional conservation community initiative. So to me, even bigger opportunities resulted. This process will go on and on, and it will have tons of challenges and tons of successes and tons of failures, but at least it has a life that’s more important than just the one issue.
Frank believes there were several ways that leadership development helped him to manage, conserve, and protect North Carolina’s natural resources and the environment.

I think that by setting the right example and developing the right kind of strategic direction. Our program brought us funding that has allowed us to do things we may not have been able to do otherwise. And not just funding but other resources. We have been working with other NRLI Fellows for many years. This working relationship is the next best thing since sliced bread. This outside partner manages the grants specific to our municipality to help us solve local stormwater problems. How does it get better than that?

The other example for me is we have an environmental planner that works for the city now. He has helped to develop a low impact development manual that will assist developers and planners in developing low impact strategies. Developing many of these strategies will help our city over time to reduce impacts from non-point source pollution.

Lastly, other municipalities recognize our progress and visit to learn from us. So we’ve got a little bit of recognition as a progressive leader in managing our environment. While the steps we are taking may not enhance the environmental quality of the region, it can help coastal areas downstream and around us.

For Melody, understanding how people can work together and how to support them working together provided her with confidence to build and work with teams. And as the teams developed, they began working on bigger picture issues or cross-scale issues and began sharing lessons learned. This encouraged the development of social research and knowledge about the social impacts between human and natural systems and incorporating the social dimension into the collective work. For example:

The non-profit I worked for did not focus on dealing with oak and oak pine ecosystems (comprising approximately 50% and 60% of the landscape in the Appalachians). Rather, the traditional focus was on the rarest species and the rarest habitats. As our organization grew, we realized we were not focusing on the bigger picture, the bigger landscape, and tools, and thus began bringing partners together.

As project directors and conservationists began to hear the different perspectives about the bigger issues, the focused changed. Hence, reaching out and networking allows us to learn a lot, to share our expertise, and gain a bigger picture about the landscape and the interactions that are occurring. We wind up learning more about the
social dimension with respect to natural resources and the environment, and more about our own practice or ourselves.

Ann described how helping others to gain more information about management, conservation, and protection of natural resources and the environment along with learning to support one another in each of these areas goes a long way toward management, conservation, and protection of resources.

By helping other people to gain more information about those things [management, conservation, and protection of natural resources and the environment] and supporting them to do so, we learn more other people, and they in turn, become more open to different perspectives. A piece of this work is having good information and the interpersonal skills to work with others, to hear different perspectives. You have to have good working relationships with others or you will not accomplish anything.

Mark believes that the more effective leaders usually take learning seriously and get more out of the leadership development process and thus in working with a group, they’ll do a better job of managing whether it’s natural resources, the environment, or something else. Mark says,

Understanding the goals is only part of the challenge. You’ve got to understand the goals and so do those individuals who work with you. Once everyone understands and believes in the same outcomes, then you can take right off and say, “Here’s what we need to do to achieve them.” And either they achieve the goals or in most cases, go past them. They know what they need to do as opposed to having something forced on them. Thus, they are more likely to achieve them. And you got have communication; the team needs to communicate with one another fairly frequently throughout the project.

Mark conveyed that his particular unit seldom performs cross- or inter-organizational level work. However, he believes the same principles that apply to working together as a team would apply to working across organizations; namely, determining and agreeing on the goals together. For instance, if one organization could not agree to the goals, it would be difficult to achieve them. Lastly, he believes that communication would be extremely important to building an effective cross-sector collaborative.
Joan stated she had difficulty pointing to any conservation or protection projects but does believe leadership development has helped her to improve existing management programs and develop new educational programs. By helping to develop her confidence in bringing people together, she was able to reach out to other people and work with others to improve program operations. Her example:

Some years ago there was an idea of modifying a resource management workshop that another organization had developed by expanding the content and putting it in new locations. During our initial meeting it became clear that the organization that “owned” the workshops wasn’t very trusting of our intentions, concerned we wanted to change everything that they had developed. They were not interested in partnering at first and offered many reasons for why what we wanted to do wouldn’t work.

After addressing their concerns in subsequent communications, the organization came around and we were able to create a great workshop with new material and offered it in three locations. Interestingly, at the last event, the person that had put up the most resistance in the beginning told the audience it was his organization’s desire to bring this information to them. In the end he took ownership of the initiative. I saw it as a sign that our partnership was successful. I was a little concerned at the first meeting that the project was going to go nowhere, but we were able to work through that and come up with some great workshops.

This was a workshop focused on protecting our surface waters from sediment, and the training was delivered directly to individuals involved with on-the-ground site development. And they were excited about having the information brought to them and to be able to discuss it. I consider this an example because it was directed toward people who would have an impact on the resources.

Sophia explained the role of leadership development in helping her to manage, conserve, or protect resources. From her perspective, without the leadership development she has experienced over the last couple of years, she would not be working on the projects she is working on. In fact, in terms of leading projects, she might be doing just a little more than being a participant in an effort, but because of the leadership development, she is able to actually bring others to the table for the benefit of the environment. For example, Sophia has worked on a tree steward program.

Though it was not my idea, when I heard someone mention it, I jumped in and offered to “take the reins and make something of it.” As a result of my leadership
development, I feel more confident to seek out people I needed to get through the red tape in order to get on board. I wanted to create ownership, get people who are interested and supportive of the program as opposed to my initial efforts of going in and saying “Here, let’s do this because I want to do it.” And you know, while to some people this was my idea in terms of presenting it to the school, I went as a parent who wanted this to happen because of my kids.

Then I began sharing the idea with the principal since it’s his school; then I began talking to the facilities director of a local county public school system to ensure they were comfortable with what we’re doing and acquiring their approval prior to our submitting a proposal. We shared how we would value their input, and were looking for their help in planning and understanding of what trees they would like planted. So leadership development helped me to present this idea in such a way that others will have a stake in it even though it was an idea that came out of the blue. It wasn’t something that grew out of a particular initiative. Currently, this project is helping to teach part of their curriculum for the first grade. We meet with the first grade team to figure out how best to fit in the project so that it is not adding any stress in the amount of work that the teachers need to do.

For Kate, leadership development has helped her to manage, protect, and conserve natural resources and the environment by working with local communities. She discusses the role of leadership development within the context of working with local government.

The key to managing natural resource issues is working back at that local level and bringing in opportunities to the local populations to help improve them. Encouraging local communities, finding what those opportunities are and the resources to make them happen at the local level. Finding a way to show the local level that all problems can be broken down into smaller issues and to work on issues now rather than simply to consider them when the crisis arises. By working with local communities and seeing what their specific issues are on a day-to-day basis, you can help them figure out how it fits into the larger picture. Like how much water does the community need versus how much water is in the watershed. Moreover, keying them in to the facts of what’s available in the watershed and how their use affects what their neighbor’s use is. And then they can hopefully come to the table and share resources in a more effective manner. Future management, conservation, and protection will come down to a lot more sharing of resources than what we do right now.

For Glenn, leadership development has helped him to manage, protect, and conserve natural resources and the environment. He discusses the role of leadership development
within the context of a hydro re-licensing process. Glenn provides background information about the hydro projects that were built decades ago for an initial license of 50 years.

These hydro-operations were built and licensed before any of the major environmental laws were even in place (i.e., Clear Water Act, Clean Air Act) and before compliance of those laws. They were also built before computers and before any of the study and scientific data that we’ve built up over the years began to accumulate. Yes, without a doubt, leadership development has helped us to manage the resource differently because we are changing our operations based on what we’re learning from the communities that are involved in our re-licensing processes.

We’re changing our lake level limitations, we’re changing our flow releases from our dams, we’re changing the quality of the water in the flow releases from the dams, and we’re building public recreational facilities and buying land to build them, things we never had done before. So for me, the work we’re doing is really changing the way the resource is being managed and used; for me, hydro re-licensing could be the poster child for the role that natural resource and environmental leadership has had in helping us to involve others.

The study participants responded that participating in a leadership development experience helped them to manage, conserve, or protect natural resources and the environment, or to do all three. Where it was evident from their responses, how leadership development supported the participants in creating change or what from their leadership experience made it possible them to manage, conserve, and/or protect natural resources and the environment, was also included.

Eleven themes resulted: four with management of natural resources and environmental issues; two with conservation of natural resources and environmental issues; two with protection of natural resources and environmental issues; and three with management, conservation, and protection of natural resources and environmental issues. In addition, five characteristics were attributed to the role of leadership development in helping to manage, conserve, and protect the resources and the environment (see Table 12).
Table 12
Role of Leadership Development in Management, Conservation, and Protection of Natural Resources and Environmental Issues: A Summary

Overall Characteristics Attributed to Role of Leadership Development

Learning to Learn with Others (continuously)
Championing the Process with Core Others
Helping to Convene and Shape Inter-organizational Frameworks
Building and Maintaining Working Relationships
Continuing to Practice and Learn About Process Management, Negotiation, and Communication Skills (knowledge-in-action, reflection-in-action)

<table>
<thead>
<tr>
<th>Category</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td><strong>Strategically Shape Our Environmental Program</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Setting the right example</td>
</tr>
<tr>
<td></td>
<td>▪ Developing the right kind of strategic direction/vision.</td>
</tr>
<tr>
<td></td>
<td>▪ Reducing impacts from non-point source pollution.</td>
</tr>
<tr>
<td></td>
<td>▪ Recognition as a progressive leader in managing our environment.</td>
</tr>
<tr>
<td></td>
<td>While our efforts may not enhance the environmental quality of the</td>
</tr>
<tr>
<td></td>
<td>region, it can help coastal areas downstream and around us.</td>
</tr>
<tr>
<td>Role of Individual Using Leadership Development:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Used an inter-organizational framework</td>
</tr>
<tr>
<td></td>
<td>▪ Collaborated with others, particularly NRLI Fellows</td>
</tr>
<tr>
<td>Setting Precedent for Water Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ New operational procedures for hydropower relicensing projects, change</td>
</tr>
<tr>
<td></td>
<td>management and use of the resource by involving others.</td>
</tr>
<tr>
<td></td>
<td>▪ Change lake level limitations, flow releases, the quality of the water</td>
</tr>
<tr>
<td></td>
<td>in the flow releases, building public recreational facilities and buying</td>
</tr>
<tr>
<td></td>
<td>land to build them.</td>
</tr>
</tbody>
</table>

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### Role of Individual Using Leadership Development:

- Leading projects, bringing process management skills to groups
- Helped to manage the resource differently and change operations based on learning with communities involved in re-licensing processes.

### Share a Clear Purpose with an End in Mind

- Develop a clear purpose, ensure others understand and will support the same goals.
- Maintain ongoing communication

### Role of Individual Using Leadership Development:

- Effective leaders, usually taking learning seriously, get more out of the leadership development process, and thus more out of the group.
- Generally do a better job of managing whether it’s natural resources, the environment or something else.

### Improve Existing Management and Educational Programs

- Develop new educational programs that assist managers with current resource issues.
- Work in partnership with others to develop programs

### Role of Individual Using Leadership Development:

- Develop her confidence in bringing people together through process management skill development.
- Able to reach out to other people and work with others to improve program operations.
Table 12 Continued

<table>
<thead>
<tr>
<th>Conservation</th>
<th>Developed a Sustainable Conservation Partnership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Protected key conservation lands to ensure long-term sustainability of long leaf pine ecosystem.</td>
</tr>
<tr>
<td></td>
<td>• Shared resources, tasks and responsibilities, and intellectual “know-how” and “who” can best provide the “know-how.”</td>
</tr>
<tr>
<td></td>
<td>• Shared partnership model at a national level that promoted a change in the way organization does business for the long-term.</td>
</tr>
<tr>
<td></td>
<td>• Expects long-term changes will result in benefits to conservation because of reaching out to other external partners at a national and regional scale.</td>
</tr>
</tbody>
</table>

Role of Individual Using Leadership Development:

• Leader took opportunity to be engaged in a totally different process.
• Process management (facilitation) created a collaborative environment for the partners to leverage resources

<table>
<thead>
<tr>
<th>Stewarding Natural Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provided leadership to a local community project</td>
</tr>
<tr>
<td>• Created ownership of the project within the community, presented it in a way to include others in its development and implementation</td>
</tr>
<tr>
<td>• Has been integrative in teaching curriculum for first graders</td>
</tr>
</tbody>
</table>

Role of Individual Using Leadership Development:

• Leading projects, bringing process management skills to groups
• Bring others to the table for the benefit of the environment.
• Continuing to practice to develop my leadership skills in encouraging others to make change
• More confident to seek out others to support community projects.
<table>
<thead>
<tr>
<th>Protection</th>
<th>Achieving Mediated Settlements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▪ Do a better job at avoiding gridlock</td>
</tr>
<tr>
<td></td>
<td>▪ Leaves more time to do what is needed as a regulator to protect the environment</td>
</tr>
<tr>
<td></td>
<td>▪ Became more efficient in protection of natural resources and the environment.</td>
</tr>
</tbody>
</table>

*Role of Individual Using Leadership Development:*

- Able to recognize and respect the differences in others, including their respective contributions that help make better decisions toward improving the environment.
- Preparation for and negotiation of settlements (negotiation training)

<table>
<thead>
<tr>
<th>Beyond Protection of a National Refuge</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Worked with many organizations to protect refuge for future generations</td>
</tr>
<tr>
<td>▪ Brought diverse groups together around their talents, expertise, and passions.</td>
</tr>
<tr>
<td>▪ Success went beyond protection from Outlying Landing Field challenge; success included how Navy changed its way of doing things when working with communities and how locals came to appreciate what was in their own backyard.</td>
</tr>
</tbody>
</table>

*Role of Individual Using Leadership Development:*

- Using the training and experience, being able to apply what I had learned.
- Continued to practice skills I learned has helped me deal with several complex issues.
- Recognizing success, and measuring success in different ways
### Incorporating Social Dimensions in Research: Shaping Understanding of Human and Natural Systems

- Teams developed to work on cross-scale issues and sharing lessons learned.
- This encouraged the development of social research and knowledge about the social impacts between human and natural systems.

#### Role of Individual Using Leadership Development:

- Understand how people can work together and support them working together through process management.
- Moving from narrow problem definition to one with broader interests.
- Reaching out and networking allows us to learn a lot, to share our expertise, and gain a bigger picture about the landscape and the interactions that are occurring.

### Determining What is Useful Information for Decision-Making in Partnership with Others

- Help others gain more information about management, conservation, and protection of natural resources and the environment.
- Support them in their activities.

#### Role of Individual Using Leadership Development:

- Understand how people can work together
- Development of interpersonal kinds of skills
- Develop working relationships.
Encouraging involvement of local communities is the key to improving management, conversation, and protection of natural resources and the environment.

- Find opportunities and the resources to make them happen at the local level.
- Breakdown problems into smaller issues and work on issues now rather than consider them when they are a crisis.
- Prepare them to come to the negotiating table in a more effective manner.

Role of Individual Using Leadership Development:

- Use process management skills to bring groups together and partner
- Work with local communities on a day-to-day basis, help them figure out how their issues fit into the larger picture.

Sophia discussed the value of presenting ideas so that others can listen. She found people wanted to support her and actually became excited themselves; this has helped to build the capacity for engagement and ongoing education, as they consider ways to solve community problems. Glenn also discussed the role of a collaborative effort in building civic engagement and involvement to increase understanding about natural processes and the role of human impact on natural processes.

Mark talked about the importance of developing mutually agreed upon goals and through the interaction of determining the goals, communicating how to achieve those goals. Joan offered how training experts directly can impact local management issues, in particular issues with pollution. Melody and other scientists are learning from one another, sharing knowledge and expertise and developing cross-organizational research agendas. This information will inform better management and conservation practices. Randy has achieved better results through some of his mediations, allowing him and his staff to be more
responsive to environmental issues. Leadership development assisted Luke with generating the idea for a long-term partnership that has accomplished protection for thousands of acres of land, and the partnership continues to work on mutually agreeable goals in order to achieve the partnership’s mission.

James and others formed a larger collaborative to protect a wildlife refuge from the siting of an outlying landing field near an area where birds and pilots were sure to collide. He has used his skills to tackle difficult statewide issues, some of which have been resolved to continue developing into other issues. Frank continues to value partnerships, in particular the capacity of partnerships to promote and successfully implement ideas to solve issues. He also pointed out that there is a cumulative role for each project that moves forward and there is an overall impact on enhancing the quality of the environment. Glenn believes hydro relicensing could be the “poster child” for the role that natural resource and environmental leadership has had in helping him to change how the resource is managed and used.

Following is an overview of the eleven themes that resulted based on the three major categories.

1. Management of natural resources and environmental issues (4)
   - Strategically Shape Our Environmental Program
   - Setting Operational Precedent for Water Management
   - Share a Clear Purpose as a Means to an End
   - Improve Existing Management and Educational Programs

2. Conservation of natural resources and environmental issues (2)
   - Developed a Sustainable Conservation Partnership
   - Stewarding Natural Spaces

3. Protection of natural resources and environmental issues (2)
   - Achieving Mediated Settlements
   - Beyond Protection of a National Refuge

4. Management, conservation, and protection of natural resources and environmental issues (3)
Incorporating Social Dimensions in Research: Shaping Understanding of Human and Natural Systems

Determining What is Useful Information for Decision-Making in Partnership with Others

Linking Local Communities to the Future of Management, Conservation, and Protection Processes

In the publication, *How Do They Know They Know*, the response has been, “Because they did it!” (Vella, Berardinelli, & Burrow, 1998, p. xi). Based on the foundation and theory of adult theorists Lewin (theory of motivation), Knowles (andragogy or theory of adult learning), and Freire (theory of problem posing), as well as others, *How Do They Know They Know* brings forward the value of the learner in an evaluation process focused on accountability though they predominantly use a quantitative tradition. “Quantitative studies are structured, precise, and focused on identifying and studying specific elements through measurements (Vella et al., 1998, p. 30). Moreover, they often are used to document and assure funders of the value added of the program.

In the overview of eleven themes, the participants were asked how leadership development had helped them to manage, conserve, or protect the natural resources and the environment. According to Vella and colleagues, (1998), “qualitative evaluation is often used in an exploratory or formative way to gather information as a program is being developed” (p. 29). Yet, beyond the needs assessment and formative measures for program development, what methods can be used to document the processes and outcomes that result from transfer of learning or how the learning was implemented? Patton (2002) states that qualitative inquiry is very appropriate for studying process, as it aims to elucidate and understand the internal dynamics of how a program, organization, or relationship operates.

One of the most common data-gathering methods used to evaluate collaborative conservation is to query participants through surveys or semi-structured interviews (Conley & Moote, 2003). This approach has been taken throughout this study, understanding participants’ perceptions about particular topics, what they valued, and giving the
participants the opportunity to define what leadership development meant to them and how it had been implemented since they participated in the program. An obvious limitation to this method is that it is only one person’s perceptions out of the many individuals who participated in the Development of a Sustainable Conservation Partnership over time. Missing are the opinions of those who were affected by the project, other leaders, and other participants. This study was intended to provide a start in understanding the participants’ views about how they have used their skills in actual work-related settings. The participants chose the topic and applied their meaning to it. Future efforts to gather information about the status of recent practicums or collaborative work would lend understanding about how the NRLI learning experience is being used.

Finally, additional research into how the participants have implemented their knowledge and skills and the outcomes that have resulted from their efforts could assist in defining what constitutes success in a collaborative effort. Conley and Moote (2003), have established list of evaluation criteria based on: process criteria (examples include inclusive participation, open and accessible process), environmental outcome criteria (examples include improved habitat, improved water quality), and socioeconomics outcome criteria (examples include relationships built or strengthened, improved capacity of dispute resolution). A similar criteria list could be used in assessing the practicum outcomes, if more specific and precise results are desired.

A final thought is put forward from the perspective of James, knowing how to recognize success and measure success in different ways in order to understand the connections between leadership development and project outcomes, and the different viewpoints others might have regarding the process. As he mentioned in describing Beyond Protection of a National Refuge, success went beyond protection from the Outlying Landing Field challenge; success included how the Navy changed its way of doing things when working with communities and how locals came to appreciate what was in their own backyard.
Integrating Leader and Leadership Development

The next section describes the practice of leadership from one perspective. It brings into view the various dimensions of leadership as told by one of the participants. This narrative is followed by an overview of leader development and leadership development and closes with a description of an integrative framework of leader and leadership development and the numerous elements that make this a holistic and interactive system. The framework is organic rather than mechanical; a whole rather than a part. There are three themes to this section: The Practice of Leadership: Release the Energy of Others to Make Things Happen, Learning Leader, Learning Leadership; and Integrative Practice of Leader and Leadership Development for Natural Resources and Environmental Leadership.

The Practice of Leadership:

Release the Energy of Others For Things to Happen

Randy describes how he practices his leadership as a director of a unit and makes things happen by releasing the energy of others (Knowles et al., 2005). He describes what is customary in the way he operates, what he expects of himself and others, and how the mission of his organization guides his role. His unit provides guidance, technical assistance, permitting, environmental monitoring, compliance evaluation, and enforcement. He shares his principles and his role in carrying out the law. Randy also shares how he has changed his organization through continuous learning to be more responsive not only to the environment, but also to the public he serves, his staff, and his organization. Randy’s story illustrates the importance of leader development and leadership development, and the shift being made from predominantly hierarchical organization to heterarchial models (Sandmann & Vandenberg, 1995) that bring together elements of networks and organizations working together to solve very complex issues. An analysis of his story will follow.

I appreciate the chance to continue our discussion on the subject of natural resource and environmental leadership; it is interesting and challenging. For me, my practice of leadership is personally fulfilling. It is also physically and mentally demanding. And I believe that’s the way I practice it. I’m a demanding leader. I have very well-defined goals. I know where we’re supposed to go and what we’re supposed to do and
try to marshal our group towards those ends. So internally, my leadership approach is
directive and focused, it’s part of the chain of command. I can look at an
organizational chart, know who’s responsible for the signature at the bottom of the
page, and what comes out of this unit.

I may come across as a classic stern leader, but I am also a very liberal leader in terms
of granting great amounts of freedom in how people do their assignments. I don’t
supervise tasks closely, though I require accountability, performance, and getting
things done. I don’t watch the clock or look over people’s shoulders. I delegate
completely and trust they’ll understand my directions, sometimes perhaps to a fault.
So my practice of leadership is demanding, challenging, clear direction, full speed
ahead, get the job done, invigorating, grab hold, we’re going.

I recognize when we are developing processes and procedures, we have to consider
the range of population centers and communities that we deal with. In a large urban
area, local government and other constituents are often more familiar with the
services we offer, the regulatory process, and the protection to the environment and
the health of our state’s citizens. When we are working within rural areas; they may
not be as familiar with our role as a regulatory agency of the state and how they can
support us. It takes additional time, resources, and working through different
challenges to help a rural area achieve similar standards.

Sometimes we’re in trouble, especially when we have not ensured that a local
community receives the upfront educative time it needs to understand and prepare for
an upcoming initiative, and determine what role we have in helping to guide them
toward this initiative. Sometimes my message has been lost, rejected, or certainly not
followed, as I would like to see given our regulatory authority. But when we’re trying
to lead a large regulated community, we have to recognize – we cannot expect to
walk around with jackboots and hip pistols on our hips, and expect to have following.
Having coercive powers does not mean we need to use them. Rather we prefer to
encourage, convince, persuade, and educate for voluntary compliance. So that’s been
something that we have to be cognizant of is the capacity of our followers and the
regulated community. This is one of the good things about what NRLI taught me, to
listen and recognize differences.

Education, transparency, competence; here’s how I’ve come to understand and
communicate clear goals for my agency. I’ve got to be able to educate people outside
of the agency. I’ve got to be very transparent so that people do not think I’m hiding
things from them. I’ve got to be of course very competent. I’ve got to have the ability
to understand what they are saying and I’ve got to be able to communicate clearly
with them, with clear goals in mind. My staff has to understand and others have to
understand what we’re doing.
Moreover, to do those things, I have to internally lead differently from the way I do externally. Internally I need competent people who are not afraid of transparency, who realize that mistakes are costly, and yet are willing to bring them forth so that we can determine how to avoid doing the same thing again. With the role of our agency, I have to be one kind of leader on the inside but another on the outside, as we develop our roles in looking for ways to understand and listen to our public and remain responsive to our environment. Hopefully, this will give them ability to move forward with hard issues.

Yes, internally my leadership style is often more directive, and externally it’s another. The NRLI helped me understand this. However, when you are working with other organizations – even if you preferred a more directive leadership approach for implementing change, it doesn’t actually get you what you want. Exercising your authority with external organizations may not get them to follow your rules or the same rules in a manner you would prefer.

What has been successful at a cross-organizational level is that when we have been able to convince the other organizations that we’re hearing them. Otherwise we’ve been successful because we can be a coercive organization at the end of the day. We can be coercive but I think we’ve been most successful in true leadership when we have been able to convince people we’re hearing them by acting on what we hear. Y’all taught me so very, very well how to listen, how to act on what I heard, and I am just so eternally grateful for your teaching me and giving me the skills to be a better listener. I really am.

I think that’s the strongest thing to me was teaching me how to listen to outside organizations. Because I’ve got to motivate, empower, direct, keep focused and allow freedom for innovation and thought on the part of staff. By empower, I mean giving them clear goals and the information they need to know to act, to be innovative, and to make decisions. I also want them to be comfortable to challenge me, challenge conventional thinking, or challenge each other. I do not want them to feel like they are a robot or piece in the cog. I want them to feel strong, free, capable, and to have ownership in working on what they are working on.

Several key points manifested through Randy’s description of his leadership. His internal approach, told from his perspective at the micro level, was directive, in command, and focused on his organization. The description was managerial based in the earlier definition provided by Rost (1993a): making the decisions, ensuring the goals were met, being in charge, and decisive. In a public organization with a strong hierarchical structure,
management appears to be essential in directing goals and human resources.

Randy’s external approach was collaborative in nature, predominantly educative, and multi-directional. By listening to communities, he understood the barriers they faced in either implementing or following state requirements. While it was clear that Randy and his organization could resort to enforcement and compliance requirements to the fullest extent of the law, his preference was to influence and educate the public in building their commitment toward compliance measures.

One could assume what was most important to Randy was being directive and focused, “in charge and in command.” However, his story was richer than that. His larger goal was actually creating an environment where his employees believed that they could do an effective job in working with communities and other agencies and organizations. His power was in his support. It was in the high level of risk-taking he explored to ensure his staff was able to do the best job they could. Strategically, Randy focused his energies within the organizations and administered the internal workings of his organization, as his job and title required. Nevertheless, this was also a means to an end in order that Randy could actually focus on developing his staff to operate more effectively with their external constituencies and organizations, in order that he and his staff could achieve a vision that they supported.

Randy does not meet with the public every day, though his staff does meet with the public every day. At any one time, he has more than 40 people talking to someone outside the agency. He is intent on ensuring that they have the values by which to operate and that they have the power and the vision they need to perform their roles. The core of his leadership is in serving and supporting the staff of the organization, in particular supporting their ability to effect change and to be effective change agents. This is how Randy practices his leadership as a director of a unit and makes things happen by releasing the energy of others (Knowles et al., 2005).

Malcolm Knowles is known for his legendary theory of andragogy of how adults learn in his classic the *Adult Learner* (1990). He is not as well known for his theory about
leadership, in which he identified eight characteristics of the “releasing leader,” the creative leader (Knowles et al., 2005). The “releasing leader”:

1. Has faith in people, offers them challenging opportunities, and delegates responsibility to them (when people perceive the locus of control to reside within themselves, they are more creative and productive (Lefcourt, 1976, as cited in Knowles et al., 2005).
2. Knows it is human nature for people to feel a commitment to a decision in proportion to the extent that they feel they have participated in making it.
3. Understands that people tend to rise to the expectations of others.
4. Values individuality; senses people perform at a higher level when they are operating on the basis of their unique strengths, talents, interests, and goals than when they are trying to conform to some imposed stereotype.
5. Stimulates and rewards creativity.
6. Is committed to a process of continuous change and is skillful in managing changes. They understand the difference between status and innovative organizations and aspire toward the latter.
7. Emphasizes internal motivators over external motivators.
8. Encourages others to be self-directing. (Knowles, 2005, p. 256)

Conceptualizing leadership as a system of human energy offers a unique perspective about the role of leadership. Knowles discussed the role of Taylor’s “scientific management” theory and its impact on his theory of leadership (Knowles et al., 2005):

Effective leaders, I had been taught, were those who were able to get people to follow their orders. The consequences of this doctrine was, of course, that the output of the system was limited to the vision and ability of the leader, and when I realized this fact I started rethinking the function of leadership. It gradually came to me that the highest function of leadership is releasing the energy of the people in the system and managing the processes for giving that energy direction toward mutually beneficial goals. (p. 256)

**Learning Leader, Learning Leadership**

Learning leader and learning leadership is the cornerstone of the Institute for building the individual and collective capacity to effect change. Education and support serve as the primary mechanism to help a diverse group of leaders seek consensus on issues affecting the sustainable development of North Carolina’s natural resources and the quality of the
environment. Development occurs through two conceptual perspectives: an individual and a relational lens (Day, 2000).

Since the early 1990s, Rost (1993b) has maintained that leadership development in the 20th century was mostly equated with leader development or developing the individual in order to lead an organization. In the post-industrial model of leadership, Rost (1993b) contends that leadership development will be focused more on what leaders and collaborators do together; “defined as an influence relationship among leaders and their collaborators, who intend real changes that reflect their mutual purposes” (p. 99). While Rost (1993b) defines and characterizes leadership, he does not define leader development or leadership development in his post-industrial review of leadership. In order to reconstruct definitions that describe a framework for leader development and leadership development, new terms were introduced in the sections of Leader Development and Leadership Development.

**Leader Development**

VanVelsor and McCauley (2004) define leader development as “the expansion of a person’s capacity to be effective in leadership roles and processes” (p. 2). Day (2000) defines it as the building of human capital (2000). Three central assumptions are contained in this definition of development, and the spotlight is on: (a) improving the individual capacities, (b) developing what makes someone effective in a variety of roles and processes, both formal and informal (as opposed to what makes him or her a leader), and (c) individuals can expand their capacities to facilitate their effectiveness (Van Velsor et al., 1998). Leader development is primarily focused on intrapersonal development and on the knowledge, skills, and abilities associated with formal leadership roles (Day, 2000). According to Gardner (2006), building one’s intrapersonal competence facilitates the development of self-awareness and the ability to manage oneself.

In the Leader Development section, there are two thematic findings: Discovery, Awareness, and Reflection: The Inner Work; and the Listening of Leadership.
**Discovery, awareness, and reflection: The inner work.** In this section, the study participants describe experiences that were meaningful to them and in most cases, explain why they valued the learning experiences.

Ann was particularly enthusiastic about the personality assessments, including the Myers Brigg Type Indicator (MBTI) and the Thomas-Kilmann Conflict Mode Instrument (TKI). The MBTI, considered one of the most trusted assessment tools, measured the participants’ psychological preferences for how they perceive the world and make decisions. The TKI, also a reliable instrument, assessed the participants’ preferences for handling interpersonal conflict. Assessments instruments such as the MBTI and TKI can provide individuals with self-knowledge about potential areas for personal changes. These instruments can be part of a development plan contributing to the overall leader development experience.

I valued the personality stuff. It’s been interesting for me to look back, review my responses, and consider what changed. Wonder if there would be different outcomes based on my responses today.

Melody was quick to describe a learning experience that she appreciated and found memorable. Introduced as part of the MBTI training was a type-based way to problem-solve (also known as the “Z”).

A learning experience that was very valuable was the MBTI problem solving exercise. We moved through the room based on our personality type, each type moving to a different station at various times. That was a real aha moment for me. It helped me increase my awareness because I am more likely to jump ahead without a thorough analysis. Then I get bogged down so it changes. I had a total blind spot on that so now I understand where it is coming from. It also helps me understand where others are coming from, some of those folks whom I’ve lost my patience.

In solving a group problem or making a decision, the goal of the Z exercise is for all four preferences to follow a systematic process. Beginning with the perception processes, start with S (sensing perception), then move to N (intuition perception), next follow with the judgment processes, beginning with T (thinking judgment), and ending with F (feeling judgment). During the Z exercise, each perception or judgment process, if purposefully
considered, has the potential to contribute to the solution. This exercise can be used in other ways to help demonstrate how one’s preference for a particular process, perception, or judgment process can reduce the ability to consider other options. In addition, understanding that an individual may have a particular perception preference for “N” may help someone who prefers the “S” perception to consider the value of this perception process to the overall problem-solving process.

Mark offered several examples of his intrapersonal work and referred to them as his small gold nuggets. Some of these exercises included interaction with others that helped build his interpersonal capacity.

The Leadership Practice Inventory [LPI, the 360 feedback assessment], where we did the interviews with others in our organization and learned about ourselves. I was shocked; I did okay. You see, I never envisioned myself as a leader.

The other self-awareness thing, the Myers-Briggs. I knew my type with my MBTI but I didn’t know why I was but I could recognize it in other people. That was just kind of enlightening and how you could see it so plainly sometimes.

The media and speaking part was a big one for me too. I didn’t realize how many times I’m gonna have to stand up and communicate at meetings what we’ve or I’ve done for the last quarter. Present the highlights, don’t take thirty minutes and bore everyone to death.

**The listening of leadership.** Sophia described the value of the listening of leadership, which became very significant to her during her practicum.

As a community member with my practicum, I wanted to tell a local municipality about a project they needed to do…So I said to them, “I don’t think you’re doing this,” only to find out that they were. I did not have enough information nor did I ask to what extent they were actually addressing water conservation and tree planting during the drought. So I found out that leading is about listening. It is about having a breadth and depth of understanding that we don’t always give issues.

Mark found value in the listening of leadership during an exercise early in the sessions.
I remember we had one particular exercise of how to be a good listener, where you and partner took turns listening and speaking. It made a big difference for me to understand how I listen to someone else, how I can improve how to listen to others.

Glenn shared how his practicum helped him to improve his listening. For him, improving the way he listened to others was one of the better outcomes that resulted from his participation in NRLI.

You have to stop and think about how other people perceive you. Because of [my involvement] in several stakeholder processes and the training with the Institute, I got much better at being an effective listener. It helped me not only to understand what other people were interested in first before I opened my mouth, but also to be more approachable, and I had to learn how to do this.

Previously, I worked in a military environment where rank was everything; there was a certain way of communicating up and a certain way of communicating down. It was very rigid. Coming from there, to a stakeholder environment where initially it’s every person for themselves…that’s a big difference. Initially, I wasn’t very approachable because I already had a lot of opinions about things and had gotten used to making decisions really fast, with limited information. This environment here was different. I had to learn how to really be patient and let people say what they needed to say and then be able to ask questions of them, to get a better understanding of what they really said. I’m a much better communicator, particularly in effective listening, and I benefited from the program in this regard.

The value of leaders communicating effectively is demonstrated daily in all organizations (Kline, n.d.). The participants established the value of listening as the essential communication skill. According to Kline, we spend 45% of the day listening. In *7 Habits of Highly Effective People*, Covey (1990) introduced the habit of empathic listening, “seek first to understand, then to be understood,” (p. 235). The fastest form of communication, emphatic listening has the ability to transform the course of conversation and deliberations. By using paraphrasing, an active listening skill, (Kaner et al., 2007), the listener reflects what the speaker says and feels in a non-judgmental way, though in the listener’s own words of understanding. Emphatic listening is a way of being, achieved by understanding another’s viewpoint and feelings about a topic or issue. The intent is to listen to understand rather than
listen to reply and develop more effective personal and professional relationships (Covey, 1990).

**Leadership Development**

The definition that VanVelsor and McCauley (2004) offer for leadership development is similar to their leader development definition: “leadership development is the expansion of the collective capacity to be effective in leadership roles and processes” (p. 18). According to Day (2000), it is the building of social capital. Since the leadership development definition of Van Velsor and McCauley focuses more on the organization than on the inter-organizational context, Dixon’s definition is used for leadership development. Dixon (1993) describes leadership development as building the capacity for groups of people to learn their way out of unforeseen challenges and problems, or in anticipation of unforeseen circumstances. Leadership development is primarily focused on interpersonal development; on the knowledge, skills, and abilities that build networked relationships among individuals to enhance cooperation and resource exchange in creating organizational value (Day, 2000). According to Gardner (2006), building one’s interpersonal competence helps form an accurate understanding of others and relationships, allowing one to understand and work with others. “Leadership development,” says Day (2000), “can be thought of as an integration strategy by helping people to understand how to relate to others, coordinate their efforts, build commitments, and develop extended social networks by applying self-understanding to social and organization imperatives” (p. 586).

There are two thematic sections, Sharing the Road: Managing the Process While Negotiating the Process, and Leadership as Relationships: We are More than the Professional Statements We Make to the Public.

**Sharing the road: Managing the process while negotiating the process.** It is a skill to learn to work together effectively with diverse groups for beneficial outcomes. In the NRLI program, for eight sessions, the instructional cycle is initiated, and participants come together with the same people. The participants often grow as individuals and grow together as a cohort, creating a network of future colleagues. Yet, it is a challenge to interact with
people of different opinions and educational backgrounds about natural resources and environmental issues; in particular, to develop creative strategies for effectively managing difficult meeting situations while attempting to achieve the best decisions. The road is shared to do this, and an effort is placed on designing and managing process as well as on negotiating process. For the most part, individuals want to initiate a solution-orientated discussion about the substantive nature of the issues and the solutions he or she believes will address the issues without discussing how they will go about having a discussion.

Sophia discussed a technique she found to be of great value during her practicum that she did not understand prior to undertaking her work, which was the significance of assessing situations by conducting a situation assessment.

In terms of leadership, I underestimated the value of assessing situations, of learning about the situation before planning to create change within those situations. This was more critical than I ever understood. We touched on the skill of situation assessment but I would emphasize it more. In a sense, I did my situation assessment as I was driving my practicum project.

Mark offered specific learning examples that assisted him in thinking about how to work with others. He referred to them as his small gold nuggets, such as his interaction with others (and his self-reflections that helped to shape his interpersonal capacity).

Then there was another exercise about dealing with a defensive person [assert and defend sequence], a cycle of communication you can actually escalate if you continue to assert and defend your position or points, rather than listen. In fact, you may have to listen two or three times before making headway, especially if someone continues to assert their message.

You’ve got to realize “headway” is gonna happen ahead at some point, so be persistent until you solve the problem. Think about how to listen in these cases when someone wants to assert and defend.

The other big thing was the little negotiation principles, you know, when you hear somebody say, “here’s my position” [and we don’t search for interests]. Like the orange example where I want the rind for baking, and you want the pulp to make orange juice, but our position is to ask for the entire orange. And they’re not mutually exclusive.
James reflected on the value of facilitation, problem solving, and negotiating with respect to leadership.

I know there are leaders who don’t have skills in facilitation, problem-solving, or negotiation. Some of them appear to be effective but I suspect what they have to do is hire people around them who do have those skills and can be deferential when that is needed to those people with those skills. I can’t help but think every leader is made better by having training in these skills at a level at which these skills can be acquired. But after that, think it would be important to have enough awareness about valuing these skills to hire people who do have them when needed.

Although he valued the skills of facilitation, problem-solving, and negotiation, James considered these the front piece of NRLI that people think about; but for him, getting to know a broader community and a range of current issues and learning about what it is to be a leader in a very complex field were very important. For James, without the leadership context, facilitation, problem solving, and negotiation are just stand-alone skills.

Melody, Luke, Kate, Frank, and Joan wanted to learn to work effectively with diverse groups for beneficial outcomes. For example, Melody described how she was beginning to work more with larger groups and needed to have better leadership skills working with a broad array of stakeholders and participants. “Practicing facilitation was very valuable to my work responsibilities. I needed to have facilitation skills.”

Luke wanted a better understanding of the role of facilitation and negotiation in leadership:

I’ve had times where in small and large groups formally and, especially informally, where I’ve used facilitation to come to some agreement. Rather than taking a position and negotiating, I find it useful to actually facilitate a dialogue between stakeholders in order for them to come to a mutually agreed upon conclusion. This is often the most beneficial approach, where everybody can leave the room happy. Moreover, we’ve moved the ball down the field.

Following NRLI, I had the opportunity through my practicum to create an environment in which I could apply those skill sets and move forward with resolving a very contentious natural resource issue. I learned to get our initial stakeholder group to the table. It took a while to develop a mission statement for our fledgling partnership and many sessions to begin to build the trust needed to create a solid foundation for planning and implementation to achieve our common mission. I am
still using many of the skills today, both within my organization and to build a larger conservation collaborative in North Carolina and the Southeast. All my supervisors have been very supportive of my collaborative approach to deal with priority conservation issues.

For Kate, meaningful lessons were in the communication and facilitation skills, recognizing how groups interact and communicate with each other, and specifically how individuals can talk past each other or talk with each other.

Being able to recognize when people are talking past each other is important to me. Just watching how you and your colleague worked, I learned how to ask a question and help them get back into the conversation. So learning the skills of being a good listener and listening not for the answers you want to hear but for the information that is being offered.

Both Frank and Luke found meaningful learning experiences from the interactive role-plays conducted in the workshops held February through April with the participants acting as the negotiators, facilitators, conveners, and facilitative leaders.

Frank began,

Ah, the role-plays, which were very relevant, very well planned, and spot on. As a participant in the role-plays, it took me aback, because you can never think of all the issues. You cannot think of all the issues, because you don’t know all of the opinions. It reminded me that when I get into these situations, to avoid saying, “This is the solution.” If you walk into the situation with this mind frame, you’re going to get sunk.

Luke shared,

The other meaningful learning experience for me was the role-playing. You know, you can sit there and digest what people toss out at you but until you are forced into a particular scenario which requires you to think on your feet, it is just an academic exercise. Those role playing scenarios were, and one in particular, slightly brutal, and extremely helpful. They allow you to gain a perspective of the person on the other side of the table, especially if you are put in that role, so that you can appreciate both sides of an argument.

Joan’s participation in NRLI enabled her to be more successful in her career. She gained confidence in being able to step out on the edge and not being afraid of taking chances.
I’ve felt comfortable enough to try and rise to the challenges that my new job presents. I’ve had to work with groups I have not worked with before and in ways, I had not done before. If I had not learned to trust myself – gained a little more confidence in my abilities – I don’t think I would have had the courage to step out.

Glenn described the value of “ground truthing” or verifying information on the ground, when dealing with scientific and technical information. In working with others, there is a need to share and facilitate understanding about complexity of issues. Otherwise, if you start from a strong base of knowledge and facts about the resource, it becomes easier for some people to discount or avoid listening to the opinions that may contradict what they assume to be true.

There are a tremendous number of water quality and water quantity models, all types of models out there that have been developed all over the country and all over the world. You have to be careful of your model selection to make sure you’re choosing the right study techniques and study techniques that really are applicable to the resources you’re trying to study and that you have verified the data on the ground. A person can be overly reliant on models to give them “the” answer when they really need to be applying more of their judgment to see what the model is really trying to tell them. Most of the time a computer model is a decision-making tool that should help inform the decision but it does not necessarily spit out the answer for you. You have to make sure you apply the right amount of common sense and professional judgment to it.

In the end, decisions are made by people; they’re not made by the computers. I think the experiences that I’ve had, particularly in collaborative processes, have made me much better at seeing or feeling the other person’s perspective. If you start from a really strong base of knowledge and facts of understanding your resource, it becomes easier for some people to discount or avoid listening to the opinions that may contradict the factual basis you assume to be true.

So, I think through working with different types of people, scientists, local governments, the non-profit organizations, property owners, has given me a good perspective and a good ability to hear the differences and the facts as other people may understand them. And when you’re trying to reach agreement but having a difficult time agreeing on what the facts are, then you need to look at why it is they want something different. What’s that underlying interest you’re trying to go after? And once you both understand what that is, maybe there’s a different way to accomplish it that neither one of you had really thought about before when you were just, you know, just limited to what you yourself knew at the time.
The value of process management, including the development of negotiation skills, was explored in order to learn the different types of participatory techniques that support groups in doing their best thinking (Kaner et al., 2007). The participants became familiar with the facilitator, convener, and negotiator roles and the importance of their contribution to stakeholder groups who are deliberating contentious and complex issues in order to arrive at a productive outcome.

**Leadership as relationships: We are more than the professional statements we make to the public.** “Some of us remain strictly autonomous in our learning activities; many of us engage in self-directed learning projects; but mostly we do our daily learning in relationships” (Mackeracher, 2009, p. 151). Developing working relationships encouraged the participants to look at various aspects of natural resources and environmental issues from alternative ways of thinking (Brookfield, 1987). Understanding the many angles and sides aided in generating options that were more reasonable, achievable, and innovative while still meeting the goal of protecting or restoring the resource.

A meaningful aspect of the Institute experience was the valuable friendships and collegial relationships gained beyond the formal learning experience. Leadership as relationship extends the idea of interaction as a network of fluid relationships, identified with concepts of empowerment, participation, partnerships, and service (Sandmann & Vandenberg, 1995).

McDermott (2003) describes learning in the relations between people:

Learning traditionally gets measured on the assumption that it is a possession of individuals that can be found inside their heads…Learning is in the conditions that bring people together and organize a point of contact that allows for particular pieces of information to take on relevance; without the points of contact, without the system of relevancies, there is not learning, and there is little memory. Learning does not belong to individual persons, but to the various conversations of which they are a part. (p. 292)

Randy discovered a new meaning about leadership:
I wanted to learn how to interact with people, not necessarily what I’d always called leadership, but how to interact with people and consequently get desired outcomes from my interactions.

Sophia said that even though she experienced tough moments, she learned about herself and others in the process. She described her NRLI experience as meaningful to her in the following way:

Even though there were tough moments, the experience has brought me to a place today where I have some great working relationships. And I’ve learned how to drive my agenda, to forward my own interests while understanding where they fit into other people’s issues and interests, or the organization’s goals rather than just hammering in my own ideas of what should be done. I am learning to work within the resources and ideas of others.

James described how facilitation, problem-solving, and negotiation are the front piece of NRLI that people think about, but it turns out there are more important things.

For me, it was getting to know a broader community and a range of issues, and learning about what it is to be a leader in a very complex field. Without the context, those skills of facilitation, problem-solving, and negotiation are as sort of stand alone skills, and would not be that useful. Except if you wanted to mediate or something professionally, otherwise, it is just a skill.

So my leadership experience with the Institute was the perfect venue for me, a very meaningful experience and I attribute a lot of the success that I have had, especially my sense of leadership, to what I learned in NRLI. I grew as a person in the process of NRLI. I hungered for that growth because without it, you simply have the skills.

The fact that we had to look at issues that might cause conflict and tension among us as Fellows was good. That was also a growing experience. Not just the theoretical issue but the discussions that resulted after we were done role-playing. In fact, our organization was in a conflict with one of the other participating organizations when I was participating. Our conflict got brought to the surface because of a case study. But because we had to stay in the company of each other and keep talking helped build a working relationship. We know each better than just the professional statements we are making to the public, so we can talk in a way that we could not before outside of NRLI. We are more than the public statements we make to the public.

Ann brought up the point that you cannot get things accomplished without good working relationships. Though there is a role for skill development that helps the individual
understand self-better, those interpersonal skills also guide one’s behavior to work more effectively with others. Relationships matter.

Helping other people to gain more information about themselves and in learning to work with other people, and to be more open to different perspectives – does have impact on the kinds of decisions we make. Having good information to support your decisions is also important in helping people work through the issues.

Both Joan and Melody discussed the value of perceived risk and experiential learning activities in thinking about how to trust others and oneself. The outdoor training day served as a metaphor for how to create trust in a situation where trust was inherently required.

For Melody,
Jumping off the [30-foot] pole, the Leap of Faith, and being caught by the group was very challenging. Yet, doing this leap was in some ways, [similar to] engaging in these partnerships, in trusting in others, and their good will and support. The Leap of Faith made me aware of some of the things I have to do in the professional world to engage others in the process.

For Joan,
I learned to trust myself more after my participation on the Leap of Faith at the outdoor ropes course.

For Sophia, the leadership component that she defined as working and leading together was the greatest tool she took from the Institute.

Working as a group, meeting together, was essential in developing leadership skills. The timing was perfect, as I was ready to challenge myself knowing there were NRLI mentors to support me. The atmosphere was nurturing and comfortable, and yet there was a prodding way of learning and experiencing. I found a resource in myself, a skill in myself that I had no idea I had. The importance of leadership and the environment is teaching people to work together and lead together.

James commented about the value of his interaction with the other Fellows.

The curriculum and the meetings were an excuse for us to hang out and learn from each other, all of those informal ways that learning that takes place. Second to that, I most enjoyed … the leadership stuff you introduced later in the course. These are the concepts that really get my passion going, and went beyond techniques for collaborative problem solving and negotiation. The Institute would not have worked for me without the interaction between the Fellows and the leadership component.
Coming from my experience in being in the military, there is a lot of command and control version of leadership where someone gives an order and there was not a sense of collaboration. It was: I am in charge, I am gonna tell you what you’re gonna do, and help you get on board if you cannot do it yourself.

Yet, natural resource issues are very complex, often involving many stakeholders with very different viewpoints and all of the viewpoints having some legitimacy depending on how you look at them. Therefore, it’s not like you can dismiss a whole range of them and just say it’s yes or no on this. I developed respect for people with different viewpoints because they were part of Institute, having to do the same thing. I realized as a leader, the command and controls version wasn’t going to work with this group; it wasn’t going to work in collaborations around issues. So the collaborative elements that NRLI brought up, I saw as viable models that people had thought through and was able to adapt them in working with others and my staff.

Learning must take place in a safe and comfortable environment that will assist participants in solving problems and provide them with opportunities to test assumptions through activity (Allen, 2007). Positive relationships contribute to an environment where the a learner feels secure enough to take risks; negative relationships contribute to a learner’s level of stress and an environment in which motives for learning may be redirected into self-protection (Mackeracher, 2009).

One of the contributing factors to feeling secure in a learning environment is the learner-facilitator relationship. Facilitators who do not exemplify the desired behavior can undermine efforts to effect lasting change (Allen, 2007). Learners are often challenged to examine previously held values, beliefs, and behaviors, and will be confronted with ones that they may not want to consider (Brookfield, 1986). The task of the facilitator then is to create a learning environment, one in which assumptions, underlying beliefs, behaviors, and values can safely be challenged. Expressions of differences are as essential to the educational process as maintaining a learning environment of mutual respect. Learning is facilitated when the self-concept and self-esteem of each learner are valued as the learner presents them (Mackeracher, 2009).
Integrative Practice of Leader and Leadership Development for Natural Resources and Environmental Leadership

A framework of the Integrative Practice of Leader and Leadership Development for Natural Resources and Environmental Leadership was developed. The premise is that leadership development is of a leader-centric and relational-centric lens. Leadership and Leadership development have traditionally been associated with the following dimensions:

1. The practice of what we have called leadership is the domain of the individual, often someone with formal authority and position;
2. The leader in leadership is about leading an organization, not an inter-organizational network;
3. Leadership is what a leader does and decides; not what is decided by the leader and the collaborator.

In this example, additional dimensions are added to the construct of leader, leadership, and leadership development. Natural Resources and Environmental Leadership is best understood as a process that involves two levels of influence (individual and organizational) and two types of influence relationships (internal and external) (Addor et al., 2005; Portugal & Yukl, 1994). According to Day (2000), leader development is the enhancement of the human capital; and leadership development, the enhancement of social capital. Leadership development can be considered the development of the leadership processes in context, as well as the development of leaders as individuals. The following dimensions represent an integrative strategy for leadership development in the future:

1. The practice of leadership is both the domain of the individual and in the collective ability of people, either with or without authority, occurring within a context of interactions to serve a mutual purpose. Roles can be interchangeable; leadership can be emergent. Leadership is shared, distributed, and relational. It is geared toward building relationships, networks, change, responding to conflict, and situations (tools: abstraction, perception, and knowledge).
2. The leader in leadership can be within an organization, but leadership often works
from an inter-organizational or stakeholder or partnership system), mostly for the benefit of the organization and links back to the organization.

3. Management is what a leader does and decides, does to followers and collaborators. Leadership is what leaders and collaborators do together to effect a mutual purpose.

The NRLI model is used to demonstrate the importance of leader development and leadership development. Although Day (2000) contends that there is a need to combine the traditional, individualist approach to leader development with a more shared model, in the NRLI model the emphasis is more on leadership development as distributed, shared, and relational, though individuals are critical for linking back to their organizations and to internal constituencies.

The framework in Figure 3 describes the dynamic interplay between leader and followers and between leadership and collaborators. Leader development leans more towards development of the individual and his or her self-awareness, understanding, and differentiation, while leadership development is more of organizational development strategy and in this particular case, is a development strategy occurring between other organizations (Day, 2000).

Management is defined as an authority relationship between at least one manager and an employee, where the manager coordinates the activities to produce and sell particular goods and/or services (Rost, 1993a).

Leadership is an influence relationship among leaders and collaborators who intend real change that reflect their mutual purposes. Leadership is not what leaders do, but it is what leaders and collaborators do together, meaning the essence of leadership is the relationship, not the leader (Rost, 1993a).

Leader development places the emphasis on skill development of the individual leader, often someone with a formalized leadership role who is leading an organization or aspects of the organization (Day, 2000).

Leadership Development is building the capacity for groups of people to learn their
way out of unforeseen challenges and problems or in anticipation of unforeseen circumstances (Dixon, 1993).

Grounded in learning from experience, there is both a behavioral and a cognitive aspect to learning, including an immense conceptual social learning framework. There is no individual way out of the ecological crisis; rather a new system of learning is required, one that is simultaneously joint, cooperative, vertical, horizontal, and interdisciplinary in its character, philosophy, and structure (Finger & Verlaan, 1995).

Ecological issues are distinguished by the following characteristics:

- Complex interactions between natural and human systems, which often require multifaceted responses;
- An emotionally charged and contentious context when competing interests or values surface;
- Reliance on a scattered and less than integrated science base;
- An integration of knowledge across a wide array of areas of understanding, disciplines, and attitudes;
- A level of uncertainty and unintended consequences; and
- Often, a long time toward a determination of options and solutions (Gordon & Berry, 2006).

Fundamental assumptions about the learning model are based on the theory of andragogy, and describe an andragogical learning model as one where the learner:

- Needs to know why, what, and how
- Learner's self-concept as autonomous and self-directing
- Role of learner's experiences including resources and mental models
- Readiness to learn from life-related experiences
- Orientation to learning that is problem and learner centered
- Motivated intrinsically and extrinsically (Knowles et al., 2005, p. 64).
For optimal conditions for social action to occur within an inter-organizational framework, Westley (1995) identified three structures:

a. Structures of signification: interpretative schemas (give meaning to activities, paradigms, mind-sets) of the inter-organizations.

b. Structures of legitimation: rules and norms that organize activities and govern the routine of the inter-organizations.

c. Structures of domination: allocation of resources and decision-making power within the inter-organizations.
### Integrative Practice of Leader and Leadership Development Framework
Natural Resources and Environmental Leadership

<table>
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<th>Capital Practice</th>
<th>Social Practice</th>
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<tr>
<td>Organization</td>
<td>Hierarchical</td>
<td>Organization</td>
<td>Hierarchical</td>
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**Figure 3. Integrative Practice of Leader and Leadership Development**
Natural Resources and Environmental Leadership
Although development of the learner/manager/leader is crucial to organizational development and the organization achieving its mission, networking and cross-sector learning serves as a prime method of enhancing social capital in an organization (Day, 2000), and the inter-organizational system. Shifting from hierarchical models of leadership to heterarchial models that bring together both elements of networks and hierarchical organizations, may prove to be the most relevant structures for the 21st century (Sandmann & Vandenberg, 1995).

**Shaping a Learning Community or Cultivating a Community of Practice**

Each year relationships are formed with the incoming class of Fellows and previous relationships are enriched. As a way to link the Fellows together, several NRLI Fellows spearheaded the development of the Natural Resources Leadership Association (NRLA, 1999). Recognizing the value of continuous learning in leadership development and in building a network for collaborative decision-making, the NRLA was created as an informal association to host annual educational gatherings. Traditionally, an educational event is offered each November on a subject related to environmental dispute resolution or public participation. In the past, a steering committee comprised of the Fellows helped develop the educational topic and agenda and researched appropriate educators.

Several Fellows would like to expand beyond the traditional educational event into what some have referred to as a Learning Community and others as a Community of Practice. Using this interpretative study as a way to leverage the discussion about leadership in natural resources and environmental issues, there is an interest by the study participants to continue to expand the capacity for collaborative decision-making within North Carolina and consider how best to prepare the 21st century natural resources and environmental leader for future challenges and opportunities. Already there are examples of peer-to-peer working relationships, broad-based partnerships within the state, and several inter-agency initiatives. This type of networking and cross-sector learning serves as a prime method of enhancing social capital in an organization (Day, 2000). Shifting from hierarchical models of leadership to heterarchial models that bring together both elements of networks and organizations may
prove to be the most relevant structures for the 21st century (Sandmann & Vandenberg, 1995).

Common in U.S. universities, learning communities are formed by groups of people who share common values and beliefs and as a result, are actively engaged in learning together from each other. According to Price (2005), the growth of learning communities is due in large part because of the leadership and advocacy of the Washington Center for Undergraduate Education at Evergreen State College. Thus the major beneficiaries of learning communities are students on campus and the faculty who work with them. Learning communities appear to meet the demand for collaborative and experiential learning by integrating teaching and learning experiences. Price (2005) describes learning communities as sharing basic characteristics such as:

- Organizing students and faculty into smaller groups,
- Encouraging integration of the curriculum,
- Helping students establish academic and social support networks,
- Providing a setting for students to be socialized to the expectations of college,
- Bringing faculty together in more meaningful ways,
- Focusing faculty and students on learning outcomes,
- Providing community-based delivery of academic support programs, and
- Offering a critical lens for examining the first-year experience. (p. 3)

The learning community model has primarily involved students in academic settings rather than working professionals and broader community networks. It is undetermined if and how this model might fit the needs of NRLI Fellows and others they may choose to involve.

Communities of practice can be distinguished from a community of learning. As defined by Wenger (2006), communities of practice are people who share a concern or a passion for something they do, and they learn how to do it better as they interact regularly. Breaking away from the traditional academic audience, examples of communities of practice include: facilitators exploring novel techniques, scientists working on similar problems, or younger practitioners learning the value of negotiation from those who have more experience. The audience is predominantly practitioners. According to Wenger (2006),
members may engage in joint activities and discussions, help each other, and share information; the relationships they form enable them to learn from each other.

It is, however, the “practice” that takes this kind of learning community beyond a community of interest into one of sustained interaction for developing new tools and curriculum. Situated within a specific context, a community of practice embodies a collective learning experience about a particular interest. Those who are a part of the community of practice value the collective capacity and competence as they learn from each other (Wenger, 2006). According to Wenger (2006), there are a growing number of associations, professional and otherwise, that are seeking ways to focus on learning by reflecting on their practice through shared resources such as experiences, stories, tools, ways of addressing recurring problem, or specific knowledge.

Luke’s story describes the value of stepping back and reflecting on the work of practitioners, perhaps through a learning community or a community of practice. He focused on offering long-term strategies to consider in the development of a partnership. The first one pertained to maintaining a sense of balance. The second, to paying attention to the mentoring of others, who will help develop the partnership and eventually lead it.

Over time you can lose your focus. So from an individual standpoint, as you help achieve a greater good, ensure that you do not burn yourself out along the way. Then you’re no good to anybody. You need to interact with others to recharge your batteries. I’ve always found, regardless of the topic, just the opportunity to get back together again for an annual NRLA [Natural Resources Leadership Association, an informal network association of the Fellows] workshop and meet people that I’ve been in class with or know, is a great opportunity to put everything aside and recharge your batteries and refocus. You may have an Aha! moment where you’ve been exposed to a new thing and you go damn, if I’d only known that about eight years ago, but I can still use that. So recharging the batteries is a big thing.

Then, make sure that you have built-in redundancy so if you get hit by a truck, somebody else can pick up the flag and keep on going to help facilitate whatever group you have in place. That way the journey continues down the field and gets to the goal line. This is more about finding someone, mentoring them, and exposing them enough where they get it. They in turn can contribute different perspectives, a different dimension of skills and experience. This is important because when you’re doing this for so long you get a bit of tunnel vision, and every now and then, you need
to be slapped upside the head. Even if someone has a different perspective but understands what you’re trying to do, understands the kind of techniques you’re trying to apply, then this different spin has incredible valuable. This person could be within your organization, could be within your office, but they are somebody else to carry the banner.

Lastly, the partnership has given me the ability to communicate with others who started up similar efforts so they can to learn from our mistakes. We’ve created a network; a community of practice in an informal way has reaped benefits because others who have started up have hired fulltime people to run their conservation collaboratives. We hope to pull all the various partnerships together for a couple days, probably in late winter to share lessons learned, things that worked, things that didn’t work. There are at least six, if not eight partnerships across the state that we’re going to be inviting to do that workshop. So, more and more it’s about trying to build this community of practice by sharing information, by not being shy to admit what didn’t work and to share that so others won’t have to go through the same learning curve. The instructional value is realizing what the limitations were, where did you fall down, what worked, what didn’t work, how you pulled off some miracles, how you didn’t pull off others. You have to be extremely objective. Some people can do that, some people can’t. I think I can do that in this professional capacity because I have constantly conveyed what didn’t work to others who are trying to start up a new collaborative, to make sure they didn’t step in the same landmine field that I did.

Several topics were raised as potential topics for a learning community or community of practice.

**Online Resource for Process Management and Negotiation**

Ann and others discussed the value of the resources provided during the NRLI training, including the NRLI website.

The resources that were made available to us during the NRLI training were very practical and useful. I continue to go back and use my notebook to help me prepare for meetings or think about how to design public meeting.

A community of practice or a community of practice could consider whether there would be value in creating a social media site or a web site that allowed users to post process design questions and other kinds of collaborative or exploratory discussions.
Mentoring Opportunities

For Sophia, the timing was perfect for her to participate in NRLI. She was ready to challenge herself, knowing there were NRLI mentors to support her. The atmosphere was nurturing and comfortable, and yet there was a prodding way of learning and experiencing. Are there opportunities for mentoring that a Learning Community of Learning might provide? Is there an opportunity for undergraduate and graduate students to participate? For Fellows to develop special skills and knowledge? Those interested in shaping future mentoring opportunities could discuss these considerations or others.

Organizational Support for Inter-Organizational Work

Joan conveyed the level of support she received from her organization following her NRLI experience. She felt like there was ample support for her to apply or experiment with collaborative decision-making.

I did feel like there was support though there is also a lot of latitude in my job to do work in a way I believe is best. I certainly never encountered anybody that said no to the collaborative in the projects I took on. Never. Actually, when I left my state job, we had a little going away party and I told folks at that point I said, “The good thing about being in this organization is that you probably have a lot of freedom to take on more and so challenge yourself and do as much as you can. Make the best and make the most of it.” Where I am now there is an incredible amount of support and latitude also. I am very grateful for it. NRLI was one of the most useful things I’ve done for my career and in my career.

A Learning Community could explore ways that organizations could support experiential learning regarding collaborative work.

Transfer of Skills into Other Life Areas

Frank conveyed how much he enjoyed “the heck out of” NRLI, which, for him, had been an invaluable learning experience. What was particularly valuable to Frank was how the skills transferred to other areas of his life.

I could frame things, envision things, and use this very good base of understanding toward other experiences. I had a much better understanding after I completed NRLI, than I did before. And that hasn’t stopped at natural resource issues. These skills do not just apply to natural resources, and this has open doors for me. I served for four years on the local Habitat for Humanity board, two years as president, because of
what I gained from NRLI. It is a part of who I am now, so I place a lot of value on my overall learning experience.

A consideration for a learning community could be exploring how others have applied collaborative decision-making and conflict resolution skills into other areas of their lives.

**Attending to Civic Engagement and Education**

Glenn discussed the role of stakeholder processes in developing and encouraging civic engagement and education.

While I’m not surprised that people get very emotional about things that are gonna affect land or water at their home, I am a little bit surprised about the dedication of folks. A lot of the people we’ve dealt with are volunteers. Nobody pays them a nickel to come to any of the stakeholder meetings and pore over a number of technical documents and pull out the pieces that are meaningful to them. Nobody’s paying them anything for that. They’re doing that because they feel like they need to, they want to, it’s part of the mission of their organization, or a number of other reasons. But you know, to ask people to come to ten or to hundreds of meetings over a period of years in order to work out a plan for the next 50 years of a hydro project operation, is asking an awful lot. Yet, the response from the community has been outstanding. While it doesn’t mean we agreed with everybody, but it does mean you can walk away from the process feeling like this process gave everybody the best chance to be involved and help shape the future.

A community of practice or a community of practice could consider the role of learning community for developing and providing civic engagement opportunities and education.

**Principles for Guiding Decisions**

The study participants identified principles that have guided them as natural resource and environmental leaders. Similar responses were grouped together and then labeled with a thematic overarching principle. For example, *Improve the World from Where You Stand* is a thematic overarching principle. The individual principles that the study participants provided (without attribution) are listed under the seven thematic headings (see Table 13).
Table 13  
*Principles for Guiding Decisions*

<table>
<thead>
<tr>
<th><strong>Improve the World from Where You Stand</strong></th>
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<tbody>
<tr>
<td>Be willing to take risks</td>
<td>Recognize the value of taking personal responsibility</td>
</tr>
<tr>
<td>It is never too late to wake up and do something about something important</td>
<td>Ask, “who will I serve today? How will I go about it so that lives are improved and the environment is in a better place?”</td>
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<tr>
<td>Empower others, create space for them to do the best that they can</td>
<td>Be able to see something that needs to be done, dedicate yourself to it, get other people organized to help achieve that common goal, and being able to do that over years.</td>
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<tr>
<th><strong>Cultivate the Future and a World Others Can Enjoy</strong></th>
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<tbody>
<tr>
<td>Leave the environment in much better condition than it is today (in solving a problem, do not create larger or future problems)</td>
<td>Commerce to Conservation lens: Balance economic development, conservation, and resource protection with social needs of communities</td>
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<tr>
<td>Implement the plans and the programs that will continue to improve the environment</td>
<td>Research, evaluate, and monitor nature to inform decision-making</td>
</tr>
<tr>
<td>Work with others face-to-face for better solutions</td>
<td>Be persistent, restore areas previously harmed</td>
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<tr>
<th><strong>Generate and Practice Creativity</strong></th>
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<tbody>
<tr>
<td>Inclusivity: go beyond one’s border</td>
<td>Become reflective and flexible to encourage creativity, learning from natural processes</td>
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<tr>
<th><strong>Continuous Learning at Multiple Levels</strong></th>
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<tbody>
<tr>
<td>Change can occur at an individual level, at organizational level, and at a societal level</td>
<td>Change the way you think, not just what you think</td>
</tr>
<tr>
<td>Table 13 Continued</td>
<td></td>
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<td>---------------------</td>
<td></td>
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<tr>
<td><strong>Learn from other perspectives, challenge your own assumptions</strong></td>
<td>Learn from and listen to elders, both living and passed on</td>
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<tr>
<td><strong>Learn from the environment (biomimicry) as opposed to dominating it</strong></td>
<td>Recognize my own spirituality as part of the learning process.</td>
</tr>
<tr>
<td><strong>Manage Ecological Processes with Principles of How to Engage with Others</strong></td>
<td></td>
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<tr>
<td>Dialogue before demagoguery</td>
<td>Step back if you might escalate the situation</td>
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<tr>
<td>Determine science-based decisions that outline what “we” need to be for, rather than what “we” need to be against</td>
<td>Ask what others might do or recommend – face-to-face</td>
</tr>
<tr>
<td><strong>Recognize Natural Resources and the Environment as a Prism of Values</strong></td>
<td></td>
</tr>
<tr>
<td>Recognize your role as a “trustee or steward” as opposed to ownership</td>
<td>Accept that some things evolve over time</td>
</tr>
<tr>
<td>Consider external input in decision-making</td>
<td>Identify those with an interest in problem solving and support them in the process</td>
</tr>
<tr>
<td>Involve non-experts and community members in the environmental decision and planning processes</td>
<td>Educate about the origins of many quality of life features (source of tap water, electrical power); connect to the natural environment</td>
</tr>
<tr>
<td><strong>Reframe Your Thinking</strong></td>
<td></td>
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<tr>
<td>Challenge assumptions; understand meaning</td>
<td>Look to cyclical patterns in nature to reframe thinking</td>
</tr>
<tr>
<td>Maintain short term and iterative thinking while adapting and planning long term</td>
<td>Interpretation of the knowledge, “putting knowledge to work”</td>
</tr>
<tr>
<td>Recognize all kinds of leaders: leaders in positions, message leaders, directional leaders, facilitative leaders</td>
<td>Learn our way out of our current situation.</td>
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Lessons for the Road

A part of the interview process was learning from the study participants about lessons for the road. What could others learn from them and their experiences if they were to summarize this part of their leadership development? What would they most like to share with others to apply to their own situations? Would they offer the same kinds of “wisdom” or different aspects to a familiar story? And of these words of advice, is there a common dominator, something that can be reinforced for everyone?

Kate expressed her lesson for the road:

For many situations, you need people to sit down and talk. And just allowing people that space to talk helps misconceptions come out to light and eliminates some of them. Not always, but it is the time to test them.

Melody offered a few words of advice about the uncomfortable nature of conflict.

Even though it is still uncomfortable for many of us to deal with the controversy, I think it’s better to lay it out, without getting terribly emotional about it. I believe it is better to be open about it and try to deal with it rather than dealing with indirectly. I still struggle, very much, with conflict but I what I’m focusing on is being more proactive and getting practice in dealing with it.

Luke began with “Patience, Patience, and Patience.” Moreover, he would not be the last of those interviewed to convey the importance and the value of patience in managing long-term process work. Nor would he be the last to discuss the role of paradigm shifting and the iterative steps it takes for this occur.

It doesn’t happen overnight, and the old adage that there’s more than one way to skin a cat holds true. If you’ve hit a wall you’ve got to step back and you’ve got to look at some of the skill sets you learned, and look in your toolbox and see if there’s another tool that might work to pry open the door so that you can keep moving forward.

The other part of it is, from an individual standpoint, you can’t be in this for any personal gain. It just doesn’t work that way. I mean, you have to embrace a community goal and be vested in that community goal. I have a little sign that says there’s nothing a person can’t accomplish as long as they don’t care who gets the credit. The most important lesson is to let those who need to take the credit, take the credit, because it will pay off dividends in the long run.
It takes iterative steps and reinforcing the fact that whatever process you’re using is working, and reinforcing that to the stakeholders yet being aware that everybody is getting what they need out of the process to stay engaged. It won’t happen overnight. We’re not anywhere near what I would call the partnership’s end state and it’s been 10 years. And we didn’t kick into overdrive for probably three years or better into the partnership, until our stakeholders were convinced that things were working right. So it takes time to have people shift their paradigms. It takes time for people to see the proof of the concept, for them to accept that this was a good thing.

Joan said a whole flood things came out for her to share as lessons for road. Though they may seem somewhat cliché, she mentioned, they are very personal, and from a personal growth perspective.

I think people need to be patient with themselves and the processes you have to go through to reach sound results. Don’t give up; if you encounter some rough waters, things will work themselves out. You won’t have all the answers; you don’t have to have all the answers. Bring a diverse set of people to the table and they will work things out themselves. And in the end they’ll be better and more aware of different perspectives. It’s amazing how much you can get accomplished by bringing different people together. You can’t imagine in a million years what’s going to come out of a group but bringing them together, seeing it happen and what eventually comes out is amazing. It’s that whole creative process… it’s enabling people to work things out.

I used to plan everything out. I’m less likely to do that now because it’s going to work its way out, if you give it the space to happen. That’s where the hope comes, I think.

Another suggestion, if you’re in a meeting where they don’t seem to be going anywhere, try to be present. Don’t be somewhere else in your mind but stay right there and give your attention to the situation. This is leadership. Also, trust in others and in yourself.

I think if you want to have success or increase your chances for success, go ahead and address awkward moments head on. Go ahead and try to get at controversy if it shows up, if you feel like things aren’t going well. It’s probably got something that’s important to the conversation. And if you feel like you’ve not done the proper follow-up or if you feel like you’ve mis-stepped somewhere, don’t let that ride but address it. It’s better to address issues sooner rather than later if you feel like there is some conflict within a group or within you and somebody else. Address it to maintain that trust to keep moving forward together… One last thing, again, bring people to the table that you may not want or you may think might be controversial.
Randy offered the following lessons for the road as a means to deal with contentious issues and regulatory compliance.

My first lesson is to focus on the goal, not the individual. Then focus on the process after you’ve identified your goal. Allow for the process to accommodate the needs of the others, and if you subordinate your needs, you’ll go a long way. Create value for the other person, recognize the other person’s values, judgments, needs, and that sort of thing despite even if they appear without merit to you. By giving them value, it allows them to vent (thinking of hostile crowds here) or explore their thinking first. So seek to understand their perspective first.

Then be prepared to negotiate; do your homework. Know where your final points are while allowing yourself to be surprised and have new information. That’s one of the things that we ask ourselves during a mediation process, what are we learning that we didn’t already know? What have we learned that could cause us to re-think our position? If we can send the signal that we’re learning back to the other side that’s a big thing for them. Then they know they’ve been heard. People like to be heard.

Sophia conveyed the importance of recognizing the role of community leaders in problem-solving the environmental issues, in particular the social dimensions (e.g., sharing environmental costs and benefits equitably, affordable access to water, role of policy on public health, environmental justice concerns) that are often wrapped up in these issues.

There is a role for community members in the environmental decision-making process. We have a voice; we just need to stand up and make ourselves a part of the process. I think that service to the community is key to the success of the community, and to the greater fulfillment of our own lives, as we step outside our own insular life in preparation for the 21st century. I propose we live our lives of taking care of ourselves and doing the things we’re interested in, that interest us and that benefit ourselves and our families but within the framework of the global community. And that we stop thinking that our own happiness is the only thing that matters.

James stated that for him, the hardest thing to do is staying at that center point of his value and philosophy matrix and maintain a balance. Otherwise, James believes it is easy to get pulled toward some extreme. Before getting pulled into a specific situation, James assesses the circumstances and determines: “What’s the wisdom behind the next move or the position behind all this knowledge?” As a leader, he believes it is important to ask this question.
You know, we’ve got to listen to the science, we’ve got to listen to the law, we’ve got to look at the long-term versus the short-term, we’ve got to avoid partisan politics, and there are also the human values we’ve got to balance. As the final decision-maker in our organization, I need to ensure that I have a solid perspective. So it’s important for me to take time to maintain my center through meditation, to do creative things that keep me from getting locked into a mindset that could become a vulnerability. I’d be less flexible and adaptable, moving towards convincing myself that I’m right.

So constantly questioning and having tools that inspire questioning and thinking of the world in new ways is crucial. And knowing when you need to take a break, when you need to reenergize. When you continue to charge up but you are not holding the charge for long, it is time for a break.

Ann offered her insights about leadership lessons for the road.

Well, you don’t exclude the people you think are gonna put up a fight. I mean, sometimes there’s a tendency to want to avoid your adversaries, real or potential. Sometimes we build up our fears around tasks like public involvement. Then when we accomplish the task, we realize it went much better than we thought, and actually helped to accomplish some things we could not have accomplished otherwise. It was valuable. It didn’t have the negative outcome we were expecting. So, test your fears and let people know what you are doing; interact with them.

Glenn offered several leadership lessons. His first suggestion was to take note of who is not talking during a stakeholder meeting, and ensure that you have created a window between you and them if at all possible. Next, he discussed the importance of a group charter and ground rules for a stakeholder process. Lastly, he offered his insights about how to test for the willingness of a stakeholder and the convener to engage in a negotiation.

Take note of who is not talking during meetings. Take time to ask questions, and to get to know that person. While they may say, “I don’t have anything to say,” it is an opportunity to build a working relationship. It may create a window between you and that individual [organization], something you can use and build on if an unforeseen issue arises.

Develop a group charter that covers all of the long-term procedural components of the process. You really need one. One small example of the charter is procedures about attendance. Say several people come to the first two meetings and then you won’t see them for the remainder of the year. Yet, when it’s time for final negotiations, they’re back, ready to participate in the negotiating process. If an attendance policy was not described and agreed on by the group, you may have to allow the returning members
to the “negotiation table.” This is very ineffective to the process [they have not been at the table developing a shared framework nor contributing to the generation of alternatives] and it is really disrespectful of others who have invested all the time to get to a common place that they can work from.

Develop ground rules that are included in the charter and enforce them. Once the group agrees on a charter, you need to enforce that charter. There needs to be some common expectations about courtesy and truthfulness, avoiding sandbagging, sharing what you know that’s relevant. Don’t hold it back and set traps for other people. Very few people in my experience approached a long-term stakeholder process to deliberately undermine it but you need to consider situations like this and how the group will operate. Then decisions that are made during the process are based on the stakeholders’ decision-making criteria that the group agreed to in the charter.

Don’t go into a collaborative decision making process half-hearted. If you want people to come in and help you make a significant decision that affects them, you need to mean it. They’re gonna spend their valuable time doing this. In the end, it won’t be the solution that you wrote down before it all started. If it really is a collaborative, it’ll be different from what you thought the end would look like. It’s difficult to get corporations to understand this level of risk taking; to risk that in the end either you won’t get to a solution at all or that the solution all the stakeholders think is the right one is less attractive to you financially. It’s what you’re betting on; what you thought your BATNA (best alternative to the negotiated agreement) would be. And you’re always gauging against that before you make decisions, is this really something that I want to do, want to move forward with or could I get a better outcome for my interests somewhere else? But if you’re the convener, and you and everyone else just went through an intensive collaborative effort only for you to decide you’re going to pull the rug, and not sign on (which you could do), imagine the sense of wasted time, frustration, and outrage there’d be to deal with. Although anyone can exercise their BATNA, you hope it is not at the last minute – the stakeholder group should have known earlier on where the agreement was not meeting the interests of each stakeholder.

How does one test the good faith of a stakeholder? You’ll reach out to some people in a collaborative process who’ll say they’ll participate and will work to reach a common solution, but they did not intend to settle over anything regardless of what you offer. You’ll need to test for the willingness of each individual to participate, since everyone is investing time in the process, in both the risks and the rewards. One way to test for the willingness to negotiate in good faith is to have an application process. Design an application that asks about practical experience in reaching solutions for natural resource issues. And if applicant’s response is: “I have no
experience but by the way, here are all my interests,” and every one of the interests is actually a position or the interest is one interest and it’s a position.

This could be a strong indicator that you might not have the right person to participate in the collaborative process. And having folks who are very vocal can really detract from not only the efficiency but probably the effectiveness of the total process. You’re doing the process a disservice by letting people be there who intend to manipulate the process. And it can be a source of frustration for everybody. It can be the cause of people quitting, they just stop coming, realizing some other folks do not plan to negotiate in good faith and they do not intend to waste time. Just because somebody behaves badly doesn’t necessarily mean you want to exclude them. However, you do want to test for their willingness to engage and contribute to the process.

How does one test the good faith of a convener? One way to test for how somebody’s gonna act is how have they acted. Look at previous decisions that they’ve made. How did they make them? Were those informed or shaped by the stakeholder input or what they wrote from their office? Another way to test might be to present them with hypotheticals. For instance, say you had 50 people show up at a particular meeting and all of them said what they wanted the future to look like this. How would you act? How would you react to that? Might be a good exercise, for instance if they had chosen you to facilitate some kind of stakeholder process. Try out some of those hypotheticals on them about what the end might look like before convening the stakeholders. This would help determine if they have really thought about the kinds of things stakeholders may want and whether they’d dismiss it out of hand or say “Well, I don’t know exactly how we would respond to it but if it was like that, we could tweak this piece and this piece.”

You know, if they’re asking you questions, maybe they really are thinking about a collaborative answer rather than just trying to validate what they already think they want to do. Third, quiz them about their internal decision making process. Who will make decisions about what goes into the agreement? Who in your management chain do you have to go to, to get those decisions validated or approved? What is their history of being involved with collaborative processes? In our case we did not have a significant history so we might not have passed this test! I think eventually if you’re not really sincere in a stakeholder process, you get exposed. People are not going to sit there and let you dictate to them. Folks will want to hear the “potential solutions” being generated and if they all seem to fall on the floor [not inclusive of the interests of others], well this limits movement forward. Do that enough times and it becomes evident nothing is sticking. Eventually, a convener will get exposed who is not genuinely trying to negotiate.
Mark shared his thoughts about what he values in younger people and what he would like to caution them on as they move forward in their careers. He really values their energy and readiness to go.

Sometimes you’ve envisioned the answer before you’ve had the chance to explore the situation. I’ve seen that in myself, a narrow-minded focus, where I have not begun to gather data about the situation before I am all out preparing for the answer to address the situation. We need to take our time to ask questions and gather data before rushing to solutions.

My second lesson for the road – make sure you understand what persons are telling you or trying to communicate to you. Some time back I was expected to give a presentation. I thought I heard the particulars and provided a presentation to address those. Well, it was not what he had expected. So I looked pretty bad in the end. It was really frustrating to me because I spent a lot of time on it, I had facts and data, but it wasn’t what he meant. That was the “hello” for me, it would have been so easy to turn to him and follow up before I did all that work. I could have tested our understanding about the expectations: “Let me make sure I understand you” or “Let me make sure I understand what you’re asking me to do.”

Frank described some valuable lessons he has learned through experience, in particular about recognizing what his assumptions might be about a situation or when different assumptions might surface during a discussion or in problem solving with others.

One thing that I learned is never go into a situation thinking you’ve identified all the issues, identified all the stakeholders, or assume you have the full assessment. If you proceed without interaction or testing your ideas, whatever issue you’re dealing with is at risk. There’s a certain amount of risk that you’re accepting because of your doing that. Sometimes that may be okay, but my experience has been you’re much better off confronting whatever that issue is and dealing with it, in working through with others. Don’t make assumptions. Give yourself enough opportunity to identify what those issues are and who the stakeholders should be.

What could they apply to their situation? Well, I gained a lot of awareness about myself and the social situations I might encounter. However, I still get surprised at things people bring up; yet, I don’t get as frustrated in dealing with them since letting others have their say is part of the process. In addition, if you have an idea you think is right and best, don’t take that away from someone else who has a stake in that issue. And if you don’t know what the vested interest is, don’t assume you do until you’re at the table, in the process with them, and listening. They may shed a completely polar opposite light on the issue. Give them the opportunity to do so.
Lastly offered Frank discussed the significance and importance of more leaders “walking the walk,” and what it meant to him personally. He believes if integrity is important to you as a leader, then you operate with integrity. During the tough issues, you deal with those issues with transparency. For Frank, a leader takes it a step further within a natural resource context by applying on a personal level, not just a professional level, those techniques, rules, and purchasing choices that you ask others to do.

You know, my job is to manage storm water in a coastal municipality, so it’s safe for our community and it’s safe for our environment. I need to abide by the same rules we ask of our community. For instance, if I had a dog, I’d abide local policies and clean up after my dog. At my home, I’ve got two rain barrels collecting rainwater and have my own compost facility. It is important to me to take the ideas we promote as good things for homeowners to do, and to do them myself. To me, that’s setting the right example when it comes to energy conservation. At our home, we made a conscious decision to spend a little bit of extra money when we changed our HVAC unit to a higher rating because we knew it was going to be that much more efficient.

This is what it means for a leader to “walk the walk.” You do things within reason and within your ability, those things you are asking others to believe in. This brings it home to where it really matters and it matters to my family. So when I’m encouraging communities and homeowners to take part, they can go to my home and see the same thing. I am not asking them to do anything I’m not doing myself.

**Summary**

The purpose of Chapter 5 was to present and discuss the nature of the participants’ experiences based on in-depth interviews. Presented in their voices, their individual stories were analyzed as a collective experience that occurred over a 10-year period. The participants remained anonymous to each other during the study. Their stories and comments responded to the overarching research question for this study, which was: *What was the nature of the experiences of leaders who participated in a natural resources leadership institute?*

Five major categories developed from the in-depth and rich perspectives of the participants:

1. Context of the NRLI Learning Experience
2. The Practicum: Planning for Change in Interorganizations
3. The Rationale of Leadership Development
4. Integration of Leader Development and Leadership Development
5. Shaping a Learning Community or Cultivating a Community of Practice

Additional thematic findings emerged from the major thematic topics as a result of ongoing analysis. Listed in the respective discussions of the five primary themes are auxiliary thematic findings.

Context in the NRLI learning experience is a dialectic union of personal and external forces; a dynamic notion used by the learner to make sense of and manipulate their learning content (Baptiste, 2001). The Context of the NRLI Learning Experience referred to in this study is the setting in which the learning occurred. The setting is comprised of the larger physical and sociocultural environment, including power dynamics, that learners traverse to participate in the learning experience, and the immediate physical and sociocultural environment setting of the learning environment that includes the actual physical environment of the workshops and the learners and instructional team that frame the immediate sociocultural environment.

Context is the situation, placing people and action at a point in time and space, as a way to understand what they say and do. Without context and its rich clues for interpretation, it is difficult to decipher or understand the experiences that are presented in a setting or situation. Lightfoot posits, “We have no idea how to decipher or decode an action, a gesture, a conversation, or an exclamation unless we see it embedded in context” (as cited in Patton, 2002, p. 63).

During the interviews, the participants identified various elements that shaped the nature of their overall learning experience. Within the thematic category of context of the NRLI learning experience, four findings emerged:

1. The Confluence of Learning: Merger of Science and People Education (Adult Learning, Leadership, and Environmental Conflict Resolution)
2. Diversity as a Source of Learning
3. Credibility of Institute Leadership and Others
4. Learning, Engaged, and Applying!

The first categorical topic, *Confluence of Learning: Merger of Science and People Education*, was the blend of science education with people education: adult learning, leadership, and environmental conflict resolution. Learning about a broad range of natural resources and environmental issues facing North Carolina was one of the more meaningful experiences for the study participants. As they considered the substantive nature of issues, they were able to understand them from multiple perspectives. This entailed learning from the stakeholders about the successes and limitations of collaborative decision-making; it entailed learning from the facilitators about process design and the limitations of process work.

The second major theme to develop was *Diversity as a Source of Learning*. Using a very broad definition, diversity included such aspects as affiliation of the participants, gender, and the number of years in professional experience. The diversity in affiliation, in professional and personal experience in the field was used as a mechanism to encourage in-depth and informal learning in simulated and real-world situations. For example, one year, one of the study participants was involved in a controversial issue that he and another Fellow were attempting to resolve. As they participated in the NRLI learning experience together, they worked through some of the difficult aspects they were encountering.

A surprising theme to emerge was the *Credibility of Institute Leadership and Others* who were able to speak from experience about their roles as facilitators of environmental decision-making processes, both from their successes as well as failures. Moreover, instructional materials, including several role-plays, were developed from real world experiences, lending authenticity and credibility to the teaching experience through a blend of theory and practice.

The last finding, *Learning, Engaged, and Applying!*, enthusiastically endorsed the immediate value of the learning experience with several of the participants. Annual evaluations and the practicum report support the finding that participants apply what they
have learned to situations at work. In Chapter 5, the examples presented were of study participants directly involved in stakeholder processes which provided a real world learning environment for them to try out new tools such as “preparing to negotiate.”

The next section, *The Practicum: Planning for Change in Inter-organizations*, two trains of thought of emerged: *Distinguishing the NRLI Practicum Framework and Analyzing the Inter-organizational Practicums of NRLI*. The section began with a brief review of the literature on practicums. It was apparent from the review that the NRLI practicum model is distinct from the more traditional academic model. A major distinction is the audience: the traditional model often targets students without work experience, while working professionals are the predominate audience for the NRLI practicum model. An analysis was conducted on the NRLI practicum model, based on the study participants’ comments. Four findings resulted in the *The Practicum: Planning for Change* category: *Distinguishions of the NRLI Practicum Model, Successful Aspects of the NRLI Practicum Model (Based on Participant’s Comments), Limitations of the NRLI Practicum Model (Based on Participants’ Comments and Researcher’s Knowledge), and Contributions about What Makes a Collaborative Successful (from the Participants)*.

The role of the practicum was presented within an inter-organizational context, representing the intricate connections across communities, organizations, and jurisdictions that manage, utilize, and benefit from natural resources and the environment (Gray, 1989). Using Westley’s (1995) classification of the origins of inter-organizational collaborations, three practicums were examined: a vision-led collaboration, a learning-led collaboration, and a planning-led collaborative. This framework assisted in discussing the strengths and vulnerabilities of three NRLI practicums. The greatest measure of success of the NRLI practicums is taking into account the cumulative role all of the practicums since 1995.

The eleven participants discussed the value of the practicum in their learning experience. Since their NRLI experience, most of the study participants have been involved in a collaborative effort, predominantly external to their organizations. Mark has not been
involved in an external effort, but like Frank and James, he applies collaborative principles within his organization and how he leads in working with others.

Sophia saw the greatest learning curve as a result of her practicum. She experienced challenges in the application of her project because of unclear problem definition and lack of an assessment. Yet for Joan, the practicum experience was not a major contributor to her overall learning experience. Her practicum lacked a challenging aspect to which she could apply the lessons she had learned and grow as an individual. For Ann, the practicum began the practical application of the theory taught in the classroom sessions. She used the practicum to encourage her organization and others to help complete the educational exercise.

For Kate and another colleague, her learning experience began with a simple request and grew into a long-term collaborative that has developed several products for local use and resource decision-making. Mark increased his knowledge and appreciation in working with conservation groups through the inter-organizational collaborative developed. James facilitated an internal development and organizational structure needed by his organization, and went on to apply the knowledge he gained to one of the most visible projects in North Carolina.

Randy developed procedures that focus on the collaborative nature of how he and his staff can work with other organizations, communities, and entities that are still used today. Frank used his practicum as a window for determining other opportunities for his coastal program to develop, including making changes in their current public outreach efforts. Lastly, Luke, indicated how his practicum contributed not only to his learning experience but also to his organization, a project that continues today and has had sizeable impacts in conservation of lands and species recovery.

*The Rationale for Leadership Development* made use of an earlier definition offered by Dixon (1993), that leadership development is about building the capacity of groups of people to learn their way out of unforeseen challenges and problems. This section explored the *Motivation for Participation in NRLI* and the *Role of Leadership Development in*
Participation in the NRLI learning experience involves an extensive commitment of resources and time. The participants’ motivation for their participation in the NRLI learning experience included:

1. self-advancement (advance my career as a result of participation);
2. leadership beyond self-advancement (influence the process from where I stand as I build the leader in me and challenge the leader in others);
3. expanding knowledge about natural resources and environmental issues in North Carolina and the complexities surrounding these resources;
4. continuous, relevant, and applicable learning that prepares and readies leaders for current and future challenges; and
5. connecting to a network of learners (develop the capacity to work across sectors on issues of complexity and uncertainty toward insightful and integrative solutions).

A particular thread that runs through the list of motivations is a program philosophy that integrates both leader development and leadership development. The participants valued a continuous learning experience, one that is relevant and applicable, that prepares and readies leaders for current and future challenges and yet provides an opportunity for self-advancement. Although some of the participants initially emphasized the development of their interpersonal capacity in networking with others (the leadership development aspects of the institute), the study participants found value in the development of their intrapersonal capacity for critical thinking, self-reflection, and self-control (the leader development aspects of the institute). They recognized the importance of building an internal capacity for self-awareness and critical reflection and the role of intrapersonal development in meaning making and relationship building.

The participants then discussed the Role of Leadership Development in Managing, Conserving, and Protecting Natural Resources and the Environment. Eleven projects were divided into four topical areas:
1. Management of natural resources and environmental issues (example: Setting Operational Precedent for Water Management)

2. Conservation of natural resources and environmental issues (example: Stewarding Natural Spaces).

3. Protection of natural resources and environmental issues (example: Beyond Protection of a National Refuge)

4. Management, conservation, and protection of natural resources and environmental issues (example: Linking Local Communities to the Future of Management, Conservation, and Protection Processes)

In addition, five characteristics were attributed to the role of leadership development:

- Learning to Learn with Others
- Continued Practice in Process Management, Negotiation, and Communication Skills
- Help Others to Develop Inter-organizational Frameworks
- Build and Maintain Working Relationships
- Someone Becomes More than a Party of One to Champion the Process.

The section of *Integrating Leader and Leadership Development* discusses the *Practice of Leadership: Release the Energy of Others to Make Things Happen, Learning Leader, Learning Leadership, and the Integrative Practice of Leader and Leadership Development Framework*. The practice of leadership brings into view the various dimensions of leadership as told by one of the participants. This narrative is followed with an overview of learning leader, learning leadership, and closes with a description of an integrative framework to describe the integration of leader and leadership development and the numerous elements that make this a holistic and interactive system. It is organic rather than mechanical, whole, rather than a part.

The example of the *Practice of Leadership* described an individual in the role of manager, and from his perspective, which was directive, in command, and focused on his organization. The description was managerial: making the decisions, ensuring the goals were met, being in charge, and directive. In a public organization with a strong hierarchical structure, management appears to be essential in directing goals and human resources. Yet,
leadership is required for inter-organizational work (Feyerherm, 1994; Gray, 1985, 1989). For example, for Randy and his staff, working with other organizations and communities was predominantly educative and collaborative. Randy attended to creating an internal environment so that his employees could do an effective job in building working relationships and collaborating with communities and other agencies and organizations.

Learning leader and learning leadership is the cornerstone of the Institute for building the individual and collective capacity to effect change. Education and support serve as the primary mechanism to help a diverse group of leaders seek consensus on issues affecting the sustainable development of North Carolina’s natural resources and the quality of the environment. Development occurs through two conceptual perspectives: an individual and a relational lens (Day, 2000).

Leader development, the individual lens, is primarily focused on intrapersonal development and on the knowledge, skills, and abilities associated with formal leadership roles (Day, 2000). According to Gardner (2006), building one’s intrapersonal competence facilitates the development of self-awareness and the ability to manage oneself. In the Leader Development section, there are two thematic findings: Discovery, Awareness, and Reflection: The Inner Work, and The Listening of Leadership.

Leadership development, the relational lens, is primarily focused on interpersonal development; on the knowledge, skills, and abilities that build networked relationships among individuals to enhance cooperation and resource exchange in creating organizational value (Day, 2000). According to Gardner (2006), building one’s interpersonal competence helps form an accurate understanding of others and relationships, allowing one to understand and work with others. “Leadership development,” says Day (2000), “can be thought of as an integration strategy by helping people to understand how to relate to others, coordinate their efforts, build commitments, and develop extended social networks by applying self-understanding to social and organization imperatives” (p. 586). There are two thematic sections, Sharing the Road: Managing the Process while Negotiating the Process and
Leadership as Relationships: We are More than the Professional Statements We Make to the Public.

A framework of the Integrative Practice of Leader and Leadership Development for Natural Resources and Environmental Leadership was developed. It is based on the premise that leadership is the individual and relational lens, the managerial and the leadership lens. Leadership and Leadership development have traditionally been associated with the following dimensions:

1. the practice of leadership is the domain of the individual, often someone with formal authority and position,
2. the leader in leadership is about leading an organizations, not an inter-organizational network
3. Leadership is what a leader does and decides, not what is decided by the leader and the collaborator.

In this example, additional dimensions are added to the construct of leader, leadership, and leadership development. Natural Resources and Environmental Leadership is best understood as a process that involves two levels of influence (individual and organizational) and two types of influence relationships (internal and external) (Addor et al., 2005; Portugal & Yukl, 1994). According to Day (2000), leader development is the enhancement of the human capital; and leadership development, the enhancement of social capital. Leadership development can be considered the development of the leadership processes in context, as well as the development of leaders as individuals. The following dimensions represent an integrative strategy for leadership development in the future:

1. The practice of leadership is both the domain of the individual and in the collective ability of people, either with or without authority, occurring within a context of interactions to serve a mutual purpose. Roles can be interchangeable; leadership can be emergent. Leadership is shared, distributed, and relational. It is geared toward building relationships, networks, change, responding to conflict, and situations (tools: abstraction, perception, and knowledge).
2. The leader in leadership can be within an organization, but leadership often works from an inter-organizational or stakeholder or partnership system), mostly for the benefit of the organization and links back to the organization.

3. Management is what a leader does and decides, does to followers and collaborators. And leadership is what leaders and collaborators do together to effect a mutual purpose.

The NRLI model is used to demonstrate the importance of leader development and leadership development. Although Day (2000) contends that there is a need to combine the traditional, individualist approach to leader development with a more shared model, in the NRLI model, the emphasis is more on leadership development as distributed, shared, and relational, though individuals are critical for linking back to their organizations and to internal constituencies. Already there are examples of peer-to-peer working relationships, broad-based partnerships within the state, and several inter-agency initiatives. This type of networking and cross-sector learning serves as a prime method of enhancing social capital in an organization (Day, 2000). Shifting from hierarchical models of leadership to heterarchial models that bring together both elements of networks and organizations, may prove to be the most relevant structures for the 21st century (Sandmann & Vandenberg, 1995).

Several Fellows would like to expand the traditional NRLI Fellows educational event into a Learning Community, or as some have identified, a Community of Practice. In fact, each of the Fellows interviewed for this study would like to use this interpretative study as a way to leverage the discussion about collaborating on current issues in the state, expanding the capacity for collaborative decision-making, and considering additional ways to prepare future leaders for the challenges they face in the 21st century.

Already there are examples of peer-to-peer working relationships across organizations in the various conservation partnerships throughout the state and in several inter-agency initiatives. Networking often serves as the prime method of enhancing social capital in an organization (Day, 2000). Continuing the shift from hierarchical models of leadership to heterarchial models that bring together elements of networks and organizations
may prove to be the most relevant structures for the 21st century (Sandmann & Vandenberg, 1995). Several topics for discussion were proposed, including: Online Resource for Process Management and Negotiation, Mentoring Opportunities, Organizational Support for Inter-organizational Work, Transfer of Skills into Other Life Areas, Attending to Civic Engagement and Education, Principles for Guiding Decisions, and Lessons for the Road.

In *Lessons for the Road*, the participants summarized part of their leadership development journey as a way to share what they had learned from their experience and thought important enough to share. Was there a common dominator, something that can be reinforced for everyone? Their responses: patience and courageous face-to-face conversations matter – they make a difference when agendas are mutually developed with purpose and intention, even when it is uncomfortable to do so; and taking a step back ever so often to recharge is a good thing.
CHAPTER 6

IMPLICATIONS FOR PRACTICE, RECOMMENDATIONS FOR RESEARCH, AND CONCLUSIONS

In Chapter 6, an overview of the purpose and the significance of the study is presented, followed by implications for practice and recommendations for future research based on the findings. The final section of this chapter presents conclusions of the research and parting comments from the researcher.

Overview of the Study

The purpose of this qualitative study was to explore the experiences of natural resources and environmental leaders who participated in a leadership development institute and situate these experiences within adult learning theory.

The significance of this research was introducing an adult learning model, a system of learning tailored to natural resources and environmental leaders as a way to facilitate integrative solutions to complex resource and environmental problems. In this model, additional dimensions are added to the construct of leader, leadership, and leadership development.

The results of this study contributed an interpretative body of knowledge about the nature of experiences of leaders who participated in a natural resources leadership institute and how this knowledge:

1. Intersects with a contemporary and historical body of knowledge in adult education, leadership and leadership development, environmental conflict resolution, and qualitative research on leadership and leadership development;
2. Enriches understanding about the many facets and the complex nature of leadership in the natural resources and environmental profession;
3. Links actions and impacts in an environmental-socio-economic context between local, county, state, regional, and national initiatives; and
4. Contributes to the preparation of natural resources and environmental leaders for the 21st century.

An analysis of the participants’ individual stories documented a collective experience that occurred over a 10-year period. As they responded to the overarching research question for this study: *What was the nature of the experiences of leaders who participated in a natural resources leadership institute?*, five primary themes emerged from the in-depth and rich perspectives of the participants:

1. Context of the NRLI Learning Experience
2. The Practicum: Planning for Change in Inter-organizations
3. The Rationale for Leadership Development
4. Integration of Leader Development and Leadership Development
5. Shaping a Learning Community or Cultivating a Community of Practice

Based on the findings, implications for practice were engendered, including implications tailored specifically for the institute. A section on recommendations for future research follows implications for practice, and the chapter closes with conclusions of the research.

**Implications for Practice**

A key goal of research in the social and behavioral sciences is the improvement of practice (Carnine, 1997, p. 363). Carnine posits that research ought to be a vital resource to instructors (teachers), particularly as they work with diverse learners. By elevating substance and concepts, practitioners learn from other practitioners as well as from theorists about unique approaches to use, why to use them, and how. Eight implications for practice resulted from the study.

**Building the Capacity in Learning to Learn Our Way Out**

Context is a dialectic union of personal and external forces; a dynamic notion used by the learner to make sense of and manipulate their learning content (Baptiste, 2001). John W. Gardner (1990) said,

Leaders cannot be thought of apart from the historic context in which they arise, the setting in which they function (e.g., elective political office), and the system over
which they preside (e.g., a particular city or state). They are an integral part of the system, subject to the forces that affect the system. (p. 1)

Natural Resources and Environmental Leadership is best understood as a process that involves two levels of influence (individual and organizational) and two types of influence relationships (internal and external) (Portugal & Yukl, 1994). Leadership is more likely to be successful if natural resources and environmental leaders understand how influence processes at the individual and organizational level are interrelated. Without interrelations between key individuals inside and outside organizations, policies and programs are unlikely to be implemented (Portugal & Yukl, 1994); and collaboratives are unlikely to be initiated.

For the 21st century, leadership development will prove to be an integrative strategy that links leader development with leadership development with more emphasis on the post-industrial definition of leadership offered by Rost (1993a):

an influence relationship among leaders and followers who intend real change that reflect their mutual purposes. Leadership is not what leaders do, but it is what leaders and followers do together, meaning the essence of leadership is the relationship, not the leader. (p. 145)

The NRLI is an adult learning model that demonstrates an integrative strategy of leader development and leadership development, leading to the expansion of cross-sectoral and cross-cultural interrelationships between leaders, organizations, and inter-organizational networks. A system of learning, it is simultaneously joint, cooperative, vertical, horizontal, and interdisciplinary in its character, philosophy, and structure, a conceptual framework to help “learn our way out” (Finger & Verlaan, 1995, p. 505). Shifting from hierarchical models of leadership to heterarchial models that bring together both elements of networks and organizations is proving to be the most relevant structure for the 21st century (Sandmann & Vandenber, 1995).

Marton-LeFevre and Mehers (2007) discuss a similar system of learning (LEAD) used to build the capacity in an international context. LEAD is designed to create the social capital needed for sustainable development. The individual’s abilities and their relationships with others are strengthened through leadership development, as learning is inherently social
According to Marton-LeFevre and Mehers (2007), it is not always easy to develop the leadership capacities needed to fit the requirements of sustainable development due to the silos of disciplines in the classical academic settings. The classical educational model limits the ability to contribute to sustainable development; thus, a non-academic approach for LEAD is supporting collaboration and peer learning among a diverse, multinational network of professionals.

Because environmental issues are burgeoning and contentious, the premise of NRLI is alternative thinking about leadership that helps resolve or manage these interconnections and interactions. Given the intricacies and connections between the environment and society, problems faced by organizations are becoming “environmental” because of an increasing human population, broader availability of information, and the need for involvement in decision-making by the larger populace (Gordon & Berry, 2006). O’Sullivan (1999) described the Western tendency to separate understanding of natural systems from human systems, in spite of the innate coupling of individual, societal, and ecological systems that are together in a combination of competition and mutual dependency (Bateson, 2000a).

**Developing Future Leaders through Science and People Education**

Luke and the other study participants believe there is a crucial need to teach science education, like biology, along with the people education, to natural resources and environmental professionals. Luke in particular believes the system is “totally lacking in the traditional educational process,” that science and people education should be a requirement for the future development of natural resources and environmental leaders. As Mark and James discussed earlier, too often professionals join the natural resource field because they do not want to deal with people. Future leadership is needed that will embrace the concept of teaching science and people education, including the technical, interdisciplinary, and interpersonal skills.

An implication for practice, then, is determining the “how, when, and where” to pull together science, adult learning theory, leadership, and environmental conflict resolution in order to offer this type of learning experience to college and university audiences and to
rising juniors and seniors. Incorporating confluent education, using teaching concepts as both a process of instruction and learning, integrates the affective and the cognitive domains in individual as well as group learning (Brown, 1990). Traditionally, the education of professionals involves a greater emphasis on the cognitive aspects of teaching and learning, such as comprehension, synthesis, analysis, evaluation, and the development of skills and concepts. Yet, the affective domain of learning is just as crucial, including the learner’s values and motivations, their attitudes and perceptions, and their assumptions and stereotypes, particularly with respect to controversial issues. The affective domain can limit, inhibit, or enhance the learning environment.

Luke provides examples:

The skills to effectively interact with people, to be able to see their viewpoints, appears to be lacking in some people that are in our business. Learning these skills ought to be as big a part of the curriculum to develop future natural resource leaders. I cannot say that enough, even in my own organization. There have been times during a meeting when I’ve heard a colleague make a statement that I cannot believe they just said. For me, if someone takes the time to understand what I think about an issue, who asks questions, and is actually listening to me, the value of that simple interaction is immeasurable. We just do not do a good enough job training people about the importance of interacting with others.

The confluence of science-based education with people education is the coming together of natural resources and environmental science and policy with adult education and learning, leadership, and environmental conflict resolution. The gathering together of traditionally separated disciplines provides an integrated and multidimensional perspective on learning and the context in which the learning is situated (Merriam, 2008). The integration of subject domains occurs across as if they were one subject (i.e., natural resources and the environment, leadership, and environmental conflict resolution) as they are discussed, examined, role-played, and applied during a leadership project.

**Collaborating on Critical Issues of the Future**

Science education of the future, should involve the five most important natural resources and environmental issues of the 21st century as identified by the study participants.
The five major issues they identified were climate change; water availability, quantity, and quality; alternative, new, and renewable energy; population growth; and societal change in thinking. Educational activities would include the ten critical topical areas the participants forecasted (e.g., management of open spaces for recreational use or preservation, increased disturbances and natural disasters from wildfires, severe weather events such as hurricanes and droughts). Instructional materials will be developed around these five issues, including case studies, problem-solving activities, and role-plays.

George Bateson (n.d.) said, “The major problems in the world are the result of the difference between how nature works and the way people think” (n.p.). The study participants emphasized a change in thinking about how we live in our environment to thinking about how we deal with each other. Sophia discussed the importance of “making a change in our way of thinking, both in terms of how we think and what we think.” She added,

The twenty-first century issues are still twentieth-century issues. We have known about them forever, yet the political issues, the sovereignty issues, the identity issues get in the way of solving them. I’m not advocating that everybody has an exact equal share. Individuality is very important. However, there is a matter of equity in distributing the resources, with respect to fairness and basic needs. There is no reason anybody should go hungry, ever.

Simulations, face-to-face problem-solving activities, and facilitated role-plays of critical issues are and will continue to be essential learning methods for discussing critical issues. Being able to use participatory techniques in public involvement is and will continue to be a crucial skill for engaging and helping others to do their best thinking; for example, developing national issues forums or study circles to explore a topic like the ten biggest American cities that are running out of water (Stockdale, Sauter & McIntyre, 2010). National Issues Forums can be developed around several scenarios, exploring management strategies that larger cities have developed in response to a crisis of limited water. Participants can develop scenarios and essential strategies about their cities in response to a water crisis.
Study circles could be the participatory method used for stakeholders to develop long-term water management plans.

**Broader Stakeholder Involvement for Implementation of Long-term Planning**

There is no wall of funding in the long-term future. Thus to support future management, increasing the public’s level of responsibility will be essential. The participants recommended the need for broader stakeholder involvement among resource managers, industry, and communities to achieve integrative decision-making and long term planning.

With growing populations, people need to understand and recognize the value of the environment to society. Strategies to involve the broader public are similar to the examples listed in Collaborating on Critical Issues of the Future: determine activities that will educate the public about critical issues (local, county, state, or regional) and then develop additional participatory activities to engage the public assistance in problem solving these issues.

**Diversity as a Source of Formal and Informal Learning**

Most learning occurs in relationships (Mackeracher, 2009); as such, there is some variance in the overall learning context whether learning is formal or informal. In the NRLI Learning Experience, diversity includes the more traditional aspects of gender, age, race, and ethnicity as well as the non-traditional aspects such as variation in professional years of experience; types of positions (those who supervise people and those who do not); variation in volunteer experience and international experience; and the diversity of the participants with respect to their professional affiliation.

Diversity represents a broad range of natural resources and environmental professionals including directors, public affairs officers, biologists, educators, regulators, and Presidential Management Fellows; a range of expertise from five years of experience to 30 years of professional experience; personal or other professional expertise; the different contextual factors with which the various professionals work; and the diverse perspectives and ways of understanding very complex issues, including how other professionals approach and manage these complex issues.
The expectation is that each January cohort of participants is a diverse mix of individuals from the public sector, including federal, state, county, and local government; the private sector, including business and industry, consultants and landowners; and the non-profit sector, including education, conservation and environmental groups, and community leaders.

Learning is a multidimensional phenomenon (Merriam, 2008), in part because nested within each learner is prior knowledge and experiences that are influenced by external factors such as health, general well-being, and the learning environment. Adding layers of complexity to the learning phenomenon include a formal aspect to the learning environment and an informal learning aspect.

The formal aspects of learning refers to the learning experiences (i.e., content, objectives, and activities) that are chosen by someone else and presented to the learner (Knowles et al., 2005). Formal aspects of learning can include the learning environment itself such as new locations, different instructors, or varying instructional strategies.

Allen and Hartman’s (2001) article on sources of learning identifies various instructional strategies for program design of leadership development. Four major categories of learning strategies are discussed based on the work of Conger (1992, as cited in Allen & Hartman, 2001): personal growth (assessments), conceptual understanding (self-directed learning), feedback (debrief, evaluation, 360 assessments, and other personality type indicators), and skill building in the form of personal development plans or simulations. One implication for practice (and for future research) is to consider the instructional strategies that are more appropriate for the leader development aspects of the program and those strategies more appropriate for leadership development, which often are instructional strategies where other participants directly aid in the overall learning.

Informal learning, on the other hand, is usually intentional, though not highly structured, such as self-directed learning, networking, coaching, mentoring, and performance planning that includes opportunities to review learning needs (Marsick & Watkins, 2001).
Ann described the role that diversity plays in informal instruction: how hearing from people who have different ways of looking at things facilitates very random acts of instruction that help make sense of people, situations, and the complexity of science.

There is huge value in just bringing different people to the table. Moreover, you as [the facilitator of that learning environment] may not be able to orchestrate all of that in an instructional format, but just the act of bringing together can actually create teachable moments. For the most part, agencies train within their agencies [they sing with their own choir]. While I believe leadership development holds value for those individuals or organizations that predominantly work in the same agency and do most of their training within the same agency. Getting outside the agency and into a different arena with others, collaborating on ideas and experiences would be very beneficial for these people.

Melody echoes Ann’s appreciation for the value of learning from other professionals who represent the different aspects of natural resource and environmental management and research. The learning outcomes derive not simply from the instructional materials but also from the stories participants tell about their own experiences on the job or in working with other groups. Melody particularly learned from the kinds of questions other professionals raised during the sessions, from the debriefing sessions, their struggles, and the ongoing discussions that resulted after sessions.

One way to enhance opportunities for informal learning is to ensure there is ample debrief time built into an agenda where hearing from other participants will help facilitate the learning experience. Other informal learning activities include group discussion time during problem-solving activities and providing additional preparation time to prepare for role-plays or the development of smaller learning groups around specific subject matter like facilitation. Preparation for a two- to four-hour role-play can provide the learner with self-directed time as well as time to network and learn from other participants as they prepare for similar roles (facilitators who are co-facilitating; negotiators who are negotiating a particular role; facilitative leaders as they prepare for the usual task of aiding the facilitator and the process while contributing to the substantive nature of the role-play).
Hone Your Practice to Connect with Your Participants

A surprising theme to emerge was the immense value placed on instructors who have participated in the very types of situations that they train, discuss, and teach others to do. As instructors gain credibility in their practice, learners are motivated to engage in the learning. There is value in the instructors who can blend theory and practice into their professional development and instruction. Learners want instructors and mentors who have real life experiences (R. Liles, personal communication, June 10, 2010).

While this finding seemed to fit the context of the NRLI learning experience, it is not clear if this would be the case across other learning experiences. It is both an implication for practice and a recommendation for future research: Does having an instructor with both applied and theoretical add value to the overall learning experience in most learning environments?

The Interrelationship of Learning Outcomes and Learning Mechanisms

Situated learning theory argues that knowledge and skills related to adult roles and responsibilities can be learned most effectively within the actual contexts where they are used. Knowles (1970) referred to situated learning when he stated that adults are motivated to learn in response to the tasks of their social roles, when they are concerned about the immediate applications of knowledge and prefer to participate in problem-centered learning activities (Mackeracher, 2009).

The year-long practicum remains a central component of the NRLI learning experience. Working in groups or individually, participants apply the skills and information gained in the classroom to situations they face at work, in their organizations, or in their communities. As described by the participants’ stories, the practicum serves two purposes: It creates a mechanism for transfer of learning and practice in a real world context. The practicum report documents the changes that have occurred, through stories and actual environmental-socio-economic impacts.

The primary role of the practicum in the NRLI learning experience is as a mechanism for transfer of learning into a real world context (Bloom, 2010; Broad & Newstrom, 1992;
Caffarella, 2002; Mestre, 2003). Applying knowledge or procedures learned in context (the leadership development institute) to a new context (the participant’s community, organization, or multiple organizations) broadly refers to transfer of learning (Bloom, 2007, 2010; Broad & Newstrom, 1992; Caffarella, 2002; Mestre, 2003).

In analyzing several articles on practicums, it is apparent that the NRLI practicum model is distinct from the more traditional academic model, predominately in operations. This is in part due to the end user. The traditional model often targets students without work experience, while working professionals are the preponderate audience for the NRLI practicum model. In the findings, successful aspects of the NRLI practicum model were described as well as limitations of the model, based on the study participants’ comments. Given the limited purposeful sample size, it would enrich the overall understanding of this type of practicum model if more participants were able to discuss the role of the practicum in their NRLI learning experience.

Since each NRLI practicum is a real-world situation, standard results are not the measure of success; rather, the projects are evaluated based on the initial goals desired and the self-report changes documented by the participants, including immediate and long-term outcomes and overall impacts. The practicums are then seen as a range of inter-related experiences that connect each collaborative decision-making project. Success is measured as a cumulative range of experiences rather than as one kind of outcome. Several findings resulted from discussion with the participants regarding the NRLI Practicum model.

1. Distinguished the NRLI model from the academic model
2. Successful aspects of the NRLI practicum model
3. Limitations of the NRLI practicum model
4. Contributions on what makes a collaborative successful (from the NRLI learning experience)

Practitioners who want to work with professionals in an environment that accepts risks and engages in real-world application using a collaborative framework may want to consider tailoring the Planning for Change Model to their use with mentor support.
**Situating Inter-Organizations in a Collaborative Framework**

Using Westley’s (1995) classification of the origins of inter-organizational collaborations, three practicums were examined: a vision-led collaboration, a learning-led collaboration, and a planning-led collaborative. This framework assisted in discussing the strengths and vulnerabilities of three NRLI practicums at a micro-level.

Using the origins of inter-organizational framework developed by Westley (1995), some of the strengths and limitations of the practicums were examined based on three structures: structures of signification (issue definition, stakeholder convening, direction setting), structures of mobilization (action mobilization and resource mobilization), and structures of legitimization (institutionalization of the collaboration, development of norms for interaction, terminology for expectations, rules for balance and productive participation).

The leader of the vision-led collaborative was able to successfully include all three structures in the development of the collaboration. Other common characteristics of visionary leaders that Westley (1995) and others have identified include the ability of visionary leaders to shape and reshape the myths and use symbolic language to communicate about the vision, and their reliance on face-to-face exchanges of communication, in particular with middle and lower action levels of organizations.

In visionary models of strategy the system remains flexible and responsive not because of a nested system of decision rules, but because of nested authority and meanings. Those closest to the action are empowered to act, and they do in the interests of a common purpose and mission. (Westley, 1995, p. 400)

There is substantial literature about the role visionary leaders play in the success of organizations (Bass, 1990b; Kotter, 1995; Portugal & Yukl, 1994); however, little is understood about the role of visionary leaders in an inter-organizational context.

The leader of the learning-led collaborative experiences difficulties in issue definitions and stakeholder convening. Once the leader was able to understand the impact of advocacy on process development, negotiations could begin about issues definition, and working relationships could be established to mobilize for action and resources. Weick suggests learning, like action, is an irrational, highly social activity more connected to the
construction of meaning (structures of signification) than to rules or authority (as cited in Westley, 1995). Once the meaning was clear and shared between the parties, the stakeholders involved were able to support the purpose of the collaborative and mobilize.

In a planning-led collaborative, according to Westley (1995), structures of resource mobilization and legitimization are strongest, while structures of signification and action mobilization are typically considered the weakest. This internal change resulted in an internal standard operating procedure and involvement of both external and internal stakeholders. A cooperative action was facilitated between the external and internal stakeholders in support of the procedure that is still used today.

Westley (1995) states that there may be limits to the amounts and kinds of consensus that is desirable in collaborations. An overly organized problem domain with a high level of consensus may be less responsive to ongoing change than one that is less organized. Westley asserts that consensus on the inter-organizational domain, one that represents consolidation and conservation, will tend toward the following characteristics: centralization, routinization, single-loop learning, and commitment to a fixed resource plan and authority. It is these characteristics of a bounded system that can make an inter-organization vulnerable or less responsive to change and crisis.

Based on a 1973 study by Granovettor (as cited in Westley, 1995), there seems to be an inverse relationship between the density of the internal connections within a bounded system and the number of connections outside system. “Disorder in problem domains may be as valuable as order, diversity as important as consensus” (Westley, 1955, p. 419).

Heterarchial systems that remain connected to hierarchical models of leadership, bringing together both elements of organization and networking, may prove to be the most relevant structure for the 21st century (Sandmann & Vandenberg, 1995). The development of more centralized collaborative governance structures (Gray, 1989) of consolidation may limit the disorder and diversity that allows collaborations to flourish, and negate the importance of outside connections for support during change and crisis. A heterarchial framework, one that
remains focused on the activity and not to maintain the structure, may allow the healthy tension needed inside and outside the inter-organizational domain.

The most effective practitioners, according to Knowles and colleagues (2005) are those who are good at reflection-in-action and double-loop learning. A key aspect, then, of maintaining tension may be found in the literature on single-loop and double-loop learning (Argyris, 1991; Brookfield, 1986; Knowles et al., 2005). Single-loop learning often refers to learning that fits prior experiences and existing values, enabling learners to respond to situations readily. Single-loop learning can prevent learning from failure since the learner “shuts out” the patterns that do not fit his or her current schema (cognitive structures that are built as learning and experiences accumulate and are packaged in memory). Double-loop learning, on the other hand, requires learners to change their mental schema because of learning that does not fit the learner’s prior experiences (or schemas).

Just What is the Rationale for Leadership Development?

Recalling an earlier definition offered by Dixon (1993), leadership development is about building the capacity of groups of people to learn their way out of unforeseen challenges and problems. Given their extensive commitment of resources and time, it was essential to understand what motivated the study participants to participate in the NRLI learning experience. Five rationales resulted:

1. Self-advancement (advance my career as a result of participation)
2. Leadership beyond self-advancement (influencing the process from where I stand as I build the leader in me and challenge the leader in others)
3. Expanding knowledge about natural resources and environmental issues in North Carolina and the complexities surrounding these resources
4. Continuous, relevant, and applicable learning that prepares and readies leaders for current and future challenges
5. Connecting to a network of learners (develop the capacity to work across sectors on issues of complexity and uncertainty toward insightful and integrative solutions).
Understanding participant motivations helps explain “good fit” with an integrative leadership development program. Assuming similar responses from future participants would mean maintaining a program that integrates both leader development and leadership development. This means there is an continued emphasis on the development of the interpersonal capacity in working with others (the leadership development aspects of the institute) while maintaining the importance of building an internal capacity for self-awareness and critical reflection and the role of intrapersonal development in meaning making and relationship building.

**Just What is the Role of Leadership Development in Management, Conservation, and Protection of Natural Resources and the Environment?**

Just what is the role of leadership development in helping the participants to manage, conserve, and protect resources? Leadership development is the cornerstone of the Institute. Education and support serve as the primary mechanisms to help a diverse group of leaders seek consensus on issues affecting the sustainable development of North Carolina’s natural resources and the quality of the environment.

For Kate, leadership development has helped her to manage, protect, and conserve natural resources and the environment in her work with local communities. She discusses the role of leadership development within the context of working with local government.

The key to managing natural resource issues is working back at that local level and bringing in opportunities to the local populations to help improve them. Encouraging local communities, finding what those opportunities are and the resources to make them happen at the local level. Finding a way to show the local level that all problems can be broken down into smaller issues and to work on issues now rather than simply to consider them when the crisis arises . . . Future management, conservation, and protection will come down to a lot more sharing of resources than what we do right now.

Five characteristics were attributed to the role of leadership development in helping to manage, conserve, and protect the resources and the environment. Based on the participants’ self-reports, the role of leadership development (as defined by the NRLI Learning Experience) is in providing the time and space in:
1. Learning to Learn with Others (continuously)
2. Championing the Process with Core Others
3. Helping to Convene and Shape Inter-Organizational Frameworks
4. Building and Maintaining Working Relationships

This section bears further research for three reasons. First, when asked, the participants readily responded to the question how leadership development has helped them to manage, conserve, or protect the resources. Leadership development was not defined for them; they qualified their responses in their own terms. Therefore, they defined leadership development (in the context of the NRLI learning experience). Although the researcher was prepared to hear that leadership development played a limited role, this finding was a pleasant surprise.

Second, the question could be asked in a similar qualitative fashion (face-to-face) of other NRLI Fellows to learn if similar or dissimilar responses would be received about the role of leadership development for them in helping to manage, conserve, and protect natural resources. There seems to be an important connection but it is not clear if the connection is in the practice, the examination of the question, or the ongoing process.

Third, the categories were determined by the researcher as a way to begin to learn about the different kinds of leadership goals associated with the practicums; and on another level, whether there are unique ways in which leadership development is perceived as assisting in the development of one type of goal (management, conservation, and protection) contrasting with another.

This framework yielded the following results: four practicums focused on management of natural resources and environmental issues; two focused on the goal of conservation of natural resources and environmental issues; two were designed for protection of natural resources and environmental issues; and three with all three goals: management, conservation, and protection of natural resources and environmental issues. This framework
has not been tested nor reviewed with the current study participants or with any other data on the practicums, and thus is very elementary.

Finally, additional research into how the participants have implemented their knowledge and skills and the outcomes that have resulted from their efforts could assist in defining what constitutes success in a collaborative effort. Conley and Moote (2003) have established a list of evaluation criteria based on process criteria (e.g., inclusive participation, open and accessible process), environmental outcome criteria (e.g., improved habitat, improved water quality), and socioeconomics outcome criteria (e.g., relationships built or strengthened, improved capacity of dispute resolution). A similar criteria list could be used in assessing the practicum outcomes, if more specific and precise results are desired.

Integration of Leader Development and Leadership Development

Leadership development for the 21st century requires a change in personal practice, conceptual thinking, and organizational application (Sandmann & Vandenberg, 1995, p. 198). From the point of view of this framework, leadership development is not simply individual-centered, focused on one who leads organizations or who is in charge; nor is it simply centered on a collective, as in one who leads inter-organizational networks or processes. It is not a discrete but rather an evolving and continuous learning experience. The two components include leader development as its foundation, along with the concrete issues facing communities today and the relationships that are developed to resolve those issues. That said, the NRLI learning experience can be thought of as leadership development for heterarchial frameworks.

In this framework, additional dimensions are added to the construct of leader, leadership, and leadership development. Natural Resources and Environmental Leadership is best understood as a process that involves two levels of influence (individual and organizational) and two types of influence relationships (internal and external) (Portugal & Yukl, 1994). According to Day (2000), leader development is the enhancement of the human capital; and leadership development, the enhancement of social capital. Leadership
development can be considered the development of the leadership processes in context, as well as the development of leaders as individuals.

The following dimensions represent an integrative strategy for leadership development in the future:

1. The practice of leadership is both the domain of the individual and in the collective ability of people, either with or without authority, occurring within a context of interactions to serve a mutual purpose. Roles can be interchangeable; leadership can be emergent. Leadership is shared, distributed, and relational and is geared toward building relationships, networks, change, responding to conflict, and situations (tools: abstraction, perception, and knowledge).

2. The leader in leadership can be within an organization, but leadership often works from an inter-organizational or stakeholder or partnership system, mostly for the benefit of the organization, and links back to the organization.

3. Management is what a leader does and decides, does to followers and collaborators. Leadership is what leaders and collaborators do together to effect a mutual purpose.

For the 21st century, leadership development will prove to be an integrative strategy that links leader development with leadership development. The model for this does exist; the NRLI learning experience is an integrative framework of leader development and leadership development, one with nearly 16 years of experience. While the NRLI model emphasizes leadership development and inter-organizational development, organizations benefit from a leader as distributed, shared, and relational, as the leader links back to their organizations and to internal constituencies. Already there are examples of peer-to-peer working relationships, broad-based partnerships within the state, and several inter-agency initiatives. This type of networking and cross-sector learning serves as a prime method of enhancing social capital in an organization (Day, 2000).
Communicating about a Learning Community or a Community of Practice

A major implication of practice for the institute itself will be to explore the findings and results of the research with the study participants. Using this interpretative study as a way to leverage the discussion about leadership in natural resources and environmental issues, the study participants are interested in continuing to expand the capacity for collaborative decision-making within North Carolina and to consider how best to prepare the 21st century natural resources and environmental leader for future challenges and opportunities. The study participants are interested in the development of a learning community or in cultivating a community of practice.

In Spring 2011, the study participants will convene to discuss the research and develop a plan for shaping the type of community they would like to become and determining the steps that will be required to move toward that goal. Several topics for discussion were proposed in the study and will be brought up again, including: Online Resource for Process Management and Negotiation, Mentoring Opportunities, Organizational Support for Inter-Organizational Work, Transfer of Skills into Other Life Areas, Attending to Civic Engagement and Education, Principles for Guiding Decisions, and Lessons for the Road.

Most of the study participants are involved in cross-sectoral and cross-cultural peer-to-peer working relationships, broad-based partnerships within the state, and several inter-agency initiatives. This type of networking and cross-sector learning serves as a prime method of enhancing social capital in an organization (Day, 2000). Shifting from hierarchical models of leadership to heterarchial models that bring together both elements of networks and organizations may prove to be the most relevant structures for the 21st century (Sandmann & Vandenberg, 1995).

One additional implication for practice in this section involves using the information from Lessons for the Road as supplementary instructional materials for several classes in collaborative decision-making.
Leader of the Future:
Someone Who Deals with Interactive Systems (Human and Natural)

Presented here is a finding that is neither an implication for practice nor a recommendation for future research but rather contributes to parting thoughts. As noted in Chapter 4, the participants were asked to define “natural resources and environmental leader.” As expected, there were common definitions, distinctions, and certainly variation. There is a professional continuum on which natural resources and environmental leadership falls: from managers of water quality and water quantity systems, to regulators that protect the environment and public health, to managers who manage ecological systems, and to the educators, consultants, and scientists who help make sense of the interconnections between human and natural systems. The profession of natural resources and environmental leaders is made of many hats: the traditional, the contemporary, and the future. They are found in the public, private, and non-profit sectors, in grassroots organizations and in large companies. Sirmon (1993) said that managing America’s natural resources calls for a more sophisticated form of leadership, one that has yet to be defined and embraced. Several of the participants offered their individual perspectives, some of which are combined here, as a means to begin to express their ideas about the future form of leadership, not from who said what, but from what was said:

The idea of a natural resource leader will become dated. Moreover, the word environmental leader carries too much baggage. Maybe for the future we somehow capture the idea that it’s not “I’m a wildlife guy” or “I’m a forest guy,” and not “I’m for saving the planet from pollution guy.” Rather I am someone who deals with interactive systems that are both natural and human. That is the leader of the future.

They will lead, not from a management perspective but rather will coordinate by having an understanding of the relationships, knowing when to use one type of resource versus another, how much is really necessary, and then beyond that, being open to new ideas about use of resources.

They will recognize within the sphere of ecology, there’s a realm called human ecology. It is a “specialty” that deals with the fact you can’t separate out the trees, the plants, the air from the humans that are also a species living within those systems. Therefore, human ecology is as important as flora and fauna ecology.
Their definition of leadership will be beyond self-advancement, it will include the importance of experiencing interactions with those who held diverse perspectives and knowledge while concurrently learning how to achieve mutual outcomes through those interactions.

So the future is expected to bring more conundrums, not necessarily resolutions. Newman et al. (2007) said that a challenge is not only to identify a common typology of a leader, but also to develop an approach that can effectively nurture qualities within students (as well as professionals, Addor et al., 2005). As others work toward a common typology, the researcher hopes a definition will include one where leadership uses an integrative approach to manage the interactions of environmental-socio-economic systems.

**Recommendations for Future Research**

There are seven recommendations for future research. The first recommendation is to analyze the second research question that was not included in this study because of time constraints. The question is: *What are your perspectives on how to prepare future natural resources and environmental leaders for the 21st century?* Though several implications for practice resulted from the current research for how to prepare future leaders, analyzing this specific question will address the future model of the institute, the development of other programs, and the perspectives of study participants’ on how to sustain collaboratives.

This knowledge will contribute to the refinement and continued development of the institute into the 21st century. The researcher intends to complete this analysis by Fall 2011 in an ongoing effort to contribute to the body of knowledge around natural resources and environmental leadership. This will include conducting an anonymous online survey of previous fellows based on earlier assessment conducted on the classes from 1995-1998. The online research will provide an opportunity for research participants who may have had a less valuable learning experience and who would be willing to share their experience.

The second research recommendation is to consider a review of the NRLI practicums since 1995, to measure the extent that change has occurred at an individual level, an organizational or inter-organizational level, and at a societal level. An initial component of the evaluation could include the origin classification of inter-organizations developed by
Westley (1995). Several methods of evaluation could be considered (Patton, 2008) such as impact focus or an implementation focus. Impact focus could be used to measure the direct and indirect project impacts at three levels: individual, organizational, and society. Implementation focus would be useful to assess to what extent the project was implemented as designed, what issues surfaced during implementation that require future attention, and the current status of the project. Part of this analysis will be conducted during the remaining data analysis of the research, which included additional discussions about the practicums.

The third recommendation for research would be to categorize instructional learning strategies based on what might be more appropriate for leader development (360 assessments, journaling) and for leadership development (debriefing, structuring group discussions, role-plays).

The fourth recommendation for research would be to explore the question, does having instructors who have both applied experience and a theoretical background, add value to the overall learning experience in other learning contexts. Participants in the study hold in esteem, practitioners and instructors who have real world experience and rationales for their practice. It is not clear is if this would be the case across other learning experiences. It is both an implication for practice and a recommendation for future research.

The fifth recommendation for research involves revisiting critical issues of the 21st century as identified by the participants. Understanding what leadership considers as critical issues, helps determine how to prepare emerging and senior leadership for the issues they will face. An issue that was not identified but one that appears critical are the ramifications of deteriorating infrastructures in the US on the environmental-socio-economic interface, particularly if cumulative failures were to occur. A list of anticipated and current failures is located on the American Society of Civil Engineers site (ASCE, 2010).

The sixth recommendation is to research the role of visionary leaders in an inter-organizational context. There is substantial literature about the role visionary leaders play in the success of organizations (Bass, 1990b; Kotter, 1995; Portugal & Yukl, 1994); however, little is understood about the role of visionary leaders in an inter-organizational context.
The seventh recommendation for research involves examining differing structures for collaborative governance. One structure that has been touted is more centralized with built-in routines (Gray, 1989). Yet, another consideration is heterarchial frameworks that may provide more support during change and a crisis, using both inter-organizational networks and hierarchical systems. Heterarchial systems tend to remain focused on the activity rather than building and maintaining a structure, and thus allow the healthy tension needed inside and outside an inter-organizational domain as discussed by Westley (1995). Some findings from completion of the first recommendation may contribute to the discussions and examination of the seventh recommendation.

**Conclusions**

The purpose of this Interpretative Phenomenological Analysis (IPA) study was to explore the experiences of natural resources and environmental leaders who participated in a leadership development institute. With theoretical foundations in phenomenology, hermeneutics, and idiography, the research provided an insider perspective on the lived experiences of individuals through a phenomenological lens. Using an idiographic lens, the particulars became essential in understanding the lived experiences. Using a hermeneutic lens, the researcher, as the instrument of data collection, provided her interpretation of the participants’ responses (Fade, 2004). In IPA, analysis always involves interpretation (Smith et al., 2009).

The 11 participants directly reflected the purpose of the interpretative study, which was to explore in depth the experiences of natural resources and environmental leaders who participated in a leadership development institute. While the participants indirectly shared a common learning experience, their experiences reflected their individual meaning and significance, based on the year he or she attended the institute.

The degree to which the qualitative results can be transferred to other contexts or settings is often the decision of the one doing the generalizing. Qualitative research, though rich, has limitations. A major limitation in this interpretative study is the number of participants interviewed, which represent about 3% of the NRLI population. Thus, it may be
difficult to transfer some of the findings to a broader population, even though the data gathered from the participants is specific, rich in narrative, and comes from a diverse set of participants who remained anonymous to one another throughout the study.

The researcher approached this project with due diligence in describing the research context and the assumptions from which the research was conducted. Although the participants were purposely selected from the institute, they were selected based on a number of diverse criteria including age, sex, affiliation, cohort year, whether they were a supervisory or non-supervisory, geographic location, and type of practicum project.

Enumerations of the strengths and limitations of the study are located in Chapter 3. For anyone who wished to transfer the results to a different context and had questions, the researcher would be accessible to discuss the findings and questions about the research. Otherwise, the decision to transfer results to a different context is left to the practitioner.

**Parting Comments**

It is proper that this study ends on an ideological note, since, in part, this is how it began. Through an intersection of a contemporary and historical body of knowledge, the NRLI was examined. As a result of the examination, the NRLI has been articulated as one way to create a heterarchial system of learning that values continuous learning, one that connects organizational and inter-organizational systems.

Continuously, the participants have echoed the theme of learning to learn throughout the study. Various terms, according to Mackeracher, describe the process of learning to learn including double loop learning (Argyris, 1991) and deuterleaning (Bateson, 2000b). Both learning processes focus on developing the ability of the learner, the working professional, to become aware of underlying norms, policies, and objectives, and view them as relative to context in order to be proactive in advocating for change and innovation (Brookfield, 1986).

Mezirow (2000) suggested that a “defining condition of being human is our urgent need to understand and order the meaning of our experience, to integrate it with what we know to avoid the threat of chaos” (p. 1). Learners who do not find serenity in chaos, who cannot make sense of their experiences, will turn to tradition or explanations by others,
explanations that go unexamined, or resort to projections and rationalizations and create imaginary meanings (Mezirow, 2000). “Adult learning emphasizes contextual understanding, critical reflection of assumptions, and validating meaning by assessing reasons” (Mezirow, 2000, p.1). Helping leaders learn to learn, to ask strategic questions, and take the time to make sense of their experiences is where meaning is made possible. We cannot ignore what Holling (1995) refers to as “remarkable advances, learning, and understanding that have occurred over the years”; we cannot “ignore the opportunities for conversations among and actions by previously polarized individuals that increase understanding and the ability to develop and apply integrated and adaptive policies” (p. 16).

Leadership that shares power, personally and organizationally, is very different from leadership that amasses power and seeks to defend hierarchies of authority (Crowfoot, 1993). Historically, leadership has emphasized hierarchical systems, positions of title that build and maintain resources to create the capacity for change, excluding shared models of leadership and leadership exercising multiple roles (Gordon & Berry, 2006; Heifetz, 1994; Manolis et al., 2008; Rost, 1993a; Senge, 1996).

A new paradigm of leadership incorporates characteristics or values such as collaboration, common good, and diversity. A structure is created for the participation and the leadership of others, one that can enhance the meaning making process (Mackeracher, 2009). Consensus-oriented processes can generate a mutual educational framework built on the collective knowledge and discussions of stakeholders to achieve a purpose (Rost, 1993a). Although the post-industrial paradigm of leadership is not “the” solution, it is a means for transforming the current situation.
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