THE UNIVERSITY OF NORTH CAROLINA
WATER RESOURCES RESEARCH INSTITUTE

Office of the Director
124 Riddick Building
North Carolina State University
Raleigh, North Carolina, 27607
Telephone: 919:737-2815

July 1973

TO: WHOM IT MAY CONCERN

FROM: James M. Stewart
Assistant Director for Research Application

SUBJECT: Institute Report No. 82 - "The Effects of Ditching on the Mosquito Populations in Some Sections of Juncus Salt Marsh in Carteret County, North Carolina" by Mr. Richard N. LaSalle and Dr. Kenneth L. Knight, Department of Entomology, North Carolina State University

This report presents research findings on the effectiveness of ditching for the control of mosquito populations in five areas of irregularly flooded salt marshes in Carteret County, North Carolina. The principal species of mosquitoes, their location, and the relative numbers of each are a part of the data provided. Comparisons are made for both plant cover and the abundance of mosquito larvae in ditched and unditched sections of the marsh.

Your attention is called to the summary and the recommendations sections for their implications to mosquito control programs. Information contained here should be useful to state and county health officials, County Board of Commissioners, and State regulatory agencies.

Another related study by Dr. Edward J. Kuenzler, Professor of Environmental Biology, and Mr. Howard T. Marshall, Graduate Assistant of the University of North Carolina at Chapel Hill, covers the ecological effects of mosquito control ditching, including a comprehensive description of the aquatic organisms, plant species and growth, and general vegetative cover for ditched and unditched marsh areas in Carteret County. This information is provided in Institute Report No. 81.

JMS:jj

Attachment

UNC-WRRI-73-82

# THE EFFECTS OF DITCHING ON THE MOSQUITO POPULATIONS IN SOME SECTIONS OF *JUNCUS* SALT MARSH IN CARTERET COUNTY, NORTH CAROLINA

BY

Mr. Richard N. LaSalle
Graduate Assistant

AND

Dr. Kenneth L. Knight
Professor and Head Department of Entomology
Agricultural Experiment Station
School of Agriculture and Life Sciences
North Carolina State University
Raleigh, N. C. 27607

The work upon which this publication is based was supported in part by funds provided by the Office of Water Resources Research, Department of the Interior, through the Water Resources Research Institute of the University of North Carolina as authorized under the Water Resources Research Act of 1964, and in part by the Agricultural Experiment Station, North Carolina State University, Raleigh. Support was also provided by training grant ES00069 from the National Institute of Environmental Health Sciences and by Grant No. 2-35178 from NOAA, Office of Sea Grant, Department of Commerce.

Project No. B-027-NC
Agreement No. 14-31-0001-3316, F. Y. 1973

June 1973

TABLE OF CONTENTS

## ACKNOWLEDGMENTS

The authors wish to thank all persons who have contributed counsel and assistance during the accomplishment of this study. Appreciation is extended to Dr. A. F. Chestnut, Director of the University of North Carolina Institute of Marine Sciences, Morehead City, who provided the laboratory facilities for this research; to Mr. Howard Marshall, a graduate student enrolled in the marine science curriculum at the University of North Carolina at Chapel Hill for his help in the installation and operation of the tide gauges; to those members of the North River, Williston and Davis communities who supplied the space and electricity for the operation of light traps; to Dr. Ronald Stinner and Dr. R. R. Gerhardt for their help in the statistical analysis of the data; and to Mrs. Susanna Chang for the preparation and identification of the larval and adult mosquitoes collected from the field and for her assistance in the final preparation of the figures and tables of this text.

## ABSTRACT

Five areas of irregularly flooded salt marsh in Carteret County, North Carolina were studied to determine the effects of ditching on mosquito populations inhabiting the areas. The principal species of mosquitoes present were Anopheles atropos Dyar and Knab, Anopheles bradleyi King, Aedes sollicitans (Walker) and Aedes taeniorhynchus (Weidemann). Present in lesser numbers were Culex salinarius Coquillett and Psorophora confinnis (Lynch Arribalzaga).

Data on both plant cover and on the abundance of mosquito larvae of each species showed such wide variation in both ditched and unditched sections that no significant differences between sections could be detected. However, data from weekly field observations of mosquito breeding sites and ground water levels showed that ditched sections had shorter wet intervals than unditched sections. Despite this reduction, the potential survival of the mosquitoes did not significantly differ from the unditched sections, since, according to tide gauge data the ditched sections, on the average, were completely flooded from 14 to 21 times per month, producing conditions in which the wet intervals were often long enough for mosquitoes to complete their development. On the other hand, this high frequency of flooding created microenvironments in some sections on the marsh incompatible with heavy larval breeding.

Aedes and Psorophora larvae were more commonly collected from sites marginal to the marsh, whereas those of Anopheles and Culex were found to be more evenly distributed throughout the study areas.

In general, the percentage of Aedes and Psorophora larvae taken in samples (i.e. their relative abundance) tended to be directly proportional to the mean slope of the breeding depression and inversely proportional to its frequency of flooding. Conversely, the relative abundance of Anopheles and Culex species, although not as highly affected by the mean slope as Aedes and Psorophora, was, up to a point, directly proportional to the frequency of flooding. According to statistical analysis, the relative abundance of species in the ditched sites was more affected by the mean slope, frequency of flooding and the ratio of frequency of flooding/mean slope (Suitability Index) than in the unditched sites, where the additive effect of the frequency of standing water, the number of days per wet period and the Suitability Index were found to be more significant.

Light trap and biting count data collected for the principal salt marsh species showed that the Anopheles and, at times, Culex species could be as numerous and annoying as the Aedes and Psorophora species.

# LIST OF FIGURES IN TEXT

Page

# LIST OF FIGURES IN APPENDIX

# LIST OF TABLES IN TEXT

# LIST OF APPENDIX TABLES

## SUMMARY

Approximately 60,000 acres of the coastal wetlands of North Carolina are regularly flooded and do not produce mosquitoes. However, another 100,000 acres, dominated by the black needle rush (Juncus roemerianus), are irregularly flooded by tidal waters and are capable of producing important man-annoying species of mosquitoes. Since 1960, a ditching program designed to reduce mosquito production, has been carried out on these irregularly flooded marshes. The present study was conducted to determine the effectiveness of this control effort and to provide guidance for its improvement.

Five areas of irregularly flooded salt marsh in Carteret County, North Carolina were utilized for the study. Since before and after ditching evaluations were not possible, comparisons were made on adjoining tracts of ditched and unditched marshes.

The principal species of mosquitoes present were Anopheles atropos, Anopheles bradleyi, Aedes sollicitans and Aedes taeniorhynchus. Present in lesser numbers were Culex salinarius and Psorophora confinnis. Although all of these are coastal pest mosquitoes, the two Aedes species constitute the principal problem, since they are capable both of occurring in tremendous numbers and of dispersing many miles from their breeding sites. The Anopheles and Culex species are produced in lesser numbers and are only locally annoying. Psorophora have habits and capabilities similar to

Aedes but fortunately, since they are principally fresh water breeders, are not that abundant in our coastal areas.

Necessary to an understanding of the mosquito-breeding potential of marshlands, is the knowledge that Anopheles and Culex mosquitoes are permanent pool breeders and are more consistent and numerous in their presence when there is an extended availability of water. Conversely, Aedes and Psorophora are produced only in temporary or intermittent pools since their eggs are laid on wet soil and must undergo a dry period and a subsequent flooding before they will hatch.

Based upon the diverse marsh areas studied, the research reported on here disclosed that the Juncus marshes in Carteret County were subject to a high rate of tidal flooding for most of the mosquito breeding season, which presumably accounts for the relatively low level of Aedes breeding found to occur. This would also account for the finding that the permanent pool breeders, Anopheles-Culex, were as abundant or more so than the Aedes. The relatively high abundance of Anopheles-Culex mosquitoes collected was further demonstrated by the light-trap and biting-count data for the study areas.

Concerning the question of whether ditching controlled mosquito breeding in the Juncus marshes of Carteret County, even though ditched sections of the study areas generally had shorter wet periods than the unditched sections, these periods were usually not of sufficient brevity to prevent a significant number of larvae from

completing development. An additional contributing factor was the frequent replenishment of water because of the high flooding frequency which occurred. Also contributing to mosquito survival was the finding that crabholes serve as water-holding refuges for the larvae, enabling them to complete development even if the breeding depression itself became dry.

If, as was the case in this study, field observations show that most sections of the marshes surveyed were flooded at a frequency sufficiently high to preclude the production of serious numbers of Aedes-Psorophora mosquitoes, an area-wide gridded pattern of ditching is not advised. Since our work showed that prolific breeding of Aedes-Psorophora species was confined to the less frequently flooded upper marginal areas of the marsh, any ditching done for their control should be concentrated in that section. The relatively unproductive outer Juncus marshes can in most cases be bypassed.

Where control of Anopheles-Culex mosquitoes is considered necessary (because of closely adjacent human concentrations), a 150-200 foot grid ditching pattern will not significantly reduce the populations of these species. The only potentially adequate method for their control known to us at present is the use of appropriately-managed impoundments.

In view of the finding that large areas of Juncus marsh can exist in a natural condition without producing significant numbers of Aedes, the importance of conducting intensive season-long

surveys in salt marshes to accurately determine mosquito productivity cannot be over emphasized. Unfortunately, however, surveys may be neglected because of the apparent magnitude of the task. In cases such as these, a method enabling one to predict the relative abundance of Aedes-Psorophora and Anopheles-Culex breeding in salt marshes, using only a few key factors, would be most helpful.

Observations and measurements made during the study disclosed that significant correlation existed between the relative abundance of Aedes-Psorophora and Anopheles-Culex and the slope and frequency of flooding of the breeding depression. A statistical study of the data collected showed that the relative abundance of Aedes-Psorophora tended to be directly proportional to the mean slope of the site and inversely proportional to its frequency of flooding. Conversely, the relative abundance of Anopheles-Culex larvae, although not as highly affected by the mean slope as Aedes-Psorophora, was, up to a point, directly proportional to the frequency of flooding. Preliminary procedures and predictive tables for using this relationship in larval breeding surveys were developed.

# RECOMMENDATIONS

1. To accomplish the most effective source reduction of salt marsh mosquitoes with the least disturbance to the marsh ecosystem, habitat modification procedures such as ditching should be attempted only after intensive season-long larval surveys have been made. The survey program should include some or all of the following procedures:

   a. Areas subject to flooding should be delineated and then visited at such intervals as required to locate all specific breeding sites occurring within each area.

   b. Once located, each site should be examined frequently during at least one entire season to determine its full mosquito breeding potential.

   c. The burden of this initial survey work can be considerably lightened by installing tide gauges at strategic points in the survey areas to determine the frequency of flooding. This information will help to eliminate from serious consideration those sections flooding too frequently to be a serious source of mosquito breeding. Additionally, data from tide gauge readings can be used as a basis for predicting the relative abundance of the mosquito species breeding on the marsh. With such information, it could develop that under certain conditions,

control of one or more species present may not be necessary.

d. Marsh levels along random transects from the tide gauges to high ground should be determined. Combining marsh elevations with tide gauge data makes it possible to estimate the duration and extent of flooding for each breeding site.

e. Assessment of adult mosquito populations by light trap or other means must be carried out on a regular basis in and adjacent to areas under survey. Additionally, biting and/or landing counts should also regularly be taken to assess the nuisance value of the mosquito species present.

2. If survey and larval-pupal monitoring data show a definite need for mosquito control in a particular area and ditching is decided upon, then extensive testing should first be undertaken to determine the porosity and drainage potential of the soil.

3. If ditching is to be done, care should be taken to tailor the ditching design to local conditions in such a manner as to obtain maximum control of mosquito breeding with minimum disturbance to the marsh ecosystem.

# INTRODUCTION

About one-half of the 200,000 acres of coastal wetlands in North Carolina consists of irregularly flooded salt marsh dominated by the plant species Juncus roemerianus Scheele (black needle rush). Juncus marshes occur primarily north and east of Beaufort in Carteret, Pamlico, Hyde and Dare counties, as well as along the outer banks (Adams 1967). Six species of mosquitoes breed in these areas of salt marsh.

In the mid-fifties a series of hurricanes hit the North Carolina coast and the accompanying high tides and rain caused the production of intolerable numbers of mosquitoes. This led to the establishment of the North Carolina Salt Marsh Mosquito Study Commission (White 1956). The purpose of this Commission was to assess the mosquito problems in eastern North Carolina and to suggest means for alleviating them. One result of the work done by the Commission was the initiation in 1960 by the North Carolina State Board of Health of a salt marsh ditching program for mosquito control. To date, areas in Carteret, Craven, Dare, Onslow and Pamlico counties have been ditched. As a result, at least 30% of all irregularly flooded salt marsh in the State has now been altered for mosquito control (Adams 1967).

In this work a dragline was used to excavate a pattern of parallel ditches approximately 100-400 feet apart, 3 feet in depth and 8-10 feet in width through tracts of Juncus marsh. Beginning in tidal water, the ditches usually ended at the wooded high ground marginal to the marsh and were connected to perimeter ditches parallel to the high ground.

In recent years, growing concern for the welfare of coastal wetlands has caused a questioning of the effects of such ditching on marsh and estuarine ecosystems. To provide some information on this subject in North Carolina, a cooperative research program was conducted during the years 1970, 1971 and 1972 by personnel of the University of North Carolina at Chapel Hill and North Carolina State University at Raleigh. Consisting of two phases, the first was an evaluation of the effects of the mosquito control ditching on the marsh ecosystem itself and the second a determination of the effectiveness of the ditching in controlling mosquito populations. The results of the first phase have been published by Kuenzler and Marshall (1973). Phase 2 is reported on here.

Following the publication of a comprehensive report by Smith (1904) advocating filling and drainage as the most satisfactory methods of eliminating salt marsh mosquito breeding, extensive uses of these practices developed in several coastal states and continue to the present. For evaluative information on salt marsh ditching, see MacCreary and Stearns (1935), Richards (1938), Reiley (1951), Carmichael (1957), Smith (1962) and Helm, et al (1963). However, no previous reports have been published dealing with ditching for mosquito control in marshes similar to those which occur in North Carolina.

Specific objectives of this study included determining the temporal and spatial distribution of each mosquito species breeding on ditched and unditched sections of Juncus marsh and the correlating to each breeding site of such factors as frequency of flooding, mean de-

pression slope, plant cover, and distance from ditches and maximum high tide level.

## EXPERIMENTAL PROCEDURE

This research project was conducted in five areas of irregularly flooded salt marsh located in Carteret County, N. C. (fig. 1, p. 33 ). These areas were specifically located at : North River, 5 miles north of Beaufort; Ward's Creedk, about 1 mile east of Bettie; Davis; King's Point, 1 mile north of Davis; and Newport River near Morehead City (fig. 2, p.34 ).

The North River and Newport River study areas were selected principally because each had a ditched section of marsh adjacent to an unditched section. In the case of the Davis study area, which was entirely ditched, King's Point was selected to represent the nearest appropriate tract of unditched marsh. The Ward's Creek area was an additional unditched area, selected because of its known high mosquito breeding potential. These areas were also selected because they represented differing types of salt marsh conditions. This was of importance if a worthwhile evaluation was to be made of the usefulness of ditching as a method of mosquito control.

The vegetation of all study areas except Ward's Creek was predominantly Juncus roemerianus, interspersed with large patches of Distichlis spicata (Linnaeus) and Spartina patens (Aiton). The Ward's Creek area was predominantly covered with D. spicata, with scattered stands of J. roemerianus and Scirpus robustus Pursh. The Newport River area was also distinctive in having a rather high percentage of short Spartina alterniflora Loisel.

In order to compare the mosquito populations occurring in ditched

and unditched areas, an extensive larval-pupal monitoring routine was established. Collections were made at the North River and Ward's Creek areas from March 1st to August 17, 1971, and at Davis, King's Point and Newport River from March 1st to September 30, 1972.

The study areas were surveyed on foot for breeding. A representative number of the sites found were numbered and marked with a 3-foot stake. Additionally, the maximum area of each was determined. Each site's precise location was determined by measuring to it from the nearest ditch. These locations are represented by an encircled "X" in the study area drawings reproduced in figures 3, 4, 5, 6 and 7, pages 35-39. For monitoring purposes each site was visited 2 to 4 times a week. At each visit, the mean water depth was determined and a breeding index was calculated. These data served as a basis for comparing the frequency of standing water and numbers of mosquitoes produced in ditched and unditched sites.

The North River study area contained 41 of these marked breeding sites, all occurring in an area of about 50 acres. Of this number, 26 were located in the unditched section (numbers 16, 18-42, see fig. 3 ), and 15 in the ditched section (numbers 2-15 and 17, see fig.3). Another 50 sites occurring in a contiguous unditched area were visited at least once a week to obtain a general impression of the mosquito breeding occurring over a wider area. The ditched portion was crossed by a series of straight parallel ditches, excavated in 1968, which extended from the wooded high ground across the marsh to the river. These ditches were approximately 150 feet apart.

The Davis study area contained 26 marked sites occurring in an area of about 50 acres. Of this number, 23 were located in the ditched section (see fig. 4, p. 36 ). The remaining 3 sites (Sites A, B and C in fig. 4) were located in the pine woods and were considered unditched. These sites were routinely checked for larvae and pupae in order to compare their mosquito productivity with that of the outer marsh. The ditches in this area, which were excavated in 1965, were approximately 200 feet apart.

The King's Point area contained 21 unditched sites occurring in an area of 50 acres. Twenty of these sites were arranged along two transects beginning at the same point 500 feet from Route 70 and diverging across the marsh to Core Sound. One transect ended at a tide gauge, the other at a berm area (see fig. 5).

The one remaining site, number 21, was located in brushy high ground near the highway. The transect method was used in this case principally as a convenient sampling procedure to locate sites at various distances from maximum high tide.

The two remaining study areas were Ward's Creek, an unditched site of approximately 600 square feet adjacent to Core Sound (see fig. 6), and the Newport River Study area located near Morehead City. The latter study area contained 13 sites, all occurring in a ditched section of marsh about 10 acres, and 1 large unditched site (site 10) of about 1 acre (see fig. 7).

Larval-pupal numbers were determined at the study sites by means of the sampling procedure reported by Belkin (1954). Representative

samples of the larvae and pupae collected at each site during this sampling procedure were brought into the laboratory. Most of the specimens were killed in boiling water and preserved in 80% alcohol for subsequent identification. The remainder were held alive in the laboratory at room temperature and allowed to complete development. If the collection sites did not dry up before the most immature of the larvae completed development, it was assumed that emergence could have occurred in the field. This information is the basis for the survival percentages given later in this report. As a further measure of mosquito population, standard New Jersey light traps were operated and biting catches (for explanation see below) were made adjacent to the study areas. This latter procedure helped assess the pest potential of the species coming from the marsh.

Two light traps were in operation in 1970 and 1971, one at Williston 19 miles east of Beaufort, and one at North River. Three traps were in operation during the 1972 season, one each at Atlantic Beach, Newport River and Davis. Each light trap operated from 7 p.m. to 7 a.m. and the collections were picked up at least 3 times a week.

Biting catches were taken twice a week at North River from June 1 to August 17, 1971, and at Davis and Newport River from June 1 to September 30, 1972. The adults were collected off the arms and legs of the author by means of an aspirator tube. Twenty-minute catches were made every half hour from sunset to at least 10 p.m..

The temperature and rainfall data needed for this research was obtained from Climatological Data, published by the U. S. Department

of Commerce. Stations at Morehead City and Cedar Island were used as representative of the study areas.

In the belief that the interaction of mean slope and the mean frequency, duration and extent of flooding of breeding depressions has an influence on species composition and abundance, appropriate measurements were made at each site.

The mean frequency of flooding on the marsh was determined by a series of Leupold-Stevens Type-F tide gauge recorders which were set up, one each, at North River, Davis, King's Point and Newport River. To facilitate the collection of data on flooding frequency at the sites, site levels within study areas were determined by use of a surveyor's transit.

Estimation of mean slope was made by determining the deepest point at each site and the average distance from this point to the edge of the depression or to vegetation surrounding the water in depressions with little slope.

In order to determine the significance and usefulness of the mean frequency, duration and extent of flooding and the mean slope values for predicting the relative percentages of Aedes-Psorophora and Anopheles-Culex breeding on a salt marsh, all data collected during the study were analyzed by multiple regression, using a standard statistical program (Barr and Goodnight 1971) on the Research Triangle IBM 360/165 computer. The arcsin transformation was used on the dependent variable (Aedes-Psorophora) to stabilize the variance. Tables 10 and 11 contain all parameters (independent

variables) used in the analysis and in the final regression model. These variables were selected because it is believed that their relationships, according to field observations and information already available, are non-linear, that is their interactions produce optimum conditions for both Aedes-Psorophora and Anopheles-Culex breeding. Above and below this optimum the percent relative abundance for the species decrease.

In order to determine and compare ground water levels and rate of subsurface drainage on ditched and unditched portions of the study areas, 14 series of holes, 36 inches deep by 6 inches wide, were dug at the North River, Davis, and Newport River Study areas. Water levels in these holes were checked during each area visit by means of a graduated dipstick and expressed in inches from the surface. The first hole of each series was excavated approximately 3 feet from a ditch, with subsequent holes being located at 20 foot intervals along a line perpendicular to the ditch. In some cases, these lines were between two ditches and in others they extended from a ditch into an adjacent unditched control area.

A survey of vegetation was made at each breeding site in an attempt to correlate the plant cover with the numbers and kinds of mosquitoes present. At each site the number of square feet occupied by each plant species in a 100 square foot plot was estimated. In the case of mixed stands, 10 samples were selected at random from each stand and the ratio of the mean number of stems of each plant species to the total number in the 10 samples, was determined.

The following is an explanation of the various types of values given in the text, tables and graphs.

Mean frequency of flooding/month at tide gauge.

This was determined by dividing the total number of floodings for an area by the number of months the tide gauge was in operation.

Mean frequency of flooding/month at each site.

Since the floodings at the tide gauge did not necessarily mean that sites located at various distances from the gauge were also flooded, a separate determination of the frequency of flooding/month was obtained for each site. A surveyor's transit was used to determine the site's height in relation to the tide gauge. The number of times the tide reached higher than the height of the site was divided by the number of months the tide gauge was in operation.

Frequency of standing water/site (FOSW).

Determined by dividing the number of days when water was present at each site by the number of days during the research interval.

Mean frequency of standing water/area.

Determined by totalling up all frequency of standing water values for the sites of an area and dividing by the number of sites in the area.

Suitability Index (S.I.).

Determined by dividing the frequency of flooding of a site by its mean slope. It is a measure of the amount of soil exposure made available during the mosquito breeding season for the deposition of Aedes and Psorophora eggs. An inverse relationship exists here. Higher

suitability indices represent smaller amounts of soil exposure.

Breeding index.

This value was determined by the method and formula developed by Belkin (1954), where Breeding Index (B.I.) = $\frac{SA \times PD \times TLP}{ND \times ND \times 10}$

SA = Surface area of body of water serving as effective breeding site in square feet.

PD = Positive dips obtained (those dips in which mosquito larvae and pupae are found).

TLP = Total number of larvae and pupae obtained.

ND = Total number of dips taken, disregarding all negative dips prior to the first positive dip.

Mean number of specimens taken/site.

Determined by dividing the total number of mosquito larvae and pupae from each separate ditched and unditched area by the number of sites in each area.

Percent specimens taken/area.

Determined by dividing the number of specimens taken from each separate ditched and unditched area by the total taken from the combined ditched and unditched areas.

Percent relative abundance of species/site.

Determined by dividing the number of specimens of each species identified from a site by the total number of specimens identified from that site.

Mean percent relative abundance of species/site for ditched and unditched sections.

Determined by totalling up the percent relative abundance values for all sites of ditched and unditched areas separately and dividing by the number of sites in each section.

Percent relative abundance of species for ditched and unditched sections.

Determined by dividing the number of specimens of a particular species taken from the ditched and unditched sections separately by the total number of specimens of that species taken from the entire study area.

Percent survival.

Determined by dividing the number of larvae estimated to have survived (see procedure p. 7 ) in each site by the total number collected at each site.

Mean number of mosquitoes taken per light trap night.

Determined by dividing the total number of specimens taken/week by the number of nights the light trap was in operation that week.

Mean number of mosquitoes taken biting per 30-minute interval.

Determined by dividing the total number of specimens taken each night in biting counts by the number of 30-minute intervals in each collecting period.

# RESULTS

Data on the frequency, duration and extent of flooding for the study areas (summarized in table 1, p. 78 , detailed in appendix tables 1-4, pages 90-94) demonstrate the variability which occurred between the areas. North River and Ward's Creek were similar in averaging 15 floodings per month at the tide gauge, whereas the other study areas averaged from 24-30 floodings. This probably indicates that the former two areas are at higher elevations than the latter three.

These data also show that, as compared with the unditched areas, the ditched areas all had a reduced frequency of standing water, an equal or slightly higher number of wet intervals of shorter duration and a higher number of dry intervals of longer duration.

The vegetation of marsh breeding sites consisted primarily of varying proportions of Juncus roemerianus, Distichlis spicata and Spartina patens (table 2, p. 79 , appendix tables 5-8, pages 95-99, and appendix figures 6, 4 and 12 ). Rather wide variation in the relative abundance of these plant species was found to occur between ditched and unditched areas. Unfortunately, the significance of this variation is unclear because plant surveys are not available for the areas prior to ditching. However, it does seem safe to conclude that there has been a significant invasion of Baccharis halimifolia into the ditched sections of the study areas.

Mosquito populations found occurring in marsh breeding sites

consisted principally of Aedes sollicitans, A. taeniorhynchus, Anopheles atropos and An. bradleyi. Additionally, small numbers of Culex salinarius were taken from time to time. Aedes atlanticus and Psorophora confinnis were found breeding in wooded sites around the marsh. The relative abundance of the larvae and pupae of these species for each study area is summarized in table 3, p. 80, detailed in appendix tables 9-12, pages 100-106 . Rather wide variations between populations within a species was found to occur between sites of ditched and unditched sections. As with plant cover, the significance of this variation cannot be determined because surveys for larvae were not made prior to ditching.

Despite this variation, when relative species abundance is compared between ditched and unditched sections rather than just between sites, it becomes apparent that a higher percentage of combinations of Aedes sollicitans and A. taeniorhynchus occurred on ditched rather than unditched areas. These two species, as well as Psorophora confinnis, deposit their eggs on drying soil and are considered temporary pool breeders.

Another generalization that can be developed from the data collected is that the larvae of the temporary pool breeders were more often collected from marsh sites situated in or near high ground than in the marsh proper (for example, see figs. 8, 9, 10 and 11, pages 40-43 ). In contrast, the permanent pool breeders were more evenly distributed over the marsh.

Aedes and Psorophora species were more commonly collected during the months of June, July and August. However, a few major peaks of abundance occurred at the North River and Ward's Creek study areas during the months of March and April (see fig. 13-16, pages 45-48). Although not occurring to any marked degree during the study period itself, peaks of abundance for these species can also occur in September and even into early October.

Within the above time scale, larvae and pupae of these species were most abundant during the few instances when dry periods were followed by heavy rains and/or excessive tidal floodings (see fig. 13-16). During 1971, these periods occurred during the weeks of April 8, June 3 and July 29. In 1972, they occurred in the weeks of April 29 and July 15. Because of this marked response of Aedes and Psorophora to alternate dry-wet intervals, their seasonal distribution pattern was characterized by a number of sharp transient peaks of larval activity (see figs. 13-15).

In contrast to the above, Anopheles and Culex larvae were more consistently present, producing in some instances a long term build-up in numbers (figs. 13 and 14). This is due to the continuous development which occurs in these species and to the high frequency of tidal flooding in the areas under study. The seasonal distribution pattern alluded to above for Aedes and Psorophora differs from that of Anopheles and Culex species because the eggs of the former must undergo alternate periods of drying and flooding before they will hatch.

Using larval abundance data from unditched marsh as a check, the ditched marsh at North River and Davis supported lower populations of Anopheles and Culex (figs. 13 and 14; appendix tables 9-17, pages 100-116), but ditching did not markedly affect the population numbers of Aedes and Psorophora. However, at Newport River, as seen in figure 16, the population levels for all species were higher in the ditched section than in the unditched section because of the presence of two comparatively productive mosquito breeding sites, sites 3 and 8 (see fig. 12, p. 44 ). Together they yielded 583 mosquito larvae. This represented 83% of all larvae taken from the ditched section. Considered separately, site 8 yielded only Aedes and Psorophora larvae, all species of which, except for Aedes taeniorhynchus, had high survival values, ranging from 73% for Aedes sollicitans to 100% for Psorophora confinnis. In contrast, about 70% of all larvae taken from site 3 were Anopheles. Survival values for this site ranged from 66% for A. taeniorhynchus to 100% for Culex salinarius. Although the average distance of these sites from the nearest ditch was only 60 feet, both had high water availability values, ranging from 61% at site 8 to 95% at site 3. Additionally, both possessed deep pockets of water with thick clumps of Spartina alterniflora, Sp. patens, and Distichlis spicata.

Although the ditched marsh at North River and Davis supported fewer Anopheles and Culex than did the unditched marsh, differences in survival values between these areas were not significant (tables 3 and 6, p. 80,83 and appendix tables 18-21, pages 118-122). Based

upon the survival data collected, at least half of the larvae could have completed development in either ditched or unditched marsh (Table 3). With the exception of A. sollicitans at North River, this was also true for the Aedes and Psorophora species (see table 3).

According to the ground water level data found in tables 8 and 9 (pages 85 and 86), the ditches at Davis and Newport River sufficiently drained most sections of salt marsh within two days. Fewer sections of North River ditched marsh were drained as fast. In this area, water usually remained on the marsh for as long as three days after the subsidence of tidal floodings (see table 7, p. 84 and fig. 35, p. 67). All control sections drained somewhat more slowly. Water in most inner ground water holes (holes 3-5 at North River and holes 6-10 at Newport River) remained at marsh level for most of the breeding season, draining only during the relatively few long periods of dryness.

Despite the adequate rate of drainage in most sections of the ditched areas, long intervals of marsh flooding by tides, occasionally combined with heavy rains, replenished breeding sites. Despite this replenishment of water, however, the sites in these areas still produced low numbers of both temporary and permanent pool breeders when compared with the Ward's Creek area, where 13,886 Aedes were collected (see table 3).

Additional information on the mosquito populations at the study areas, obtained from light trap and biting count data, is found in

figures 17-34 (pages 49-66 ) and appendix tables 22-41 (pp. 123-146).

According to these data, Anopheles atropos and An. bradleyi combined were the most commonly collected species in light traps at North River, Williston, and Atlantic Beach and were the most commonly collected species during the biting counts at North River. The interval of highest abundance was from June through October. During this time, the number of adults taken in light traps ranged from 45 adults in August at Atlantic Beach to over 20,000 collected at North River in July. These species were most often taken biting during the months of June and July at North River when over 600 and 400 were taken respectively (see fig. 17-26 and appendix tables 22-31, 40 and 41). At Davis, the Anopheles species were among those most commonly collected from the light trap, ranging in abundance from 637 taken in June to 969 taken in September. Numbers collected during biting counts were highest in June and August when 65 and 100 adults were taken respectively (see fig. 27, 30 and 31 and appendix tables 32-35). Comparatively low numbers of these species were collected at Newport River. Light trap data for this area are not available for July and August. The highest number of adults taken biting there were in the months of June and August when only 80 and 48 were collected, respectively (see fig. 32-34 and appendix tables 36-39).

The highest numbers of Culex salinarius were taken in light traps during the months of June, July and August at North River, Davis, and Williston, ranging from 160 at North River in August to 594 at Williston in July (appendix tables 22-31). This species was most commonly

collected from biting counts during June and July at Newport River (1972) and North River (1971). During the former month, 80 specimens were collected at Newport River and during the latter month approximately 170 were collected at North River (see fig. 17 and 22 and 32-34, and appendix tables 32-35).

The Aedes and Psorophora species were the most commonly taken mosquitoes at Davis, and were among those most commonly taken at North River. At Davis, they ranged in abundance from 1123 taken in the light trap in June to over 2,000 collected in August (see fig. 27 and 30, and appendix tables 22-27 and 32-35). At North River their combined peak of abundance was approximately 1300 for both July and August (see fig. 17 and 21 and appendix table 22-27). Large numbers of these species were also taken in the North River light trap in September, but only the Aedes species were in any abundance in October and few of either genus were taken in November (see fig. 17 and appendix tables 22 and 23). Very few P. confinnis were taken biting, while Aedes were, in most cases, among the most commonly collected species. Comparatively high numbers of Aedes adults were taken biting from June through September, particularly at Davis, where they ranged from approximately 100 in June to over 500 in August (see.fig. 27 and 31 and table 34 and 35).

Tables 10 and 11 give the results of the statistical analysis. The additive effect of the mean slope index, the frequency of flooding and the ratio frequency of flooding/mean slope (represented as

Suitability index (S.I.) in table 10, see also p. 10, Suitability Index) was highly significant in the ditched sections influencing considerably the relative abundance of Aedes-Psorophora and Anopheles-Culex species. In the unditched sections, however, the frequency of standing water and the number of days per wet period were found to be more significant than the mean slope and frequency of flooding when combined with the Suitability Index (see table 11).

Figures 36-45 (pages 68-77 ) and appendix tables 42 and 43 (pages 147,149) illustrate the influence of these factors on the relative abundance of the above species in unditched and ditched sections. The corresponding S.I. values for each point on the graphs are found in appendix tables 42 and 43. These graphs describe the general trends in the changes of the relative abundance of the above species within certain limits. Naturally, for instance, when the frequency of flooding per month becomes too high, the resulting disturbance precludes the existence of mosquito larvae. Therefore, only flooding rates which produced conditions in which mosquito larvae were found, were considered.

Figures 42-45 and table 43 show the influence of the change in number of days per wet period at selected S.I. and frequency of standing water values on the relative abundance of the above species. The frequency of standing water values in the graphs were chosen because they best represented actual conditions in the unditched study sections.

At each of the standing water values, the relative abundance of Anopheles and Culex species increased as the number of days per wet

period increased. The greatest change in the relative abundance of these species, for each increase in the number of days wet, occurred at the S.I. of 1.0. Smaller changes occurred at a S.I. of 3.0 and no change occurred at a S.I. of 5.0. At the latter index, the abundance of Anopheles and Culex was 100% for the entire range of days per wet period values.

Figures 43 and 45 show the corresponding decreases in the relative abundance of the Aedes and Psorophora species under the same conditions.

Figures 36-39 show the change in the relative abundance of Aedes-Psorophora and Anopheles-Culex species in ditched sections with increase in frequency of flooding at selected mean slope values. The maximum relative abundance predicted for Aedes and Psorophora occurred at sites with 1-5 floodings per month and with mean slope values ranging between .25 and .35. As the frequency of flooding increased for any given mean slope, the proportion of Aedes found in larval samples decreased. The rate of decrease was highest when the mean slope was .05, and more gradual when they ranged from .55 to 1.25.

Conversely, the maximum relative abundance predicted for the Anopheles and Culex species occurred in sites flooded 25 to 35 times per month and with mean slope values of .05. The relative abundance for these species increased when the frequency of flooding at any given mean slope increased. This rate of increase in relative abundance was highest in sites with mean slope values of .05. At high frequencies of flooding (i.e. 30/month or over), the relative abun-

dance decreased in sites with mean slope values ranging from .15 to .45, but increased in sites with mean slopes of .55 and over.

Figures 40 and 41 show the change in the relative abundance of the above species with increase in mean slope at selected values of frequency of flooding. The maximum relative abundance predicted for Aedes and Psorophora at any given frequency of flooding occurred in sites with mean slope values ranging between .25 and .35. The highest maximum predicted for these species was at a frequency of flooding of 5/month, and the lowest was at a frequency of flooding of 35/month. In sites where the frequency of flooding ranged from 10-35 floodings per month, the relative abundance for Aedes and Psorophora species increased rapidly as the mean slope increased from .05 to .15 and decreased gradually as the mean slopes increased beyond .45. Change in mean slope had little or no effect on the relative abundance of these species in sites flooded 5 or less times a month. In contrast, the maximum relative abundance predicted for the Anopheles and Culex species at any frequency of flooding value between 10 and 35 times per month occurred in sites with mean slope values of .05 or less or 1.15 or more. Within this range of flooding, the abundance of Anopheles and Culex species dropped rapidly as the mean slope values increased from .15 to .45 and gradually increased as the mean slope values increased from .45 on. In sites where the frequency of flooding was 5 or less, the relative abundance for these species always remained very low.

# DISCUSSION AND CONCLUSIONS

According to the results of this research, areas of marsh under study were subjected to a high rate of flooding for most of the mosquito breeding season. Though the frequency of flooding ranged widely between study areas, none on the average were flooded less than 14 times per month. This strongly affected the drainage performance of the ditches and the nature of the mosquito populations found in these marshes.

Although ditched sections of the study areas generally had shorter wet periods than the unditched sections, these periods were, in many cases, not short enough to prevent a significant number of larvae from completing development. In other cases, completed larval development occurred because of the relatively high flooding frequency of these areas and the consequent replenishment of water.

In some places, due to their comparatively lower elevations, and at certain times during storm and spring tides, tidal flooding was so disturbing that it prevented prolific larval breeding.

As seen in table 3, all of the study areas except Ward's Creek yielded comparatively small numbers of mosquito larvae, with Anopheles and Culex often being more abundant than Aedes and Psorophora. This abundance is not so unexpected, since the former genera are permanent pool breeders and are more consistent and numerous in their presence when there is an extended availability of water. Conversely, the often lower numbers of Aedes and Psorophora taken were probably due to the relatively few long periods of soil exposure needed by

these species for oviposition and proper egg development.

The site at Ward's Creek, despite its high availability of water, yielded a large number of Aedes larvae. This was probably due to a high percentage of soil exposure being available because of the comparatively high mean slope value of this site. The periods of soil exposure were long enough for the accumulation and proper development of large numbers of Aedes eggs. Sites with lower mean slope values, had, in many cases, shorter periods of soil exposure, since in these more level areas, the loss of water was slower, keeping the soil in the site covered for a longer period of time.

The relatively high abundance of Anopheles-Culex species collected is further demonstrated by light trap and biting count data. These data demonstrate that, in some situations, these species can be important as pests as the Aedes-Psorophora species. Furthermore, their period of annoyance can be longer, since they overwinter as adults (in contrast to Aedes-Psorophora, which overwinter as eggs) and may become active in any period of unusually warm weather during the winter months.

Despite the fact that the coastal Anopheles-Culex species can create as great a nuisance as Aedes-Psorophora species, most control efforts are directed towards the latter genera. This is principally due to the greater numbers that can be produced of these species and because of their ability to fly great distances from where they emerged.

If light traps and biting counts show populations of mosquitoes large enough to seriously annoy residents of adjacent settled areas,

it is essential that intensive surveys be made in and around these areas to locate the most productive breeding sources before drastic control measures are begun. This work has shown that such surveys must be extended through at least one full breeding season.

An area wide gridded pattern of ditching is not advised if, as was the case in this study, field observations show that most sections of the marshes surveyed were flooded at a frequency sufficiently high to preclude the production of serious numbers of Aedes-Psorophora species. Since this work shows that prolific breeding of Aedes-Psorophora species occurs more frequently in the upper marginal areas of the marsh, any ditching done for their control should be concentrated in that section. The outer, relatively low mosquito-producing Juncus marshes can in most cases be bypassed.

Where control of Anopheles-Culex is considered necessary, field data indicate that, at least for the areas studied, a 150-200 foot grid ditching pattern will not significantly reduce the populations of these species. The only adequate method for their control known at present is the use of appropriately-managed impoundments.

The existence of sites 4 at North River, site 16 at Davis and sites 3 and 8 at Newport River, points out the fact that despite the proximity of a ditch, physical and biological characteristics such as height above sea level, depth of depression, underlying soil texture and plant cover can often help to create conditions that can maintain a substantial number of mosquito larvae. Close checks for these exceptional sites during breeding-source surveys should be made.

Another factor to be considered and watched for, and one that may influence the survival of mosquito larvae, is the incidence of crabhole breeding on the marsh. This was particularly noted at the North River study area. According to appendix table 44, 10 sites located in both ditched and unditched sections contained crabholes from which larvae and pupae were collected after all water in the sites drained off or evaporated. The presence of many pupal skins in the siphoned water from the crabholes showed that adults had emerged from these locations. Crabholes seem to serve as water-holding refuges for the mosquito larvae, enabling them to survive a few extra days during long periods of dryness, and thereby increasing their chances to complete development.

The importance of conducting intensive surveys in salt marshes to determine accurately their mosquito productivity cannot be overstated. Unfortunately, however, in some situations surveys may be neglected because of the extent of the area to be covered. In cases such as these, a method enabling one to predict the relative abundance of Aedes-Psorophora and Anopheles-Culex species in salt marshes using only a few key factors would be helpful. The results of the statistical analysis of the independent variables and their influence on the relative abundance of Aedes-Psorophora and Anopheles-Culex species show that such a method could be developed.

According to the results of the analysis, the high frequency of standing water values (70% and over) in unditched sections seemed to mask the direct influence of the mean slope and frequency of flooding

on the relative abundance of the above species. Apparently, the degree of mean slope and change in flooding rate mattered little in situations more suitable for Anopheles and Culex species, where the frequency of standing water was generally high and where available soil exposure was normally low. Instead, the relative abundance of Anopheles and Culex was significantly affected by a change in the number of days per wet period.

According to graphs 42-45 for each frequency of standing water given, there is a fixed number of wet days that could be grouped into a number of periods of varying lengths. It was found that fewer wet intervals of longer duration made conditions more suitable for the Anopheles and Culex species, than many short wet intervals interspersed between many short dry intervals. For example, the frequency of standing water for a section of marsh was 70% for the entire breeding season (240 days). This resulted in 240 x .70 = 168 wet days and 240 - 168 = 72 dry days. Two possible combinations during the breeding season could occur: one consisting of 20 wet intervals each averaging 8.4 days in length, the other consisting of 3 wet intervals, each averaging 55 days. The latter would be much more conducive for the longer developing Anopheles and Culex species.

Another variable exerting significant influence on the relative abundance of Anopheles and Culex species was the Suitability Index (S.I.) which represented the ratio of frequency of flooding/mean slope (see page 16). As this index increased for each of the given frequency of standing water and number of days wet values, the

relative abundance for Anopheles and Culex species increased. This was because an increase in the S.I. represented an increase in either the frequency of flooding or a decrease in the mean slope which in both cases produced conditions more suitable for Anopheles and Culex species (see graphs 42 and 44).

Conversely, since there were already enough dry periods of sufficient length in the ditched sections, (a condition more suitable for Aedes and Psorophora) due to the reduced standing water values, a change in the number of days per dry period which would vary as the number of days/wet period varied, did not seem to play as important a role in changing the relative abundance of the above species as did the mean slope and a change in the frequency of flooding caused by lunar and/or storm tides. As seen in graph 41, as the mean slope increased up to a certain value, such as .35 for a given flooding rate, the loss of water became more rapid and increased the amount of soil exposed, making conditions more suitable for Aedes and Psorophora and increasing their relative abundance. Beyond this optimum mean slope value, their relative abundance gradually decreased, due to the fact that sites with mean slope values of .55 or over often contain pockets deep enough to hold larger amounts of water which would take longer to drain. This would create longer wet periods which would produce conditions more suitable for Anopheles and Culex, increasing their relative abundance and decreasing the relative abundance of Aedes and Psorophora. A similar change in relative abundance will occur, if at any given mean slope, the frequency of flooding increases, resulting in less soil exposure.

The results and the above discussion of the statistical analysis have revealed certain relationships between the physical characteristics and the degree of flooding and their combined influence on the mosquito populations in a salt marsh. By determining the mean slope and the frequency of flooding for a ditched marsh and by obtaining information on the frequency of flooding to estimate the frequency of standing water and the number of days per wet period for unditched marsh, a rough prediction, using the information found in appendix tables 1-4, 9-12 and 42 and 43, could be made about the potential relative abundance of salt marsh mosquitoes in both types of conditions. For all independent variables falling between the values listed in these tables, the following regression formulae, based on the standard multiple regression formula (Snedecor and Cochran, 1968), could be used to obtain potential relative abundance values:

For ditched marsh:

$$\hat{y}_{\underline{Aedes}} = \sin(b_o + b_1 ms + b_2 ffl + b_3 S.I. + b_4 (S.I.)^2)\,100$$

where: $\hat{y}_{\underline{Aedes}}$ = the % relative species abundance

$$\hat{y}_{\underline{Anopheles}} = 1 - y_{\underline{Aedes}}$$

ms = mean slope

ffl = 1/frequency of flooding

S.I.= ff/ms

$b_o$ = 0.78284

$b_1$ =-0.00494

$b_2$ = 5.20616

$b_3$ =-0.33915

$b_4$ = 0.02399

For unditched marsh:

$$\hat{y}_{\underline{Aedes}} = \sin(b_o + b_1 foswl + b_2 nwet + b_3 S.I. + b_4 (S.I.)^2)\,100$$

$$\hat{y}_{\underline{Anopheles}} = 1 - y_{\underline{Aedes}}$$

where: foswl = 1/frequency of standing water

nwet = number of days per wet period

S.I. = ff/ms

$b_o$ = 0.61028

$b_1$ = 30.43958

$b_2$ = -0.03892

$b_3$ = -0.23687

$b_4$ = 0.01253

The values obtained from the above formulae represent that proportion of the total number of larvae taken in a sample that would be a particular species. For example, a value of 50% for Aedes means that 50% of the total number of larvae taken in a sample would be Aedes. The above formulae do not give the potential number of mosquito larvae that would emerge from a site during the breeding season. Furthermore, the independent variables used in the regression formulae account for about 70% of the variation in the data. Further study should continue on the relationships of the physical characteristics of the marsh to the relative abundance of salt marsh mosquitoes. This information would be most helpful in improving the formulae and the accuracy of the predictions.

## REFERENCES CITED

Adams, David A. 1967. General description of North Carolina estuarine systems in meeting of the interagency council on natural resources. November 21, 58 pp.

Barr, A. J. and J. H. Goodnight. 1971. Statistical analysis system. Student Supply Store, North Carolina State University at Raleigh.

Belkin, John N. 1954. Simple larval and adult mosquito indexes for routine mosquito control operations. Mosquito News 14(3): 127-131.

Carmichael, G. T. 1957. Effectiveness of ditching in controlling salt marsh mosquitoes. Mosquito News 17(4):265-268.

Helm, R. W., W. Taylor, W. D. Henderson and V. Conant. 1963. Water management, corner-stone of New Jersey mosquito control. Proceedings of the 50th Annual Meeting, New Jersey Mosquito Extermination Association, p. 129-132.

Kuenzler, E. J. and H. L. Marshall. 1973. Effects of mosquito control ditching on estuarine ecosystems. Water Reources Research Institute. Report Number 81, 83 p.

MacCreary, D. and L. A. Stearns. 1935. Effect of drainage work accomplished by the CCC upon the prevalence of mosquitoes at Lewes, Delaware, during 1934. Proceedings of the 22nd Annual Meeting, New Jersey Mosquito Extermination Association, p. 115-121.

Radford, A. E., H. E. Ahles and C. R. Bell. 1964. Manual of the vascular flora of the Carolinas. University of North Carolina Press, Chapel Hill. 1183 pp.

Reiley, F. A. 1951. Water management and drainage in open salt marsh areas for mosquito breeding control. Proceedings of the 38th Annual Meeting, New Jersey Mosquito Extermination Association, p. 71-76.

Richards, A. G., Jr. 1938. Mosquitoes and mosquito control on Long Island, New York, with particular reference to the salt marsh problem. New York State Museum Bulletin Number 316, p. 85-180.

Smith, J. B. 1904. Report of the New Jersey State Agriculture Experiment Station upon the mosquitoes occurring within the state, their habits, life history etc. Trenton, N. J. v, 482 p., and 47 additional unnumbered pages with figures.

Smith, L. W. 1962. Water management on the salt marshes of New Jersey. Mosquito News 22(2):81-83.

Snedecor, G. W. and W. G. Cochran. 1968. Statistical methods. Iowa State University Press, Ames, Iowa, 593 p.

White, C. M. 1956. Salt-marsh mosquito control in North Carolina during 1955. Mosquito News 16(2):71-73.

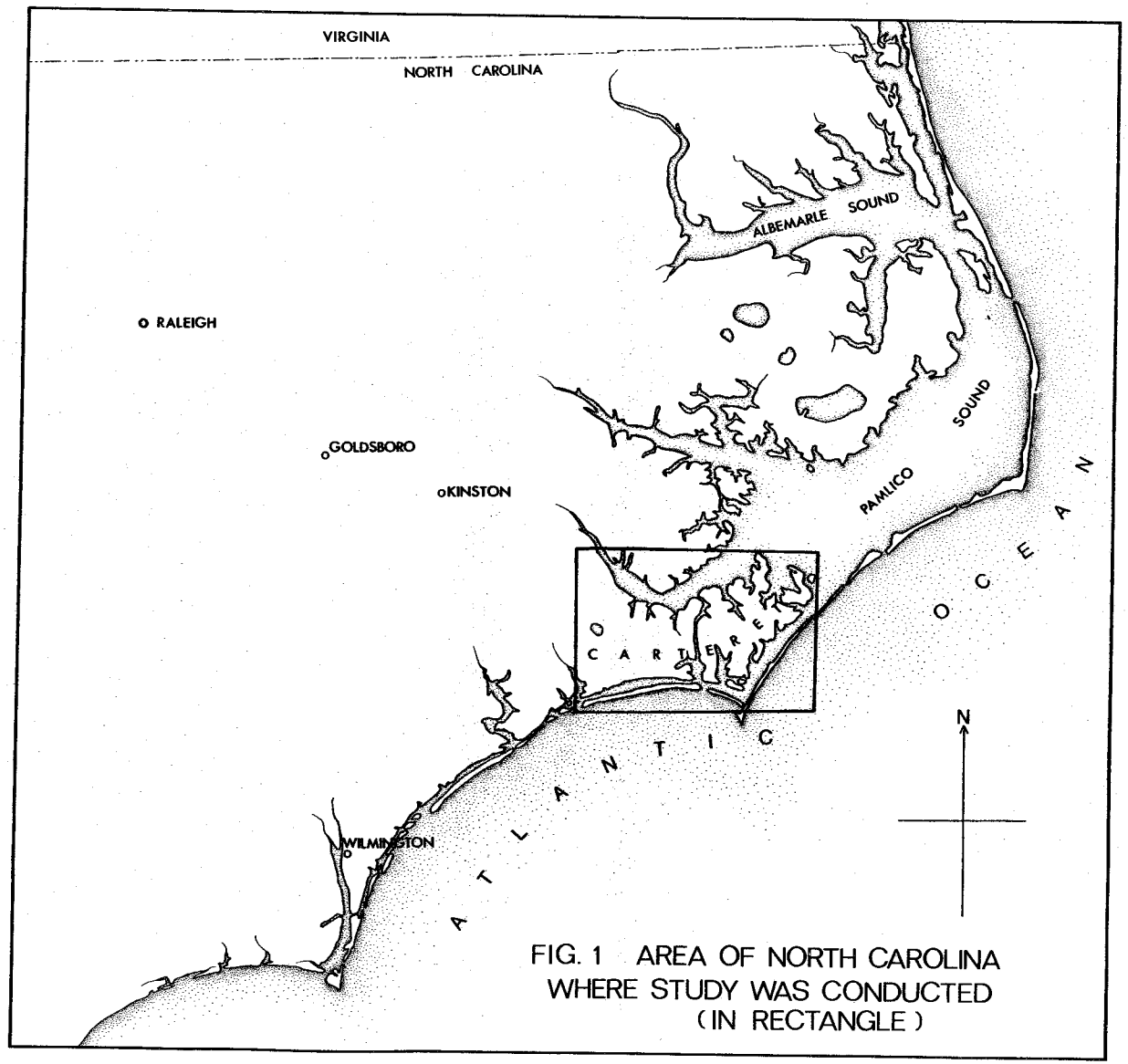
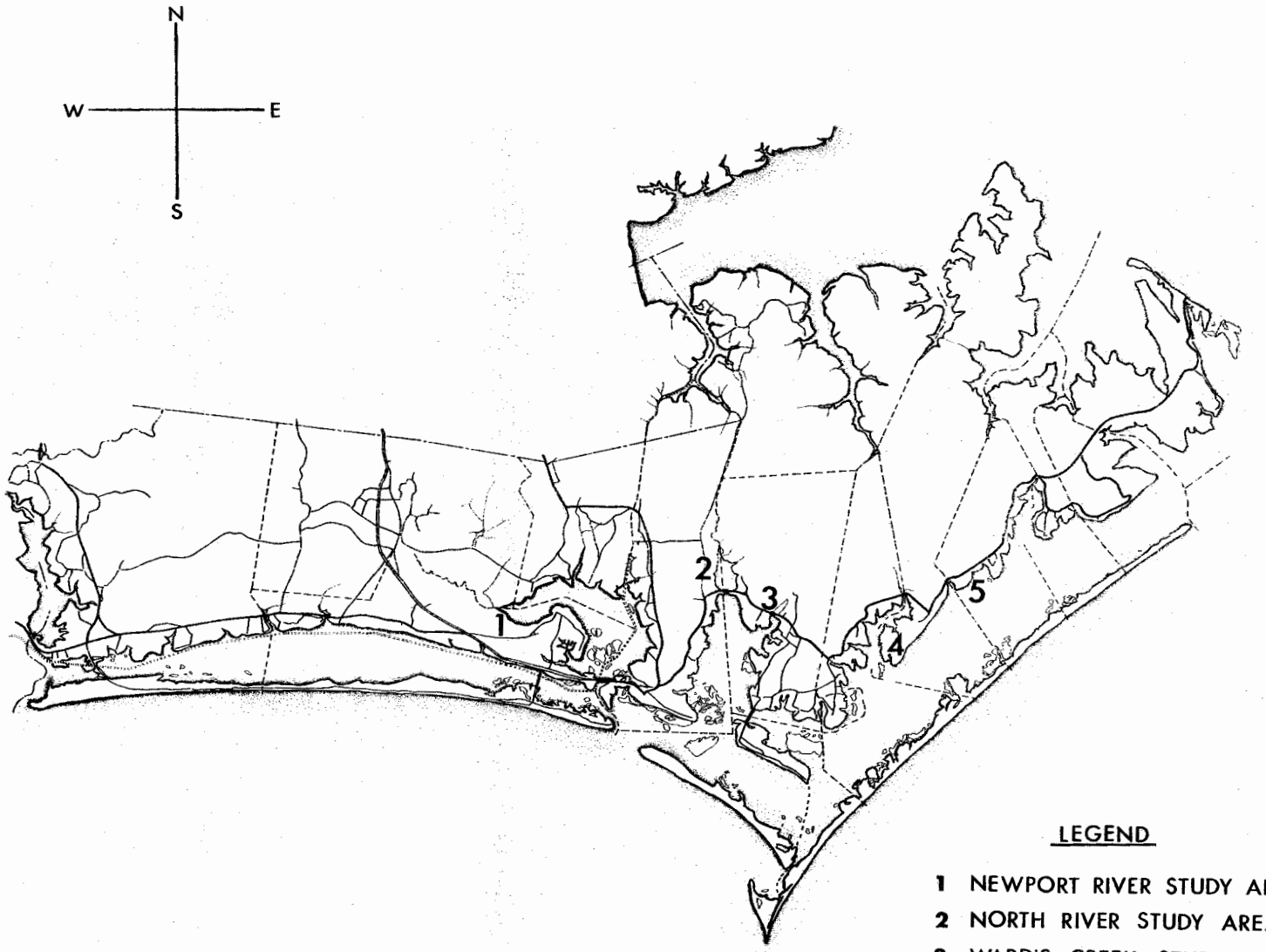



FIG. 1 AREA OF NORTH CAROLINA WHERE STUDY WAS CONDUCTED (IN RECTANGLE)




LEGEND

1 NEWPORT RIVER STUDY AREA
2 NORTH RIVER STUDY AREA
3 WARD'S CREEK STUDY AREA
4 DAVIS STUDY AREA
5 KING'S POINT STUDY AREA

FIG. 2 CARTERET COUNTY, N. C.

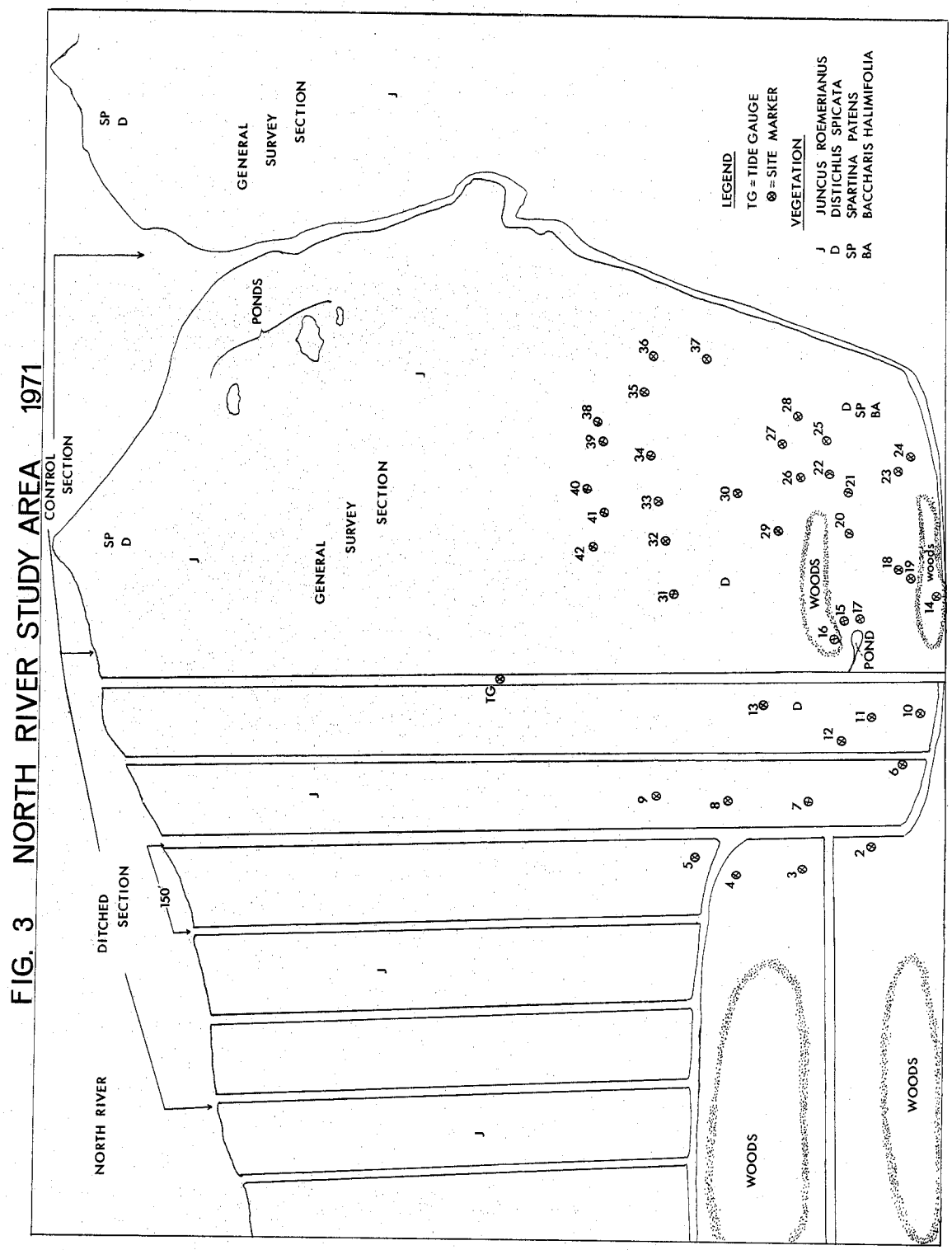


FIG. 3 NORTH RIVER STUDY AREA 1971
CONTROL SECTION
DITCHED SECTION
NORTH RIVER
150'
GENERAL SURVEY SECTION
PONDS
WOODS
POND
TG
LEGEND
TG = TIDE GAUGE
⊗ = SITE MARKER
VEGETATION
J JUNCUS ROEMERIANUS
D DISTICHLIS SPICATA
SP SPARTINA PATENS
BA BACCHARIS HALIMIFOLIA

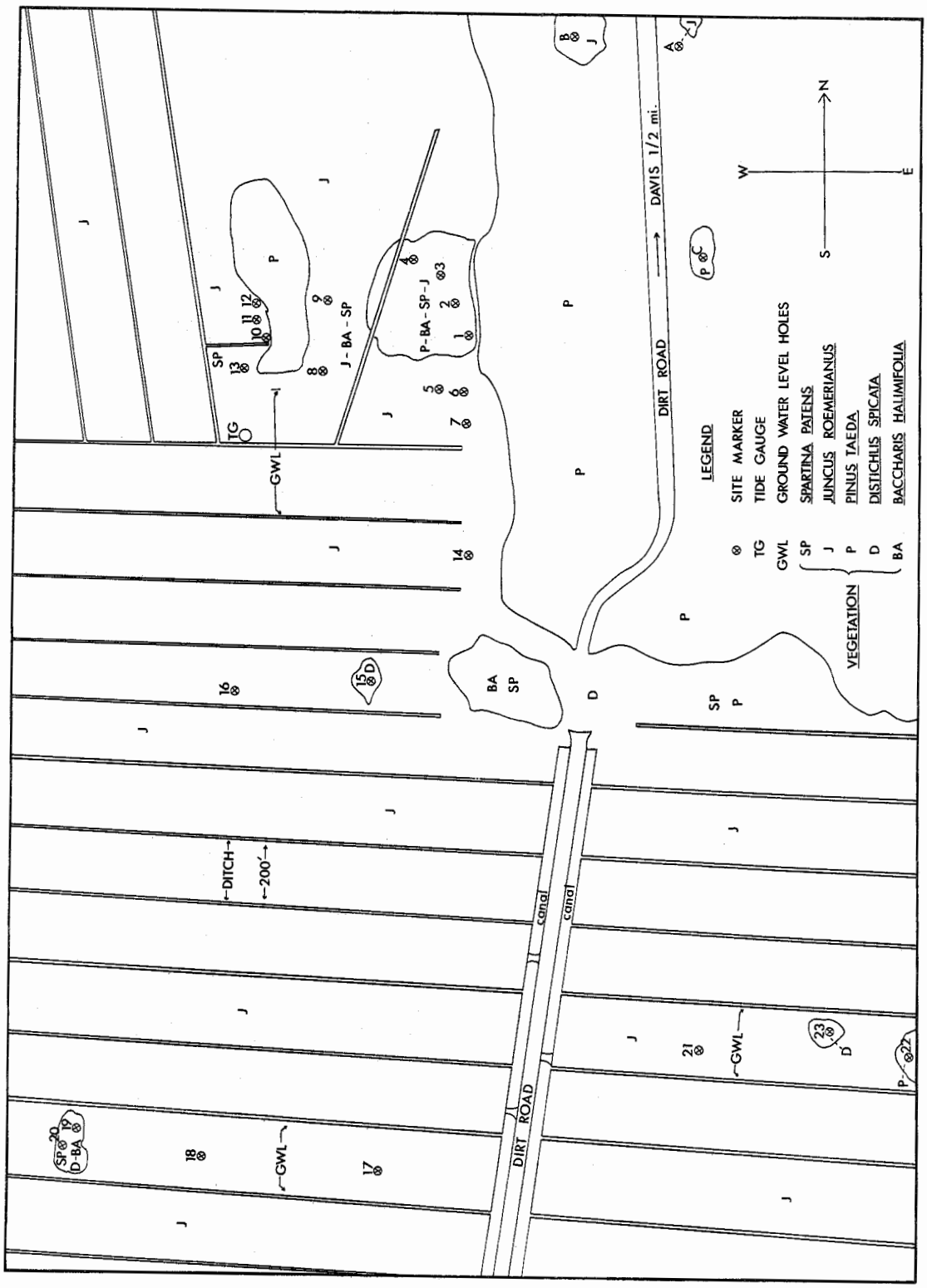



FIG. 4 DAVIS STUDY AREA, 1972

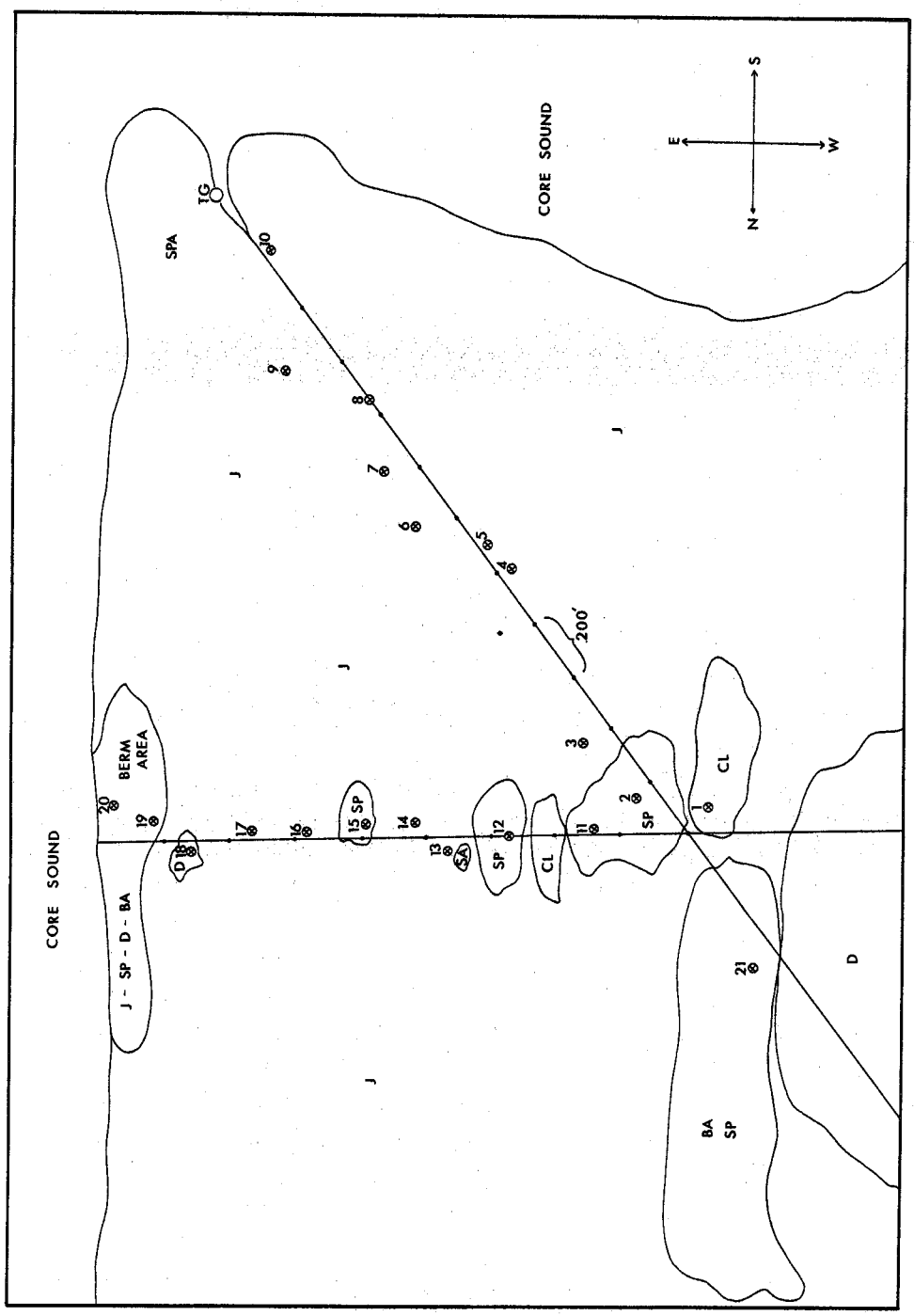



FIG. 5 KING'S POINT STUDY AREA
1972

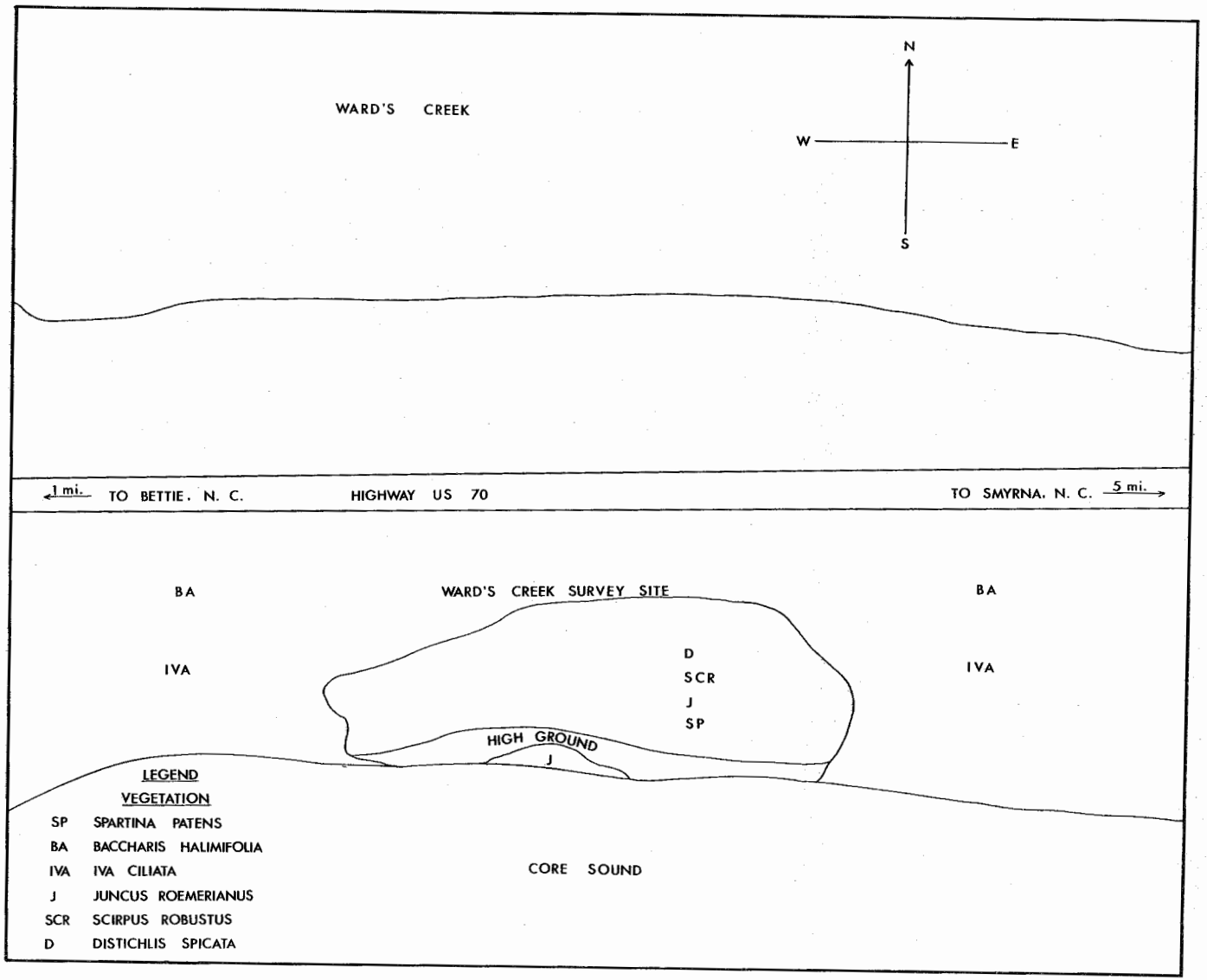



FIG. 6 WARD'S CREEK STUDY AREA. 1972

FIG. 7 NEWPORT RIVER STUDY AREA, 1972

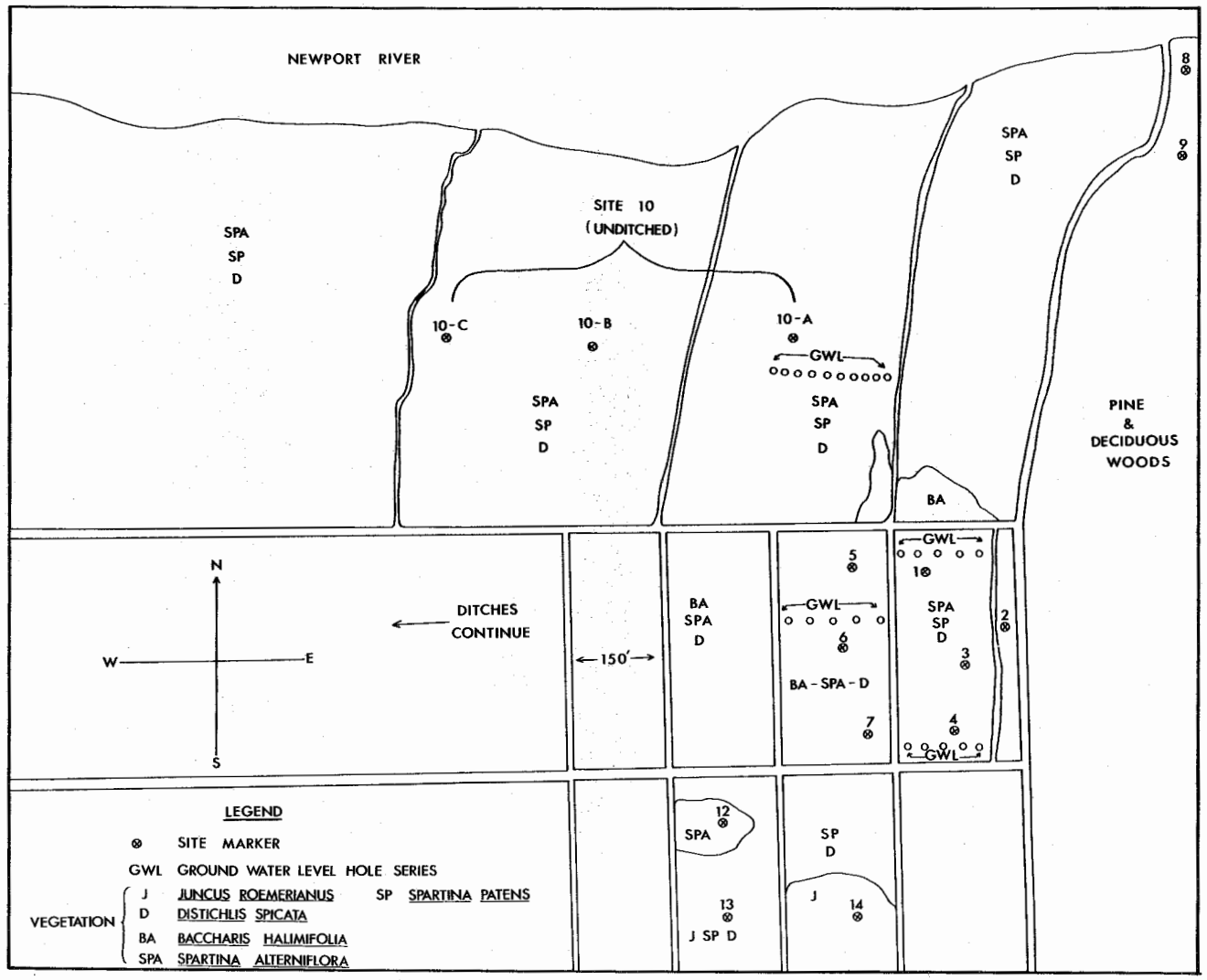
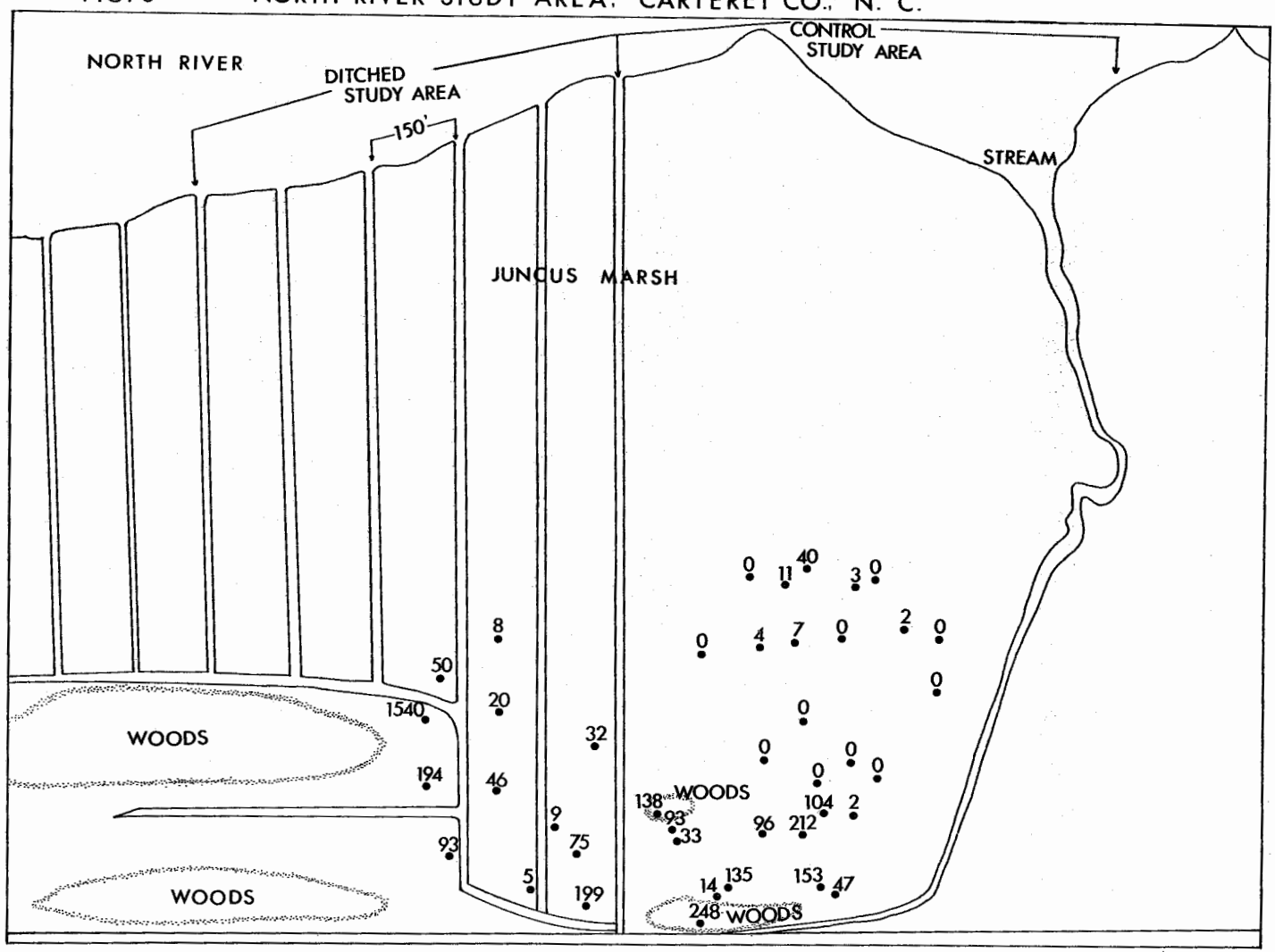
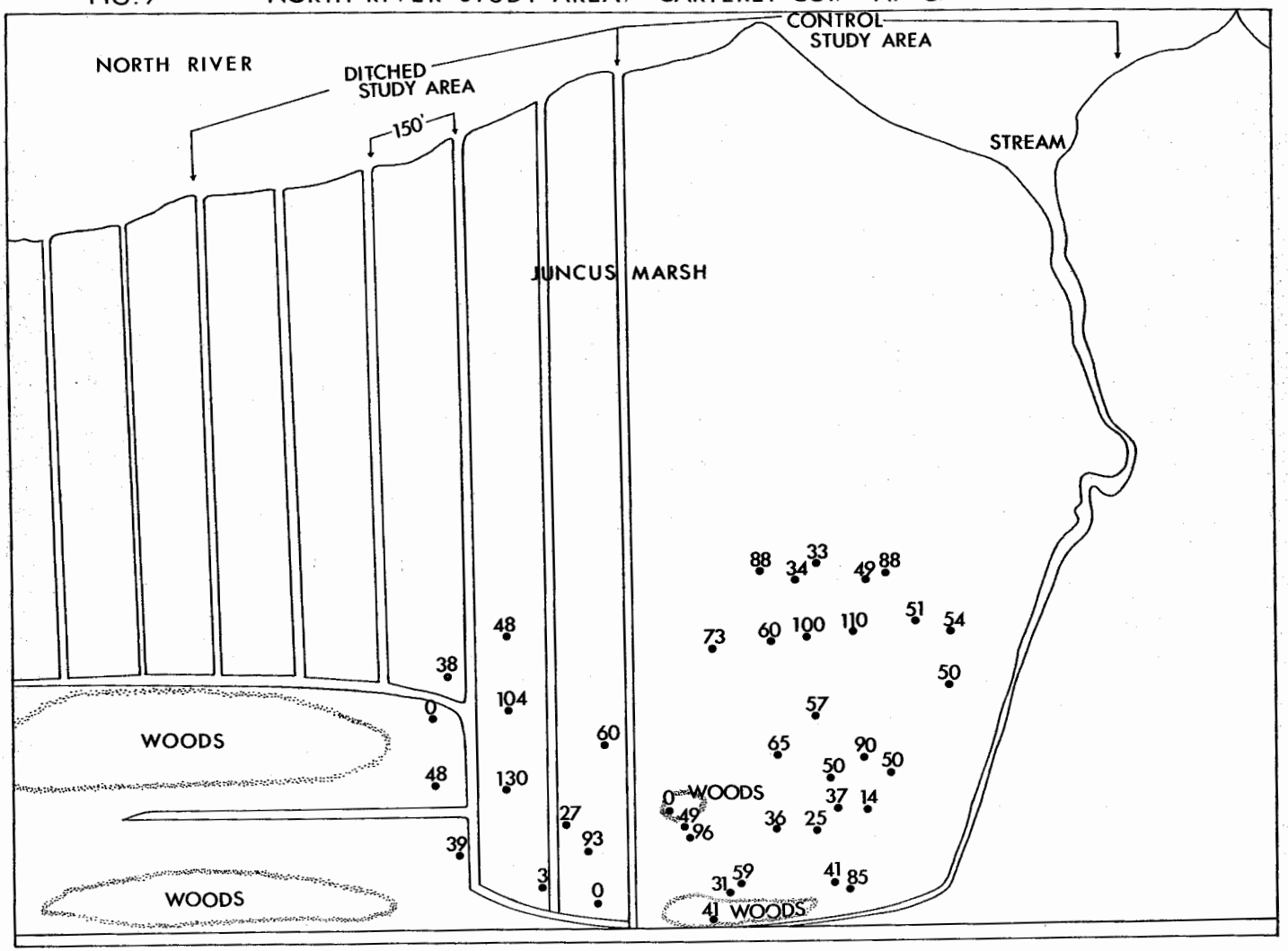


FIG. 8 NORTH RIVER STUDY AREA. CARTERET CO., N. C.




AEDES BREEDING SITES AND NUMBERS OF SPECIMENS
MAR. - AUG. 1971

FIG. 9 NORTH RIVER STUDY AREA, CARTERET CO., N. C.




ANOPHELES BREEDING SITES AND NUMBERS OF SPECIMENS
MAR. - AUG. 1971

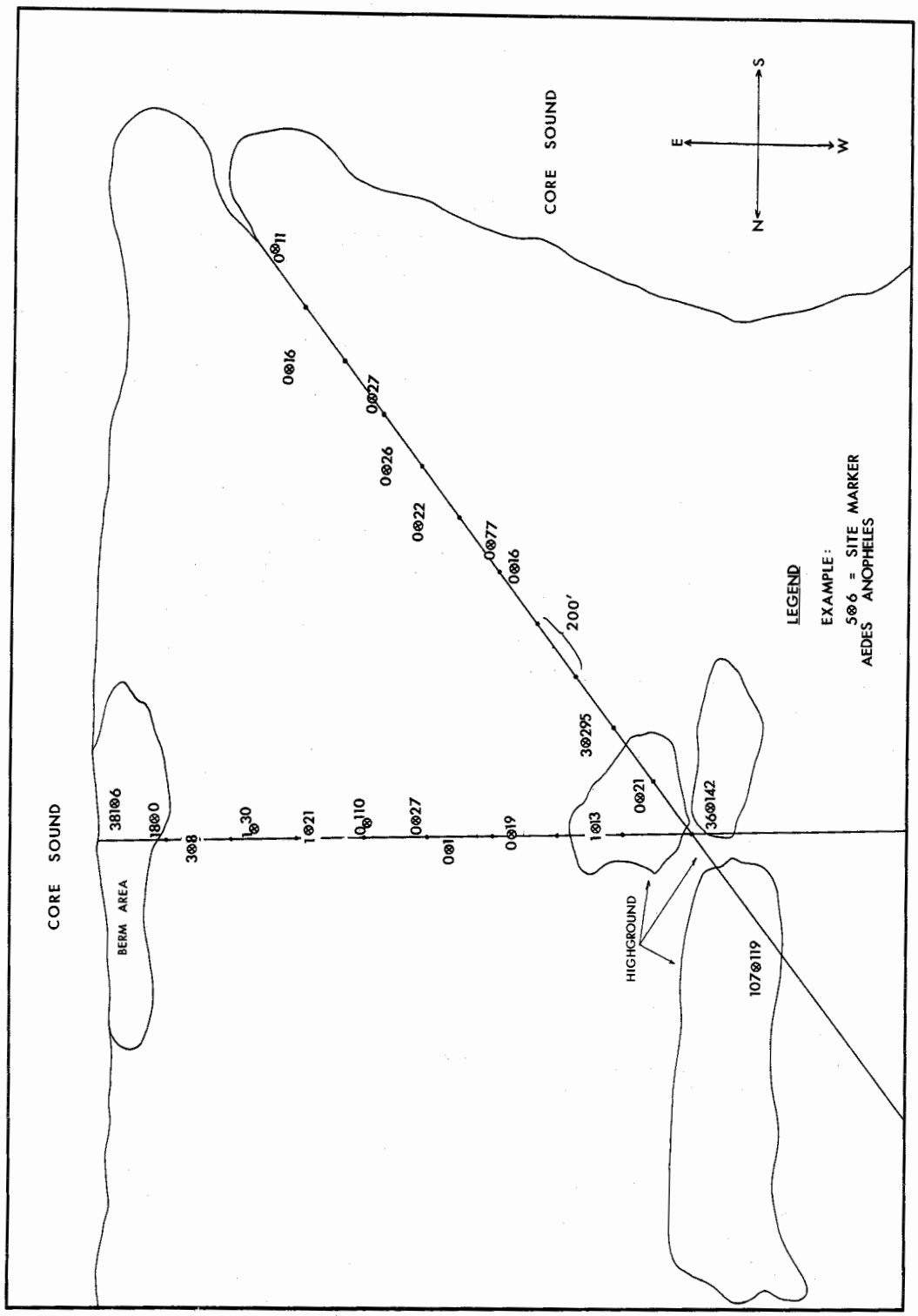



FIG. 10 KING'S POINT STUDY AREA, 1972

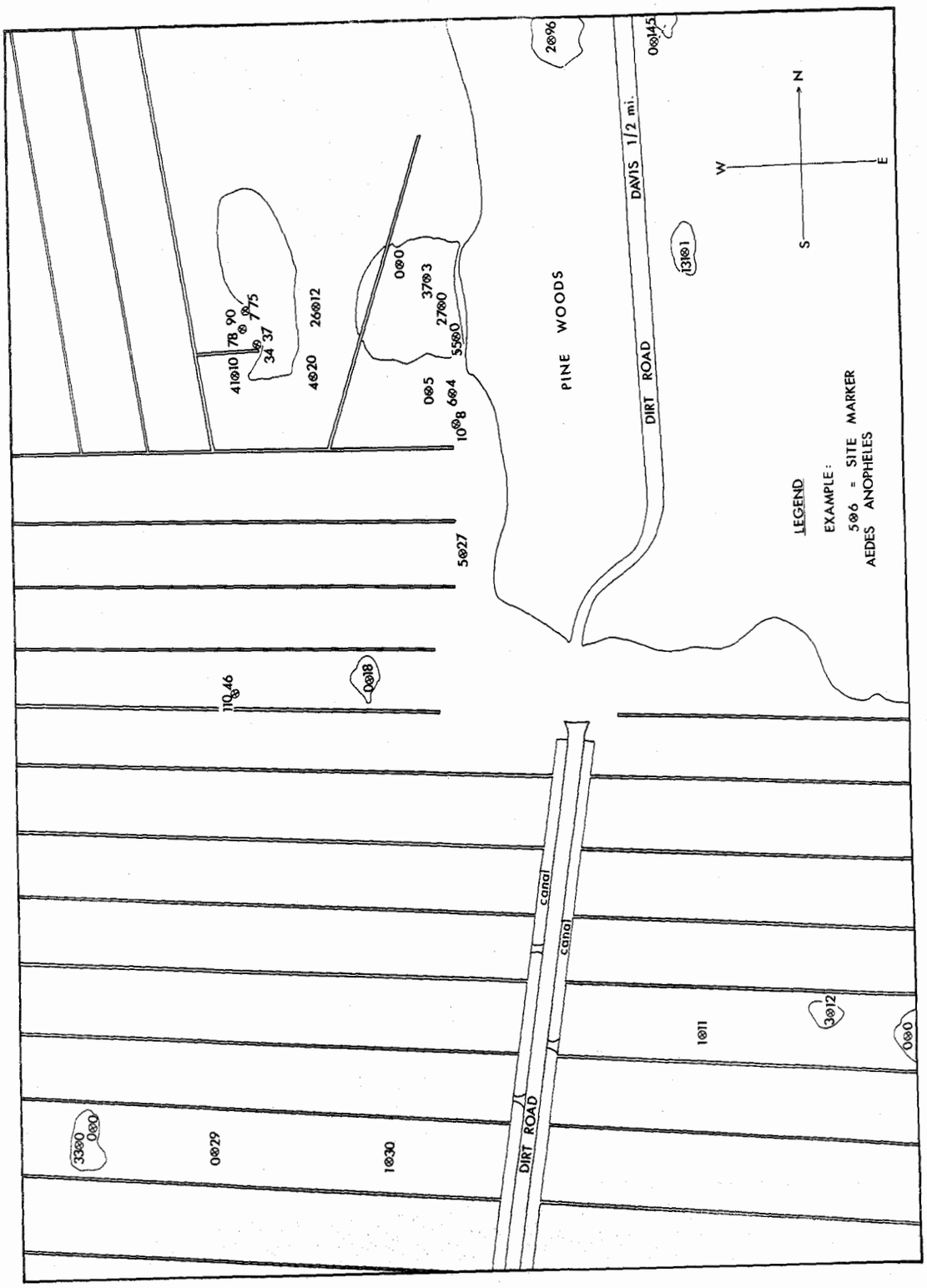
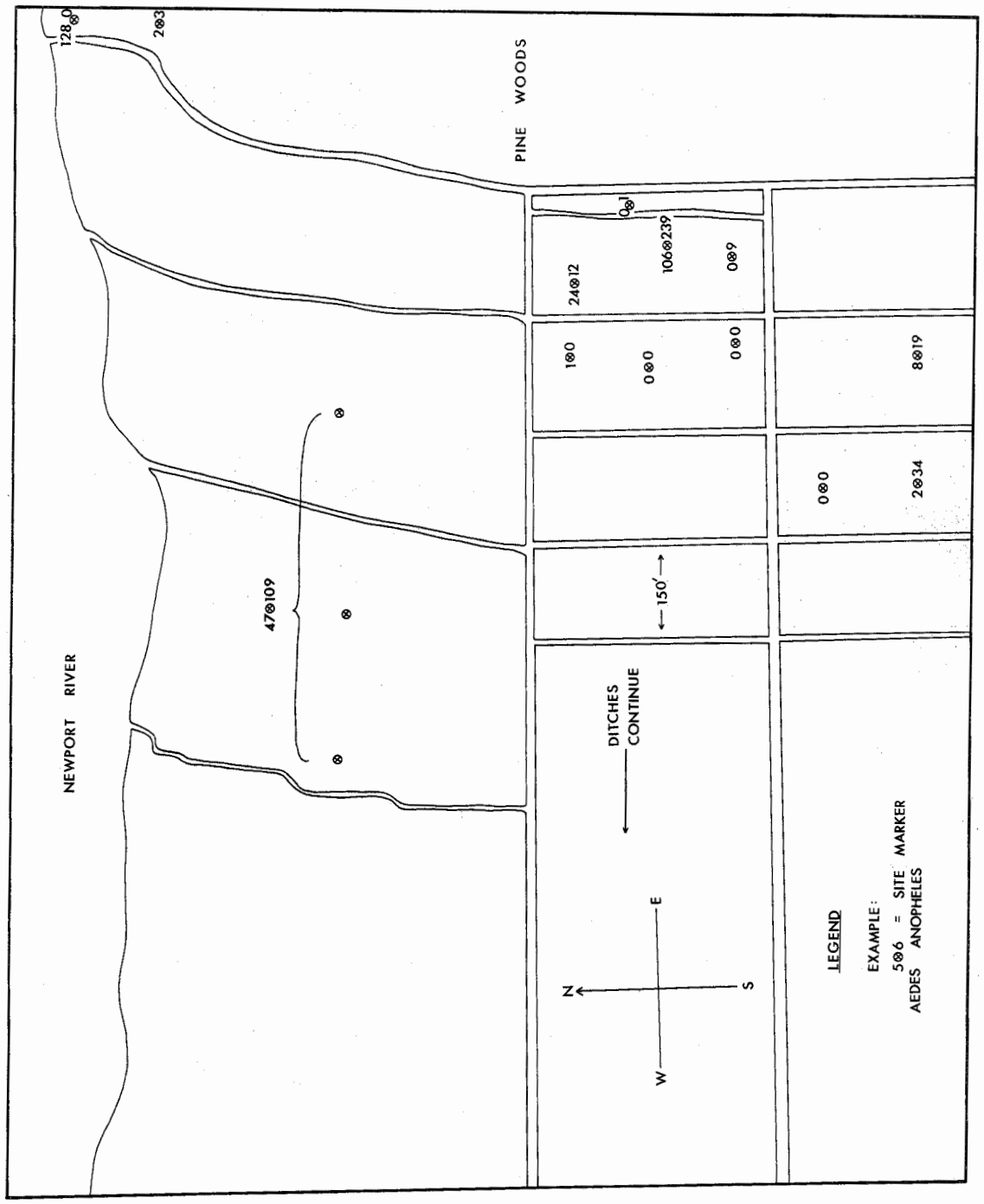



FIG. 11 DAVIS STUDY AREA, 1972

FIG. 12 NEWPORT RIVER STUDY AREA, 1972



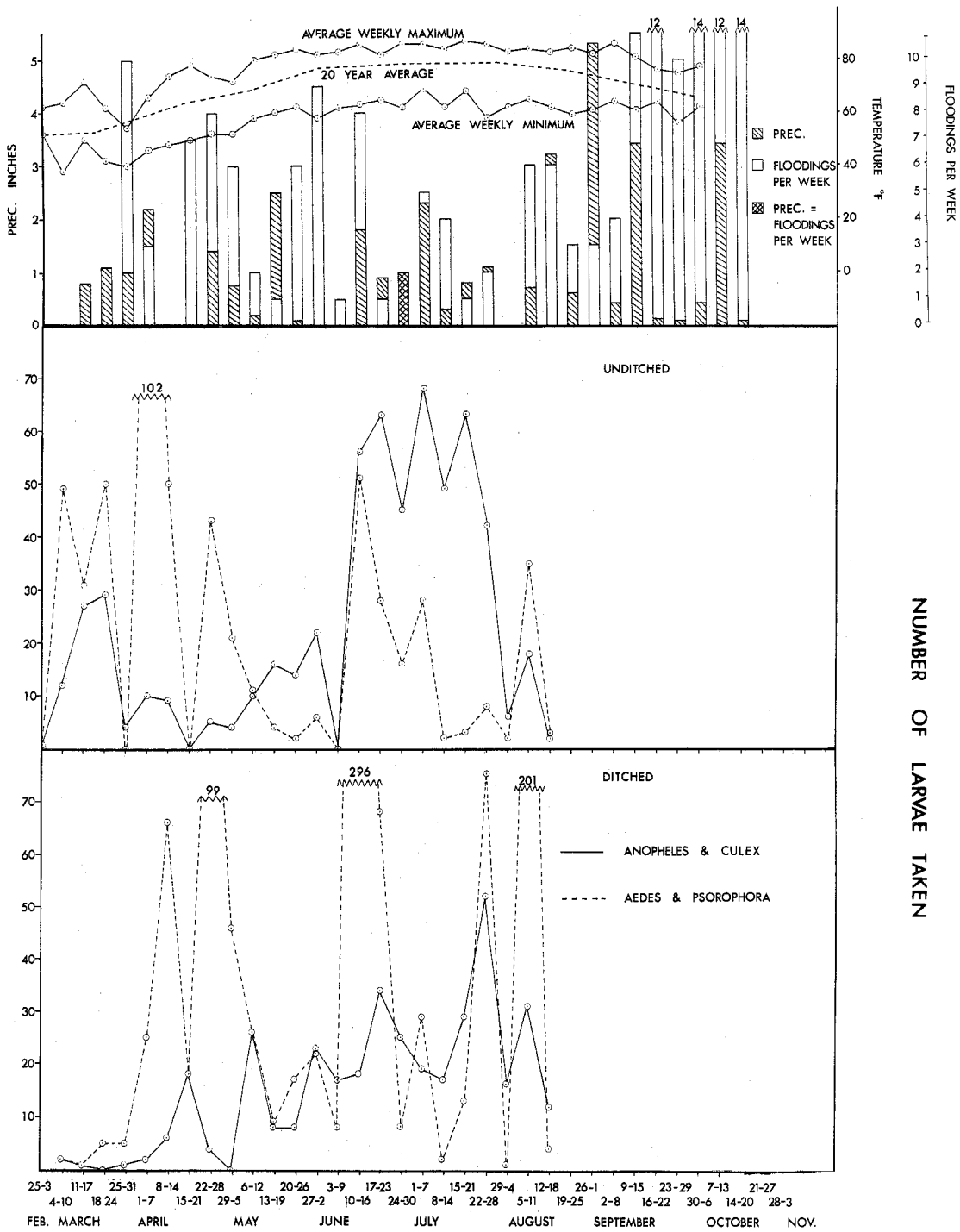



FIG. 13 A COMPARISON OF THE TOTAL NUMBER OF LARVAE TAKEN PER WEEK BETWEEN DITCHED & UNDITCHED AREAS AT NORTH RIVER, 1971

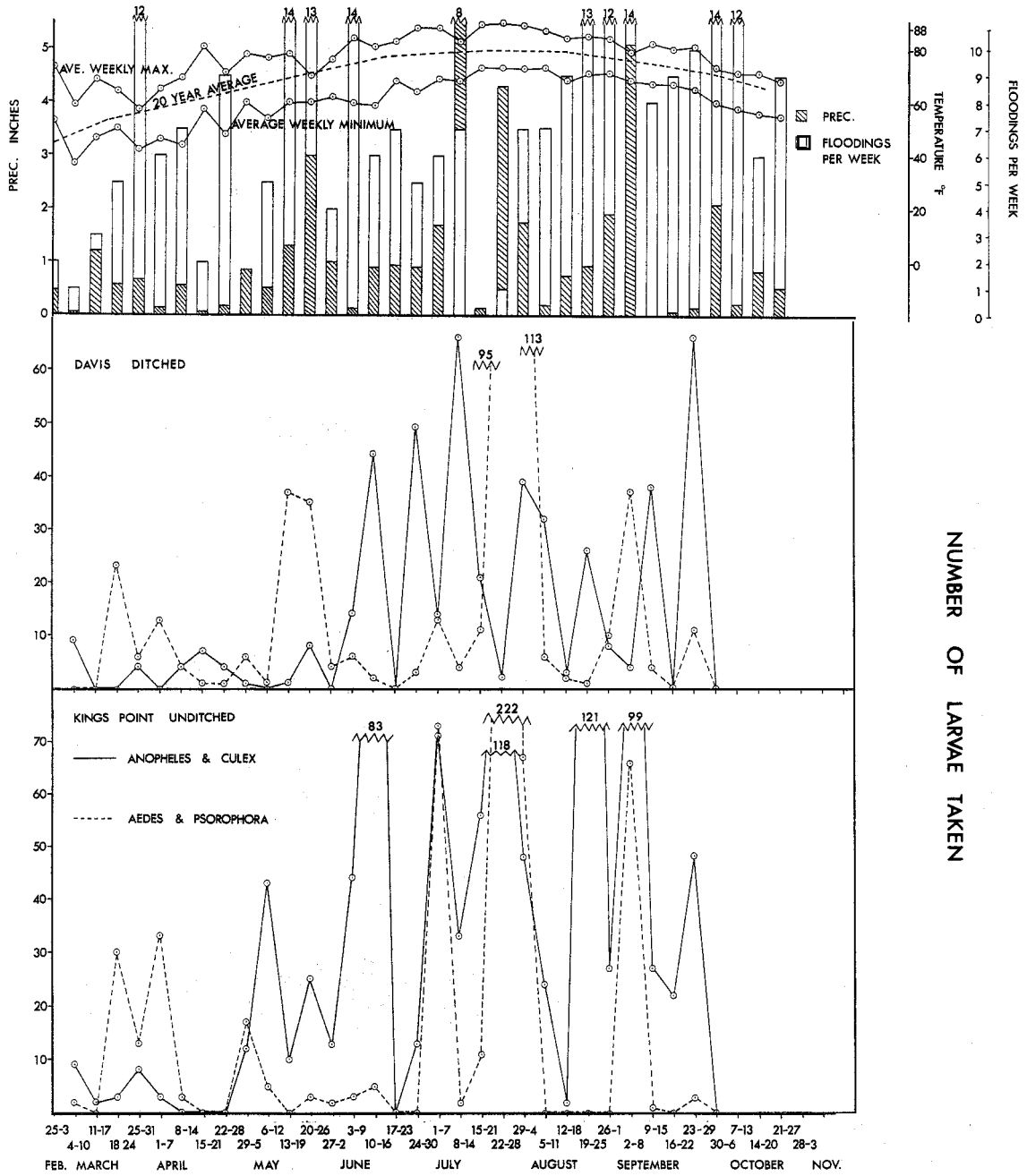



FIG. 14 A COMPARISON OF THE TOTAL NUMBER OF LARVAE TAKEN PER WEEK BETWEEN DITCHED & UNDITCHED AREAS AT DAVIS, KING'S POINT, 1972

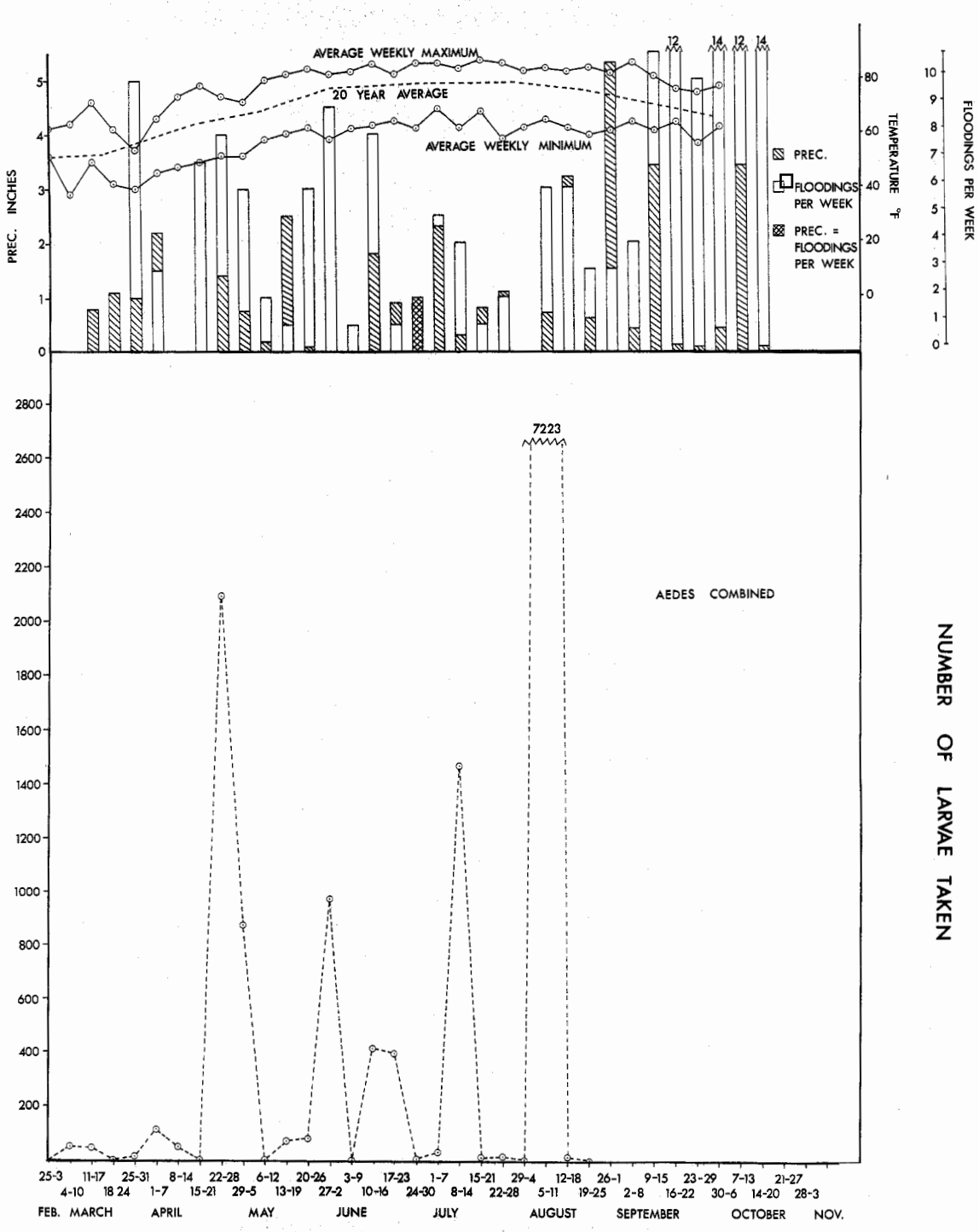



FIG. 15 TOTAL NUMBER OF LARVAE TAKEN PER WEEK AT WARD'S CREEK, 1971

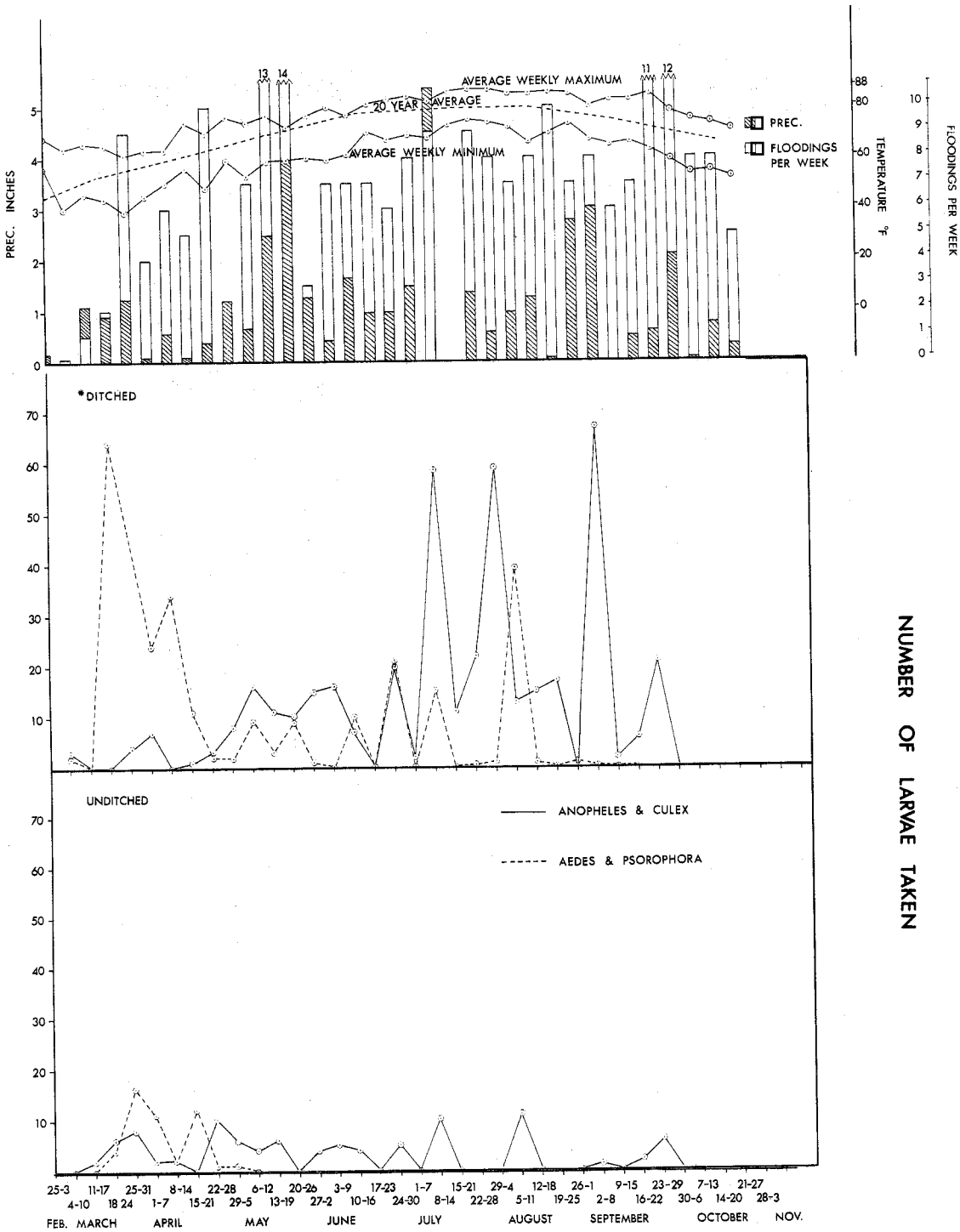



FIG. 16 A COMPARISON OF THE TOTAL NUMBER OF LARVAE TAKEN PER WEEK BETWEEN DITCHED & UNDITCHED AREAS AT NEWPORT RIVER, 1972

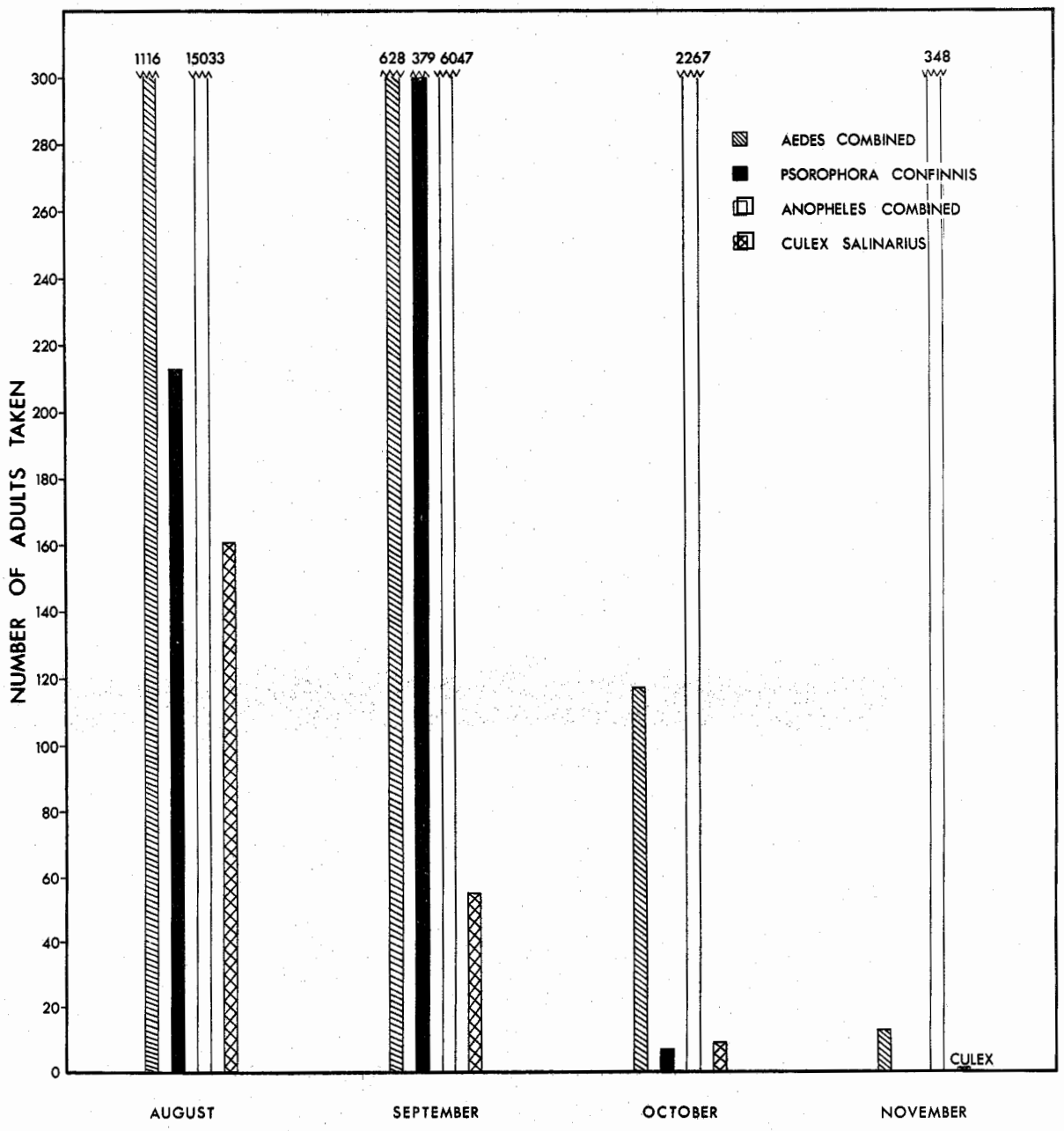



FIG. 17 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH AT THE NORTH RIVER LIGHT TRAP ( 1970 )

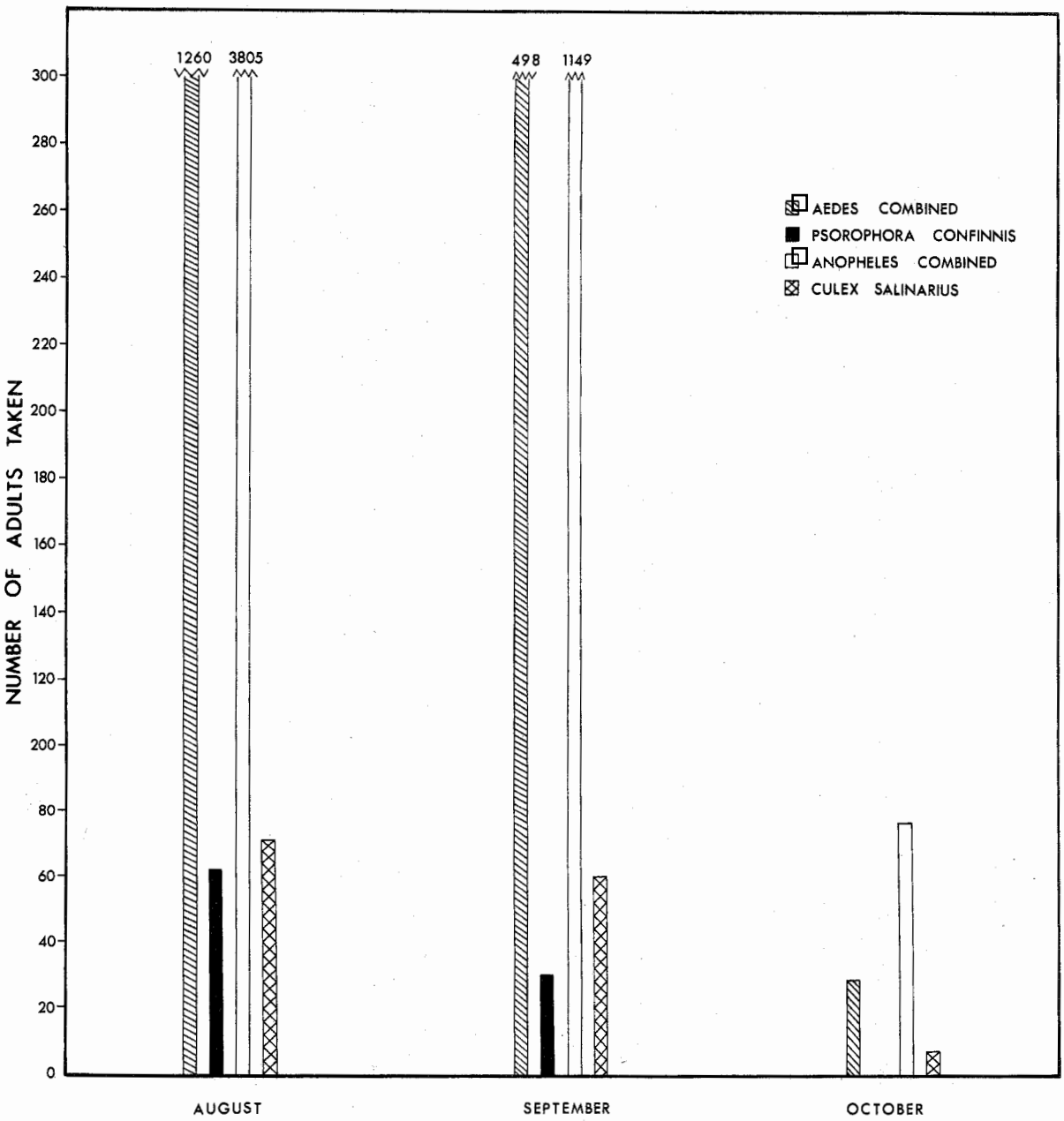



FIG. 18 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH AT THE WILLISTON LIGHT TRAP (1970)

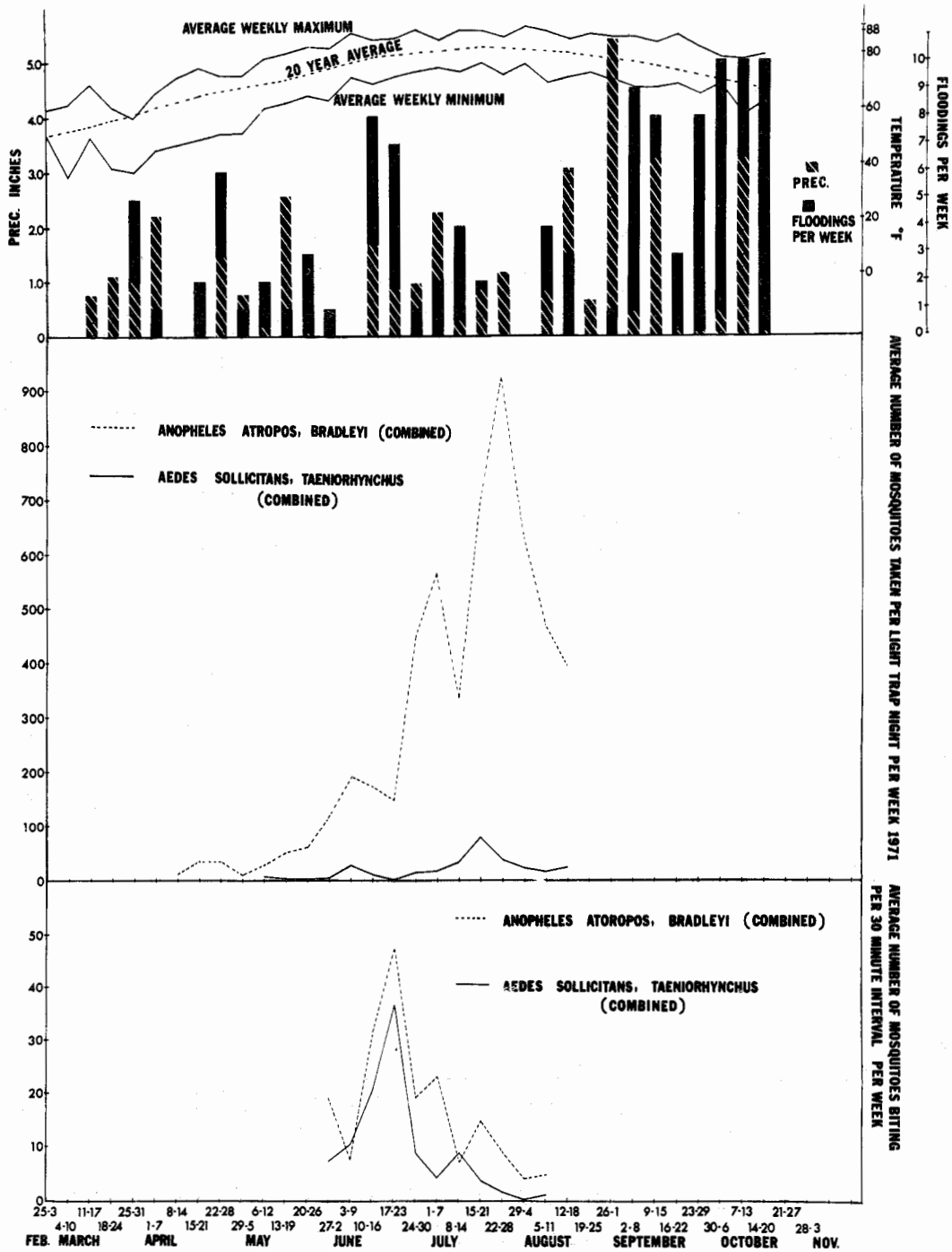



FIG. 19 ACCUMULATIVE DATA FOR THE INTERVAL MARCH 1st - AUGUST 17, 1971 NORTH RIVER CARTERET COUNTY, N. C.

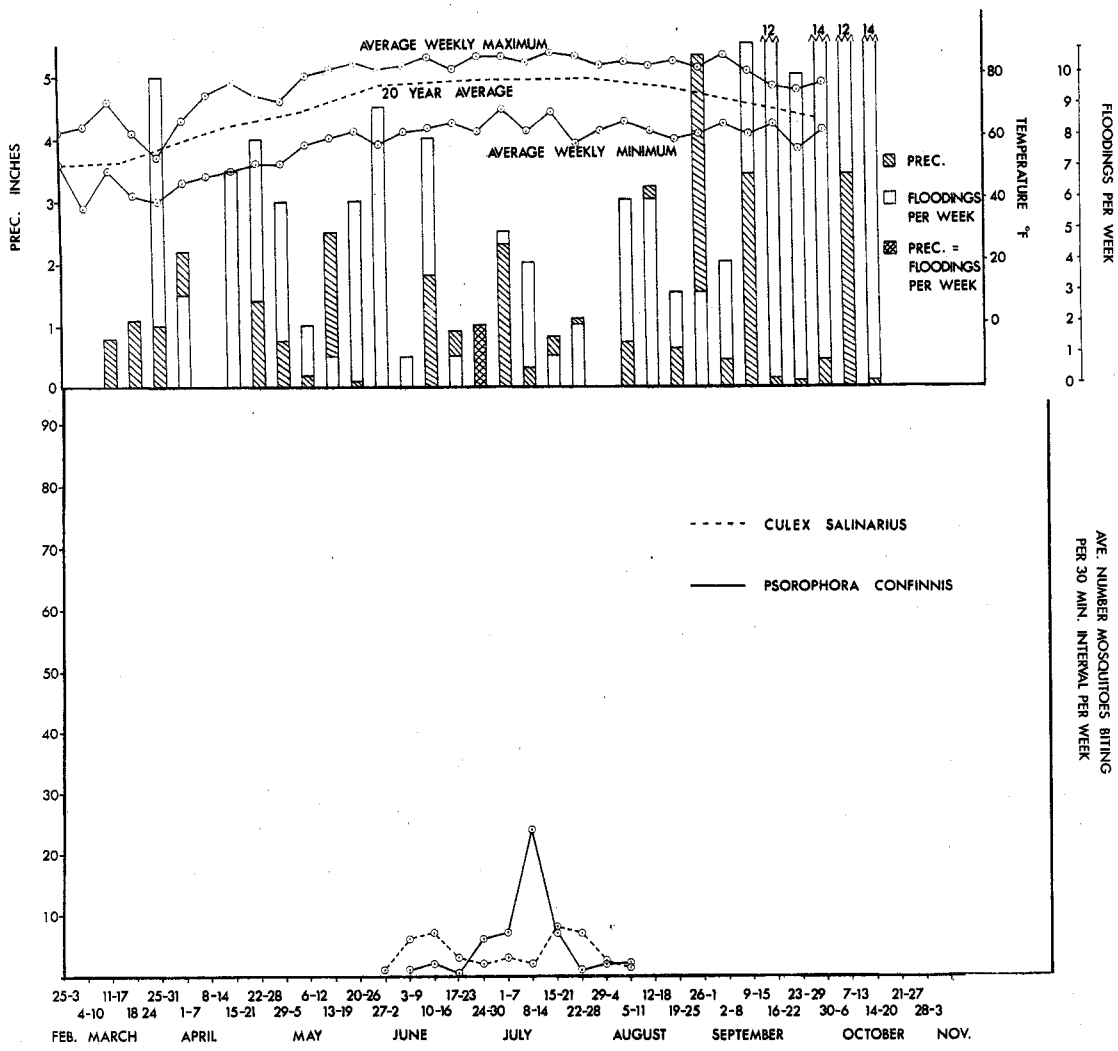



FIG. 20 ACCUMULATIVE DATA FOR THE INTERVAL MAR. 1st-OCT. 31, 1972
NORTH RIVER, 1971

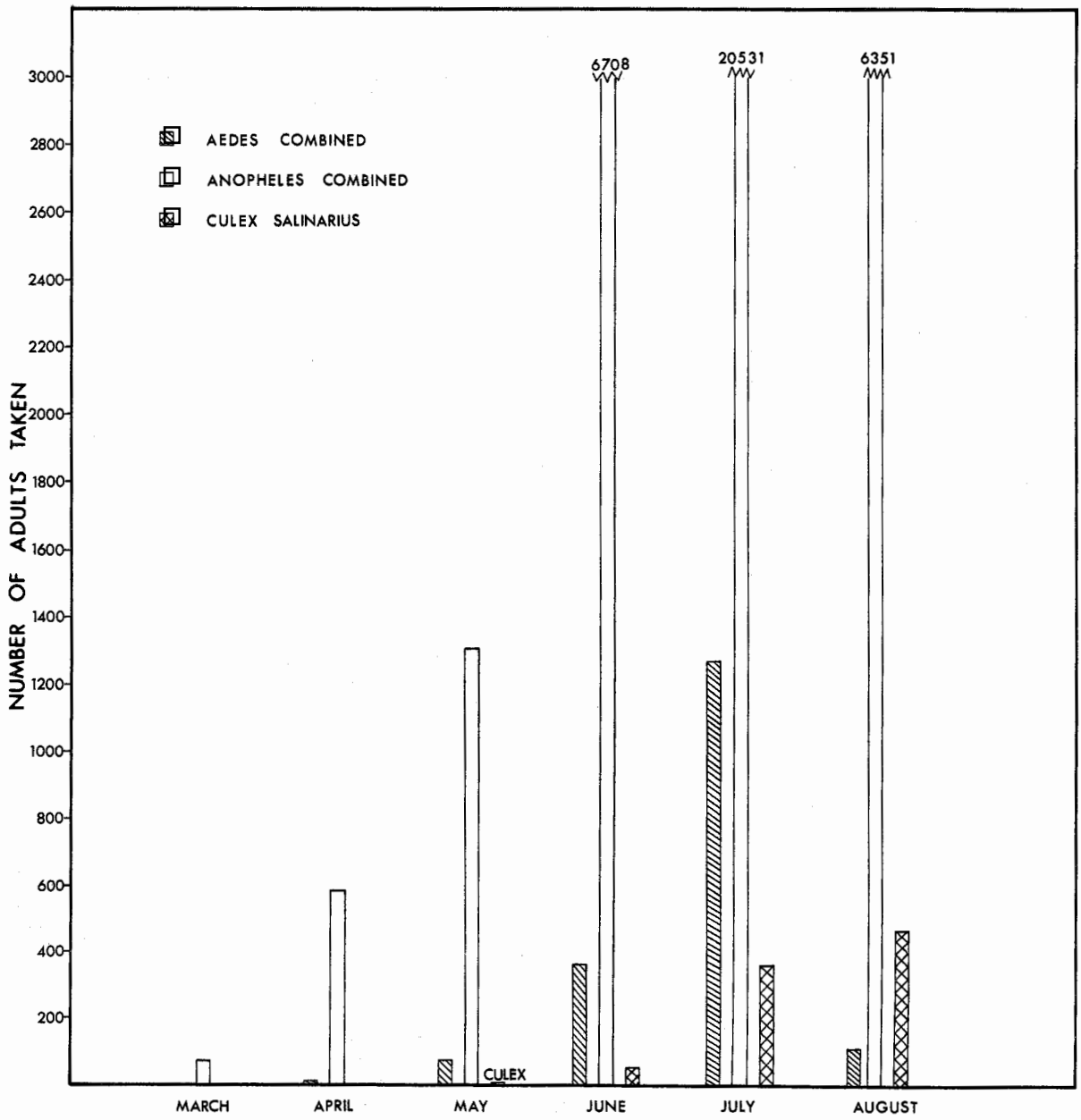



FIG. 21 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH AT THE NORTH RIVER LIGHT TRAP (1971)

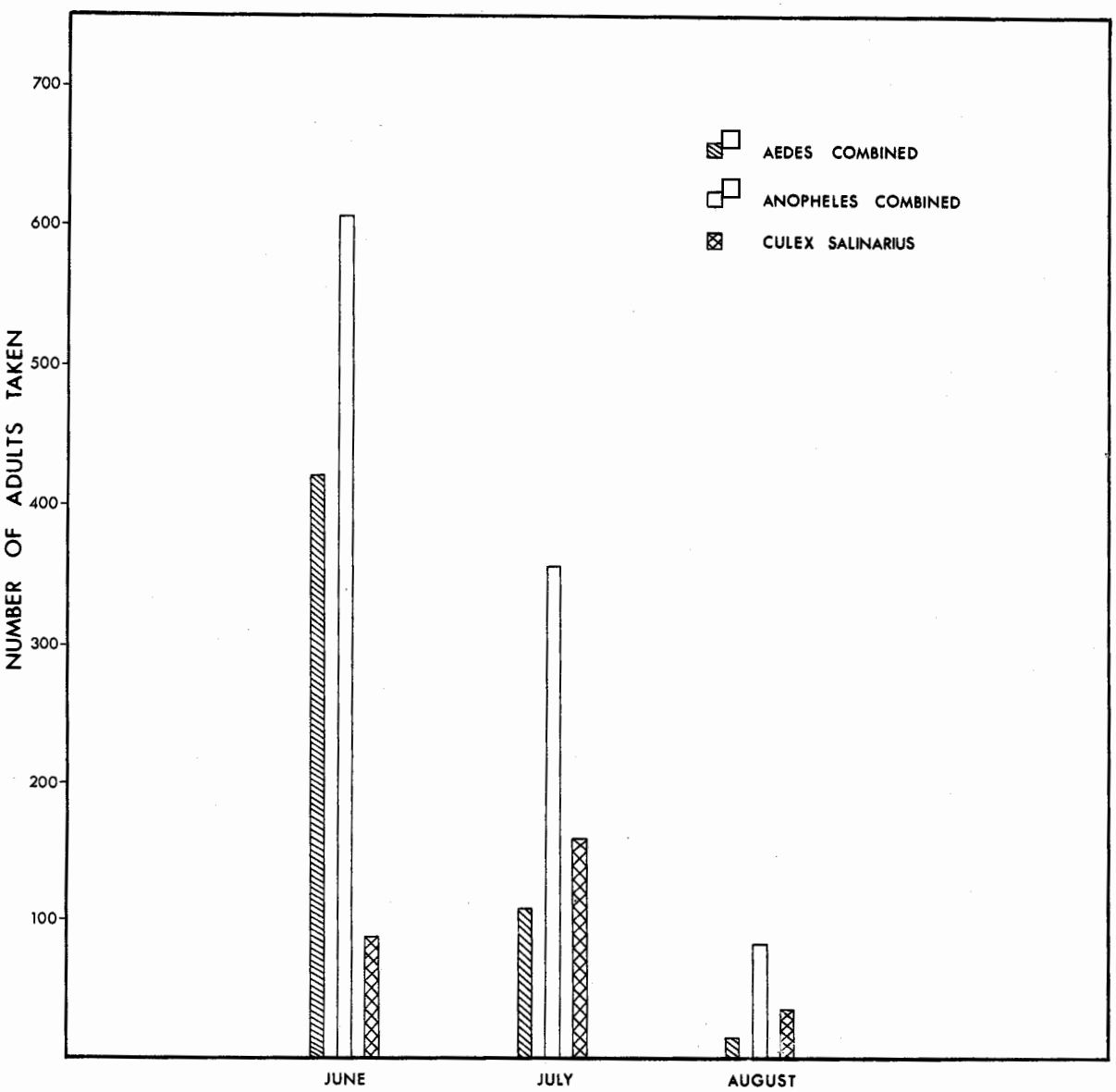



FIG. 22 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH DURING BITING COUNTS AT NORTH RIVER (1971)

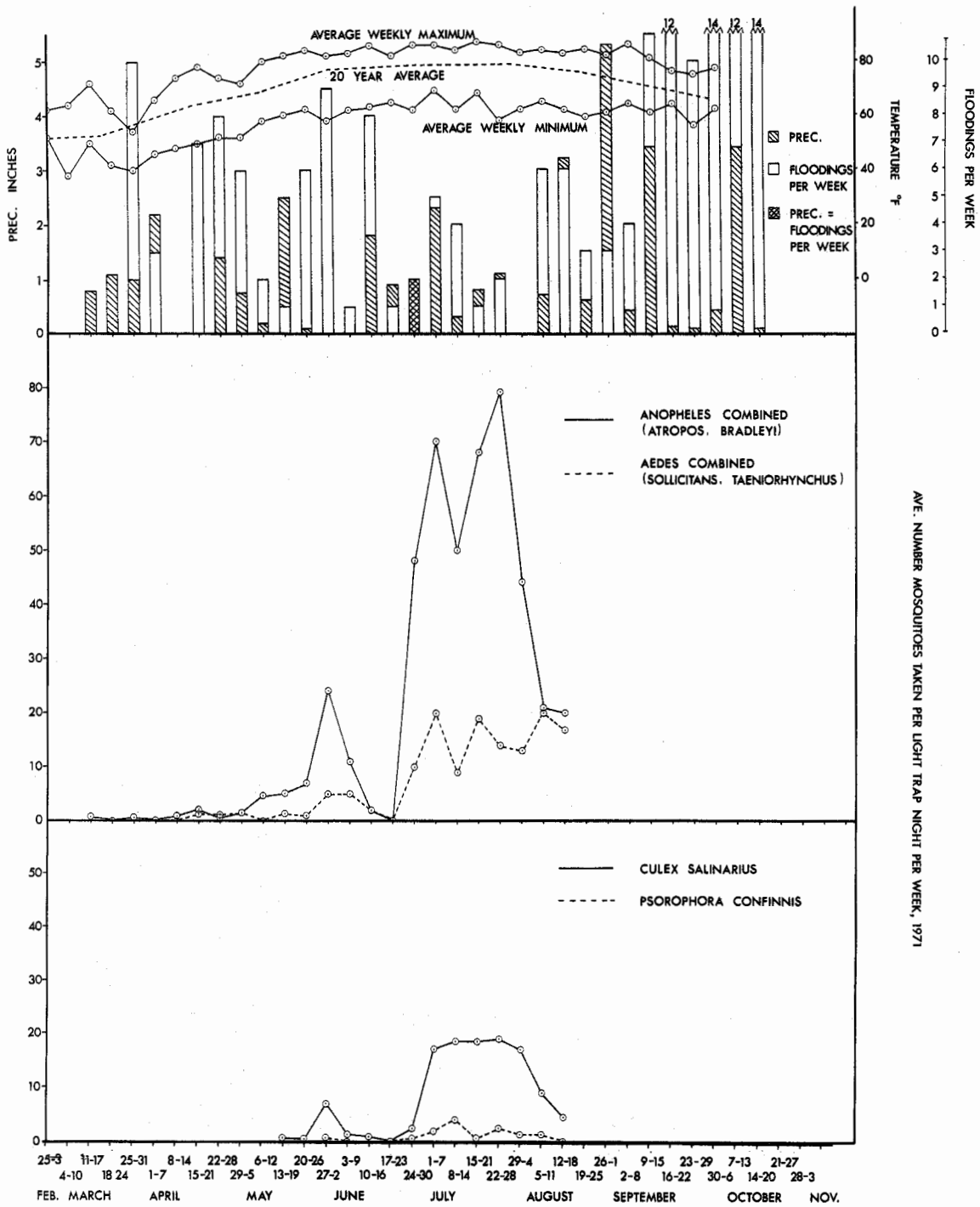



FIG. 23 ACCUMULATIVE DATA FOR THE INTERVAL MAR. 1st-AUG. 17, 1971
WILLISTON, N. C.

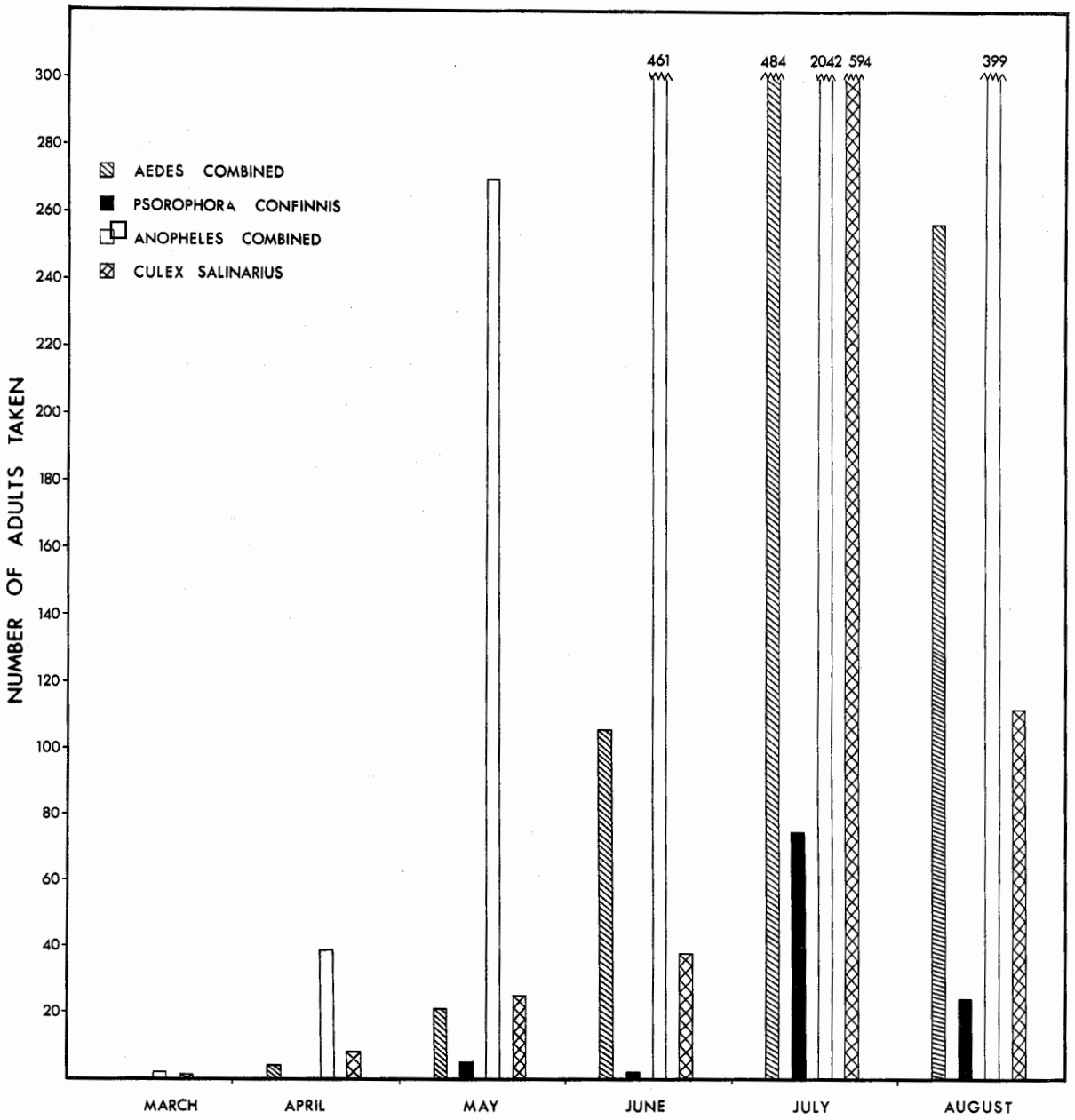



FIG. 24 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH AT THE WILLISTON LIGHT TRAP (1971)

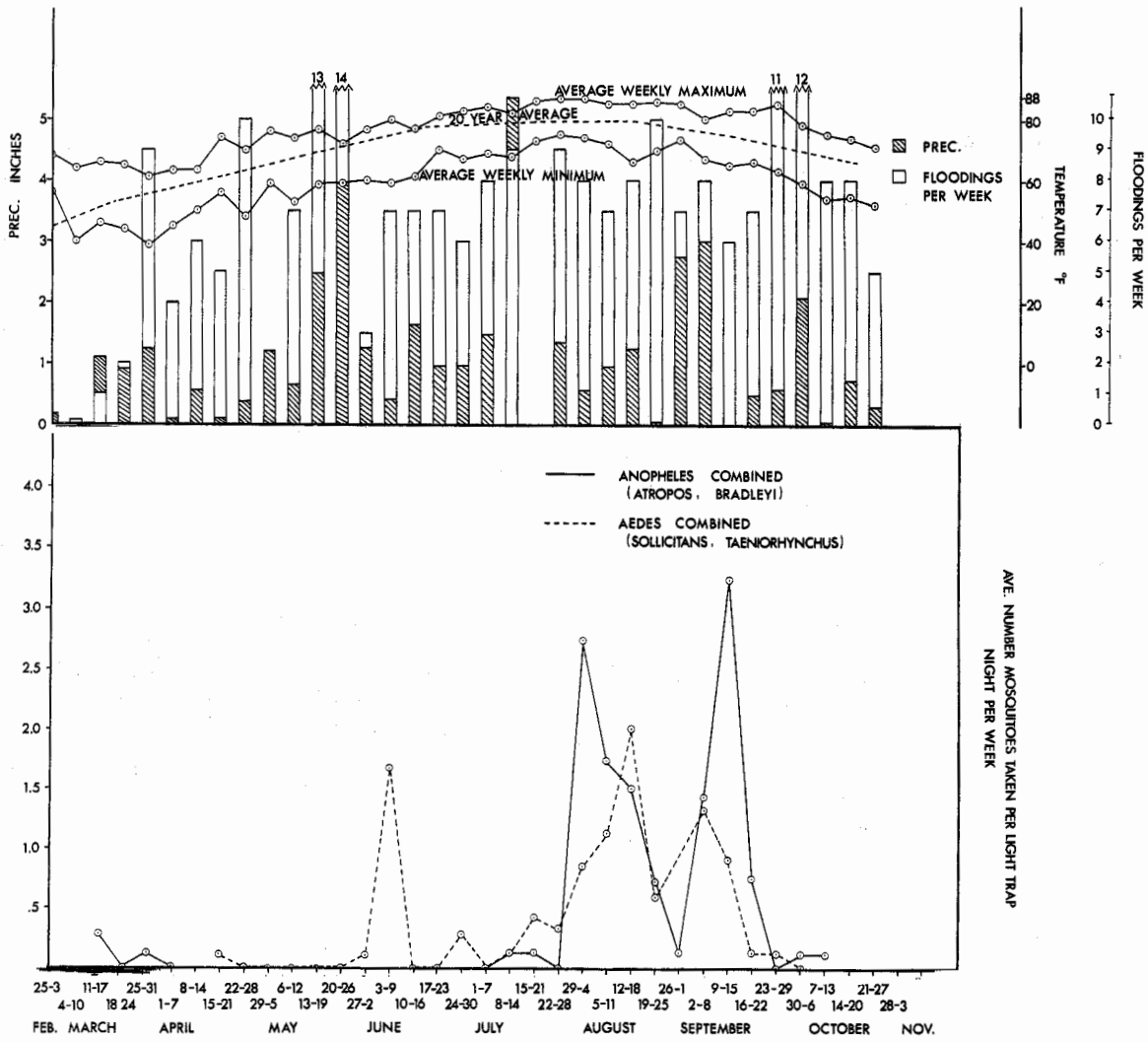



FIG. 25 ACCUMULATIVE DATA FOR THE INTERVAL MAR. 1st-OCT. 31, 1972
ATLANTIC BEACH, N. C.

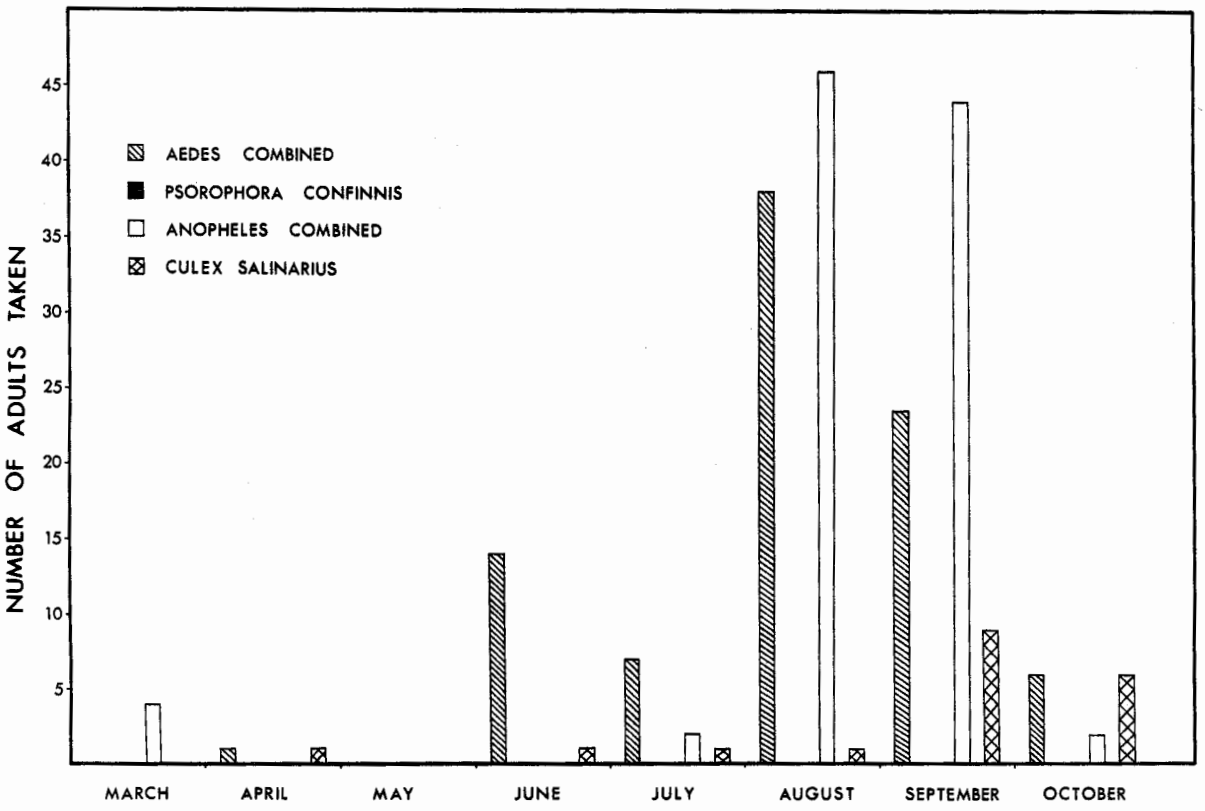



FIG. 26 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH AT THE ATLANTIC BEACH LIGHT TRAP (1972)

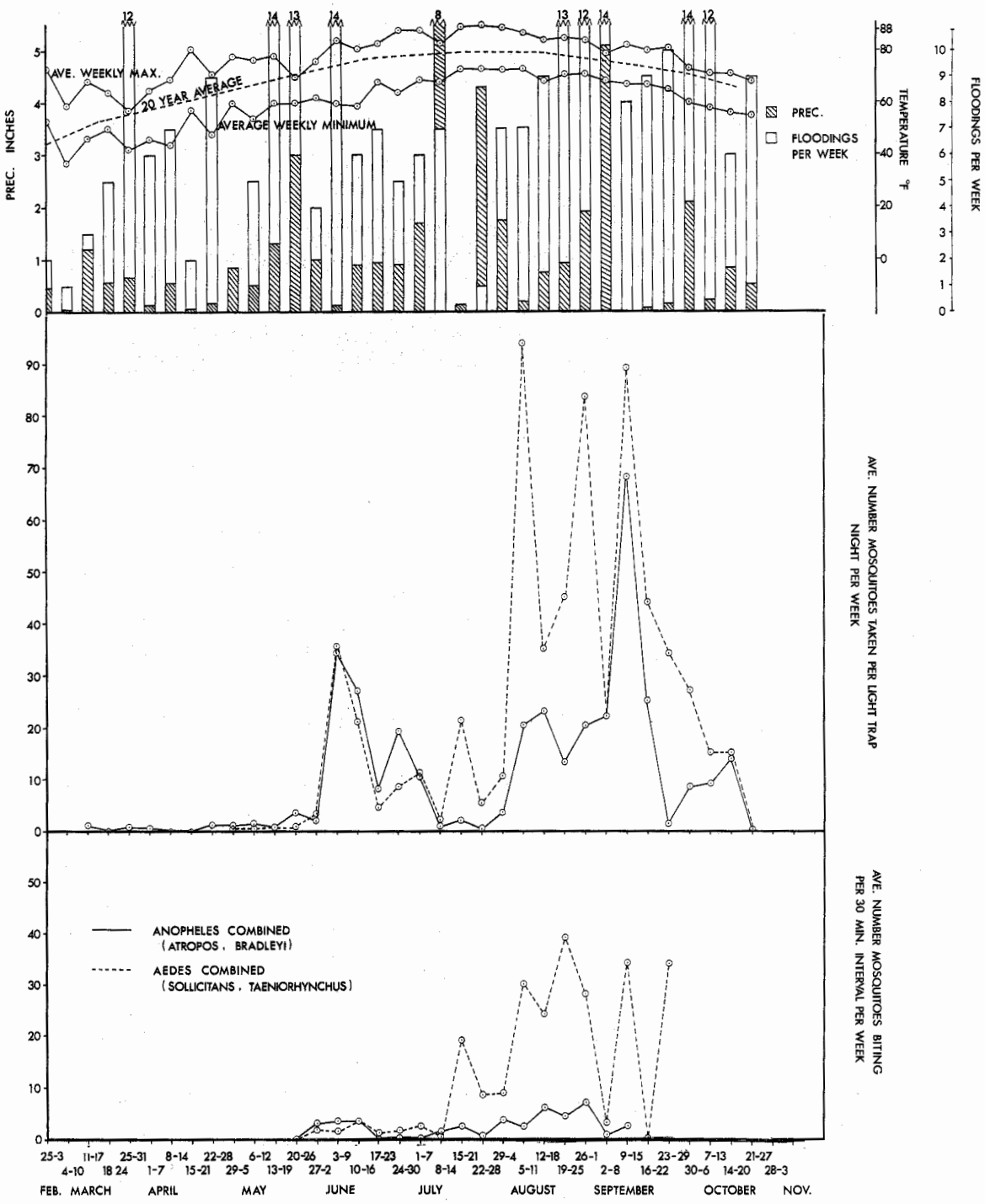



FIG. 27 ACCUMULATIVE DATA FOR THE INTERVAL MAR. 1st-OCT. 31, 1972
DAVIS, N. C.

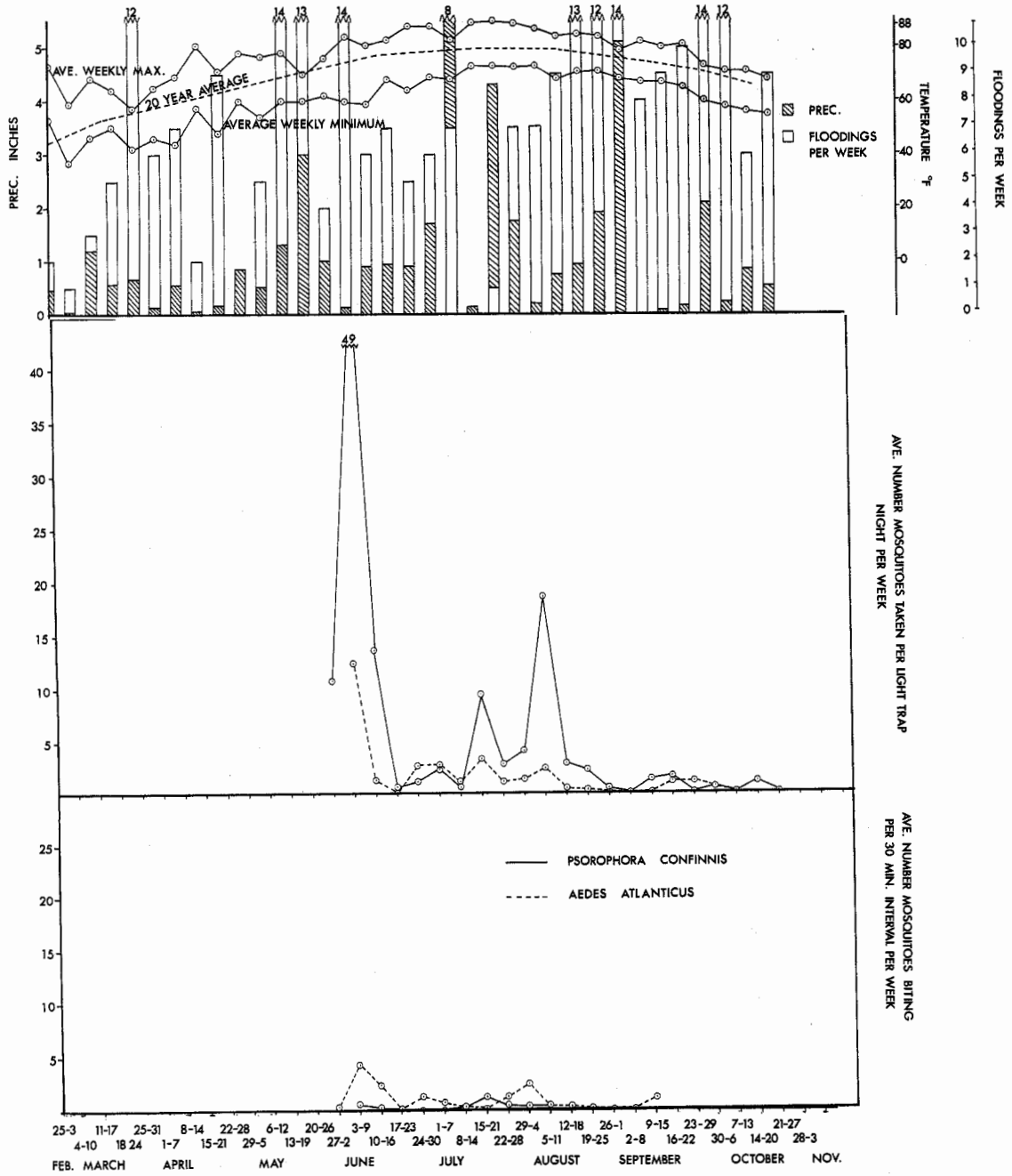



FIG. 28 ACCUMULATIVE DATA FOR THE INTERVAL MAR. 1st-OCT. 31, 1972
DAVIS, N. C.

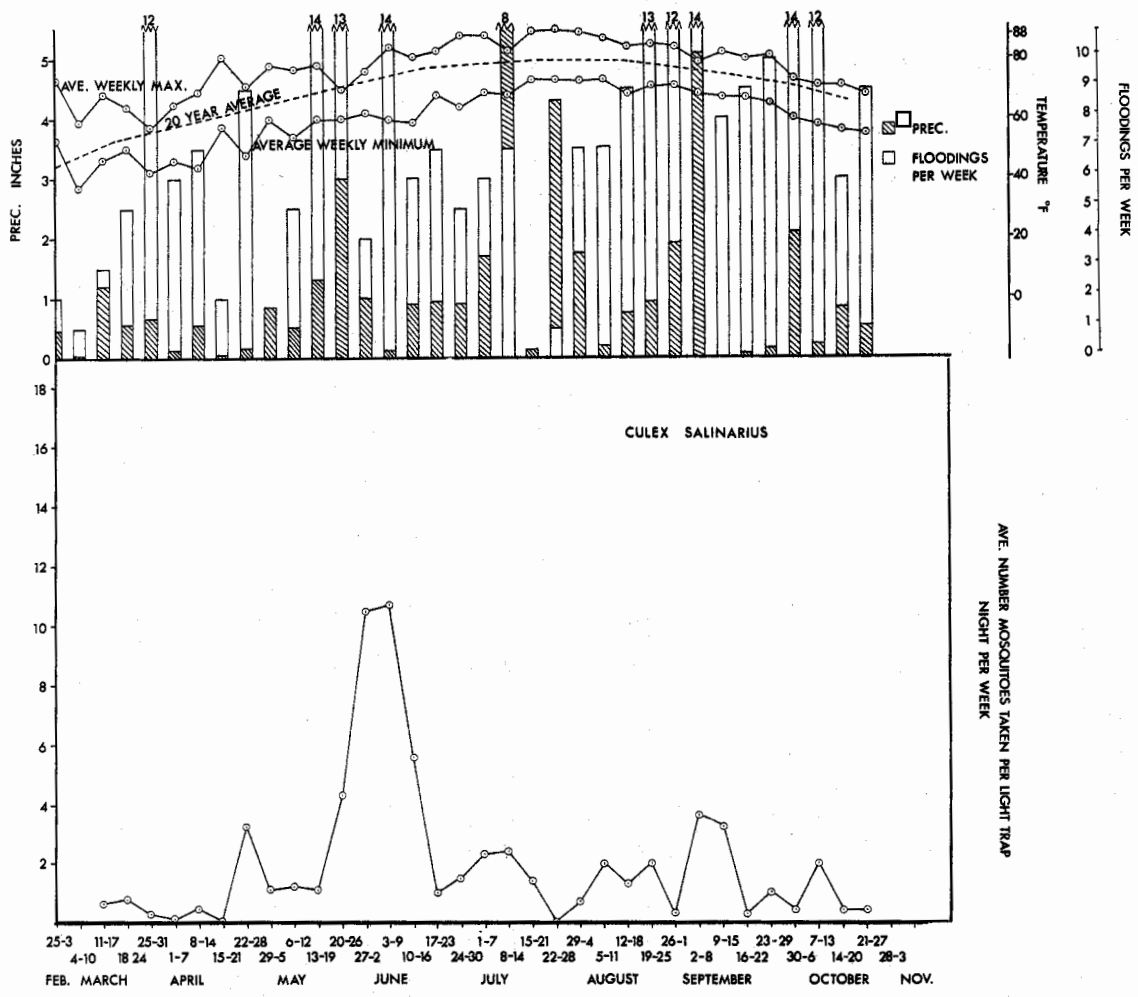



FIG. 29 ACCUMULATIVE DATA FOR THE INTERVAL MAR. 1st-OCT. 31, 1972
DAVIS, N. C.

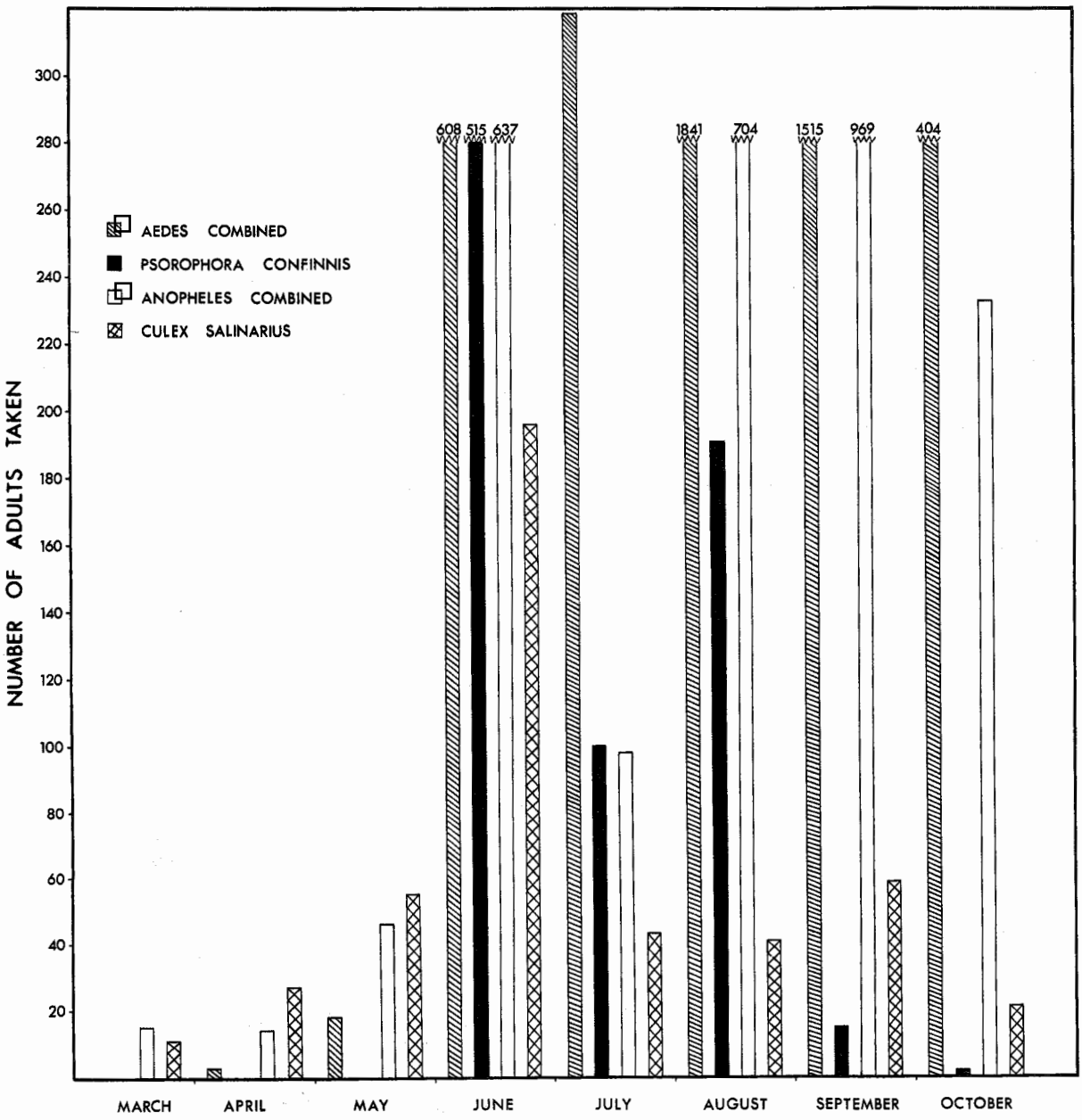



FIG. 30 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH AT THE DAVIS LIGHT TRAP (1972)

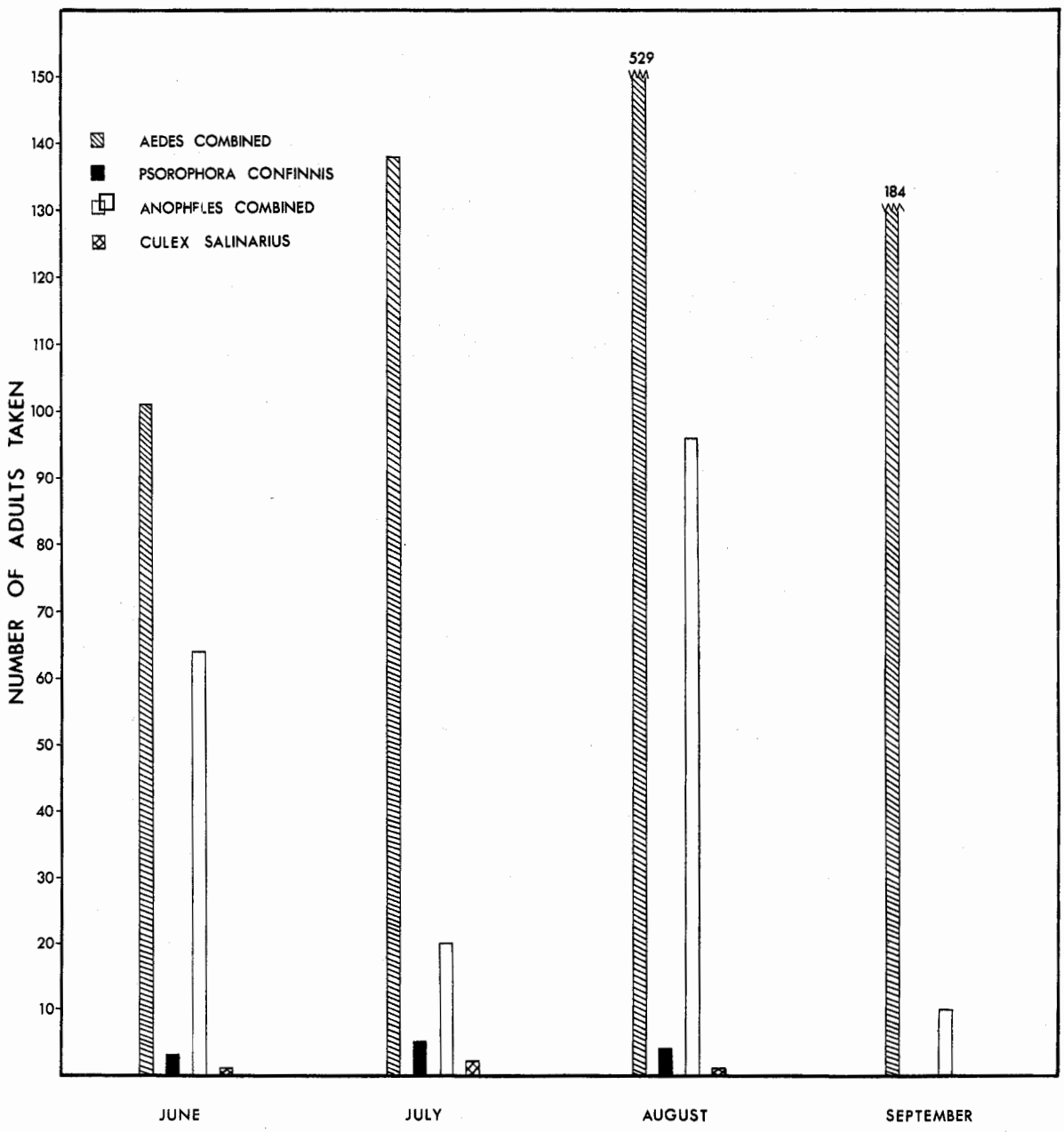



FIG. 31 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH DURING BITING COUNTS AT DAVIS (1972)

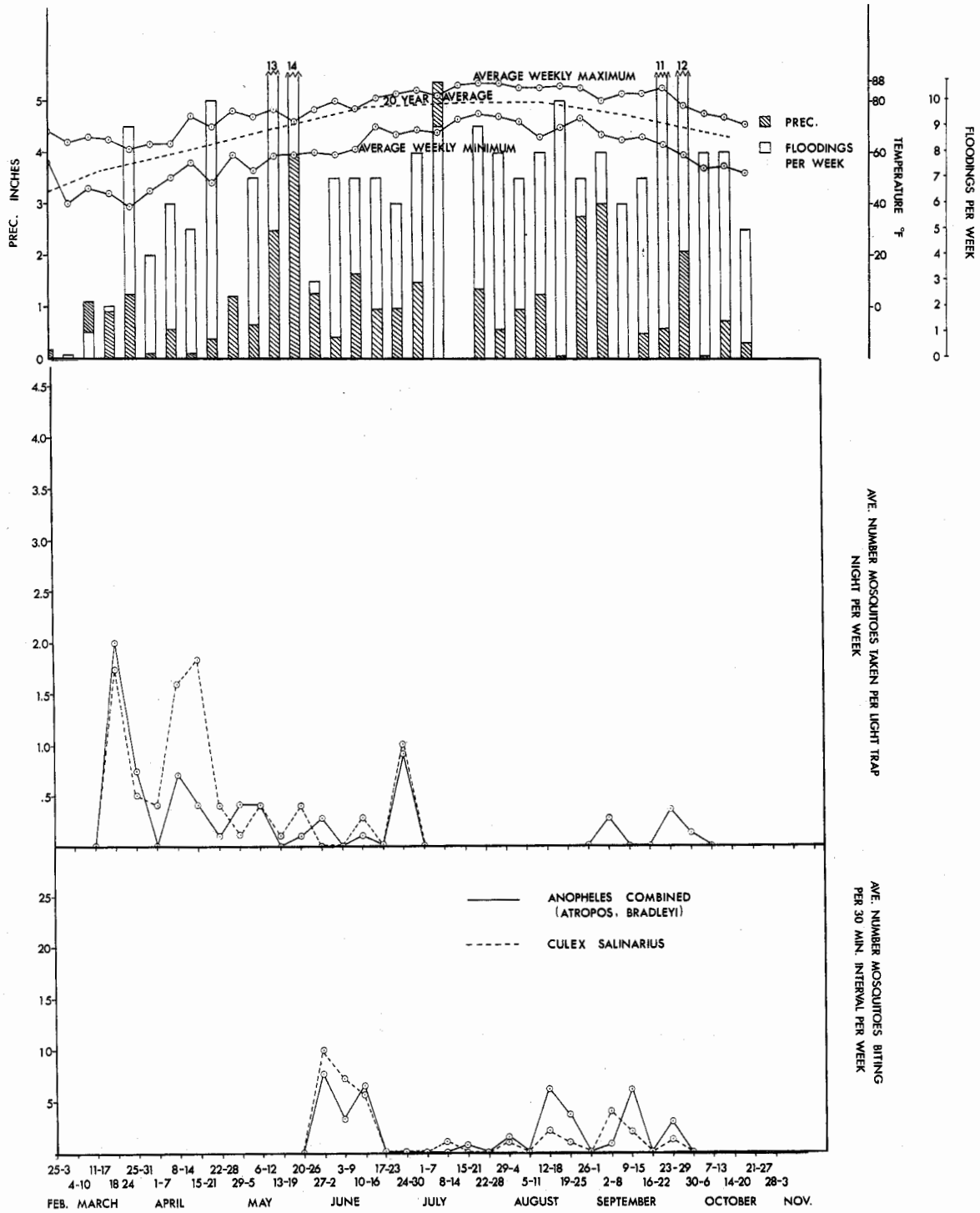



FIG. 32 ACCUMULATIVE DATA FOR THE INTERVAL MAR. 1st-OCT. 31, 1972
NEWPORT RIVER, 1972

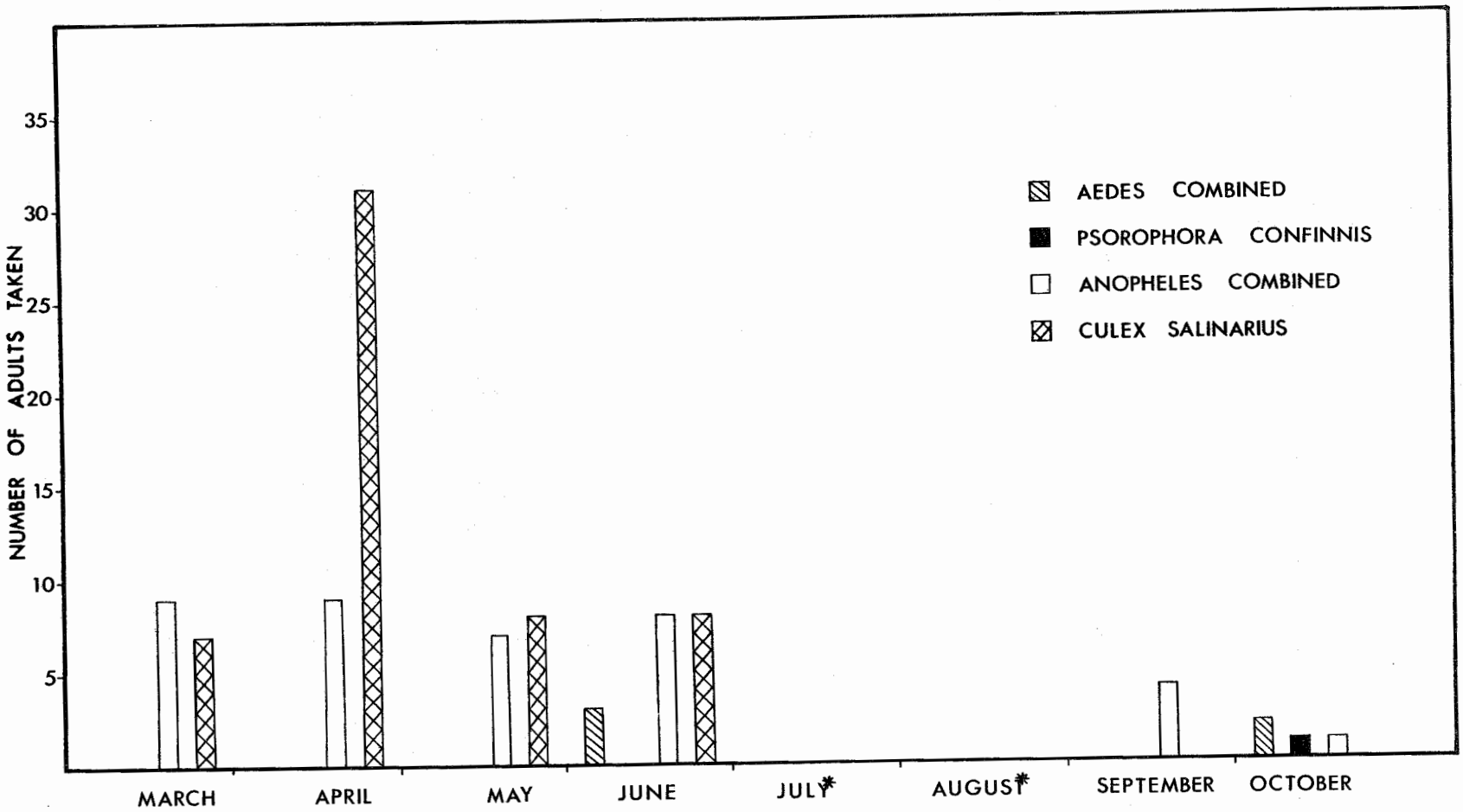



FIG. 33 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH AT THE NEWPORT RIVER LIGHT TRAP ( 1972 )

* DATA NOT AVAILABLE

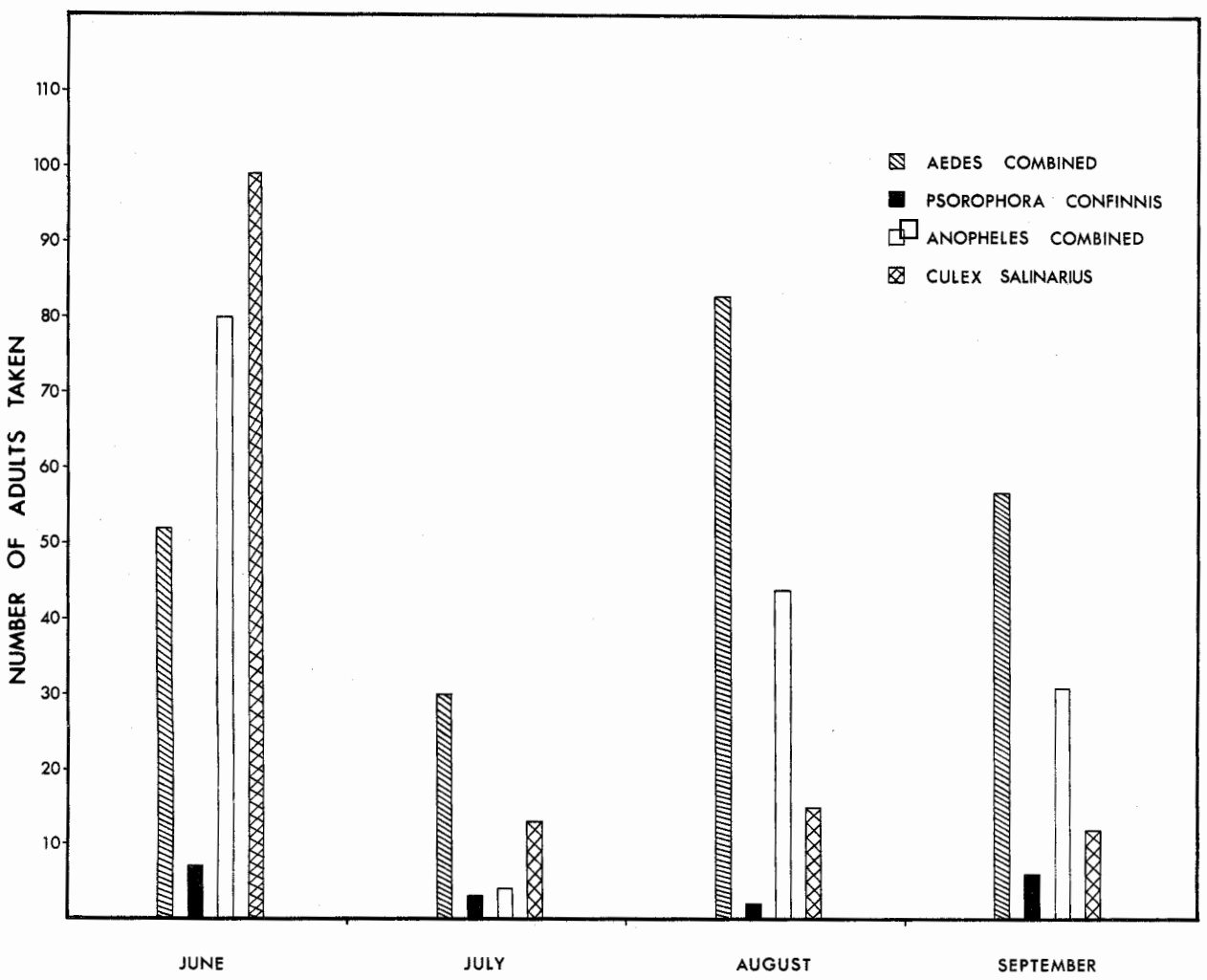



FIG. 34 TOTAL NUMBER OF ADULT MOSQUITOES TAKEN PER MONTH DURING BITING COUNTS AT NEWPORT RIVER (1972)

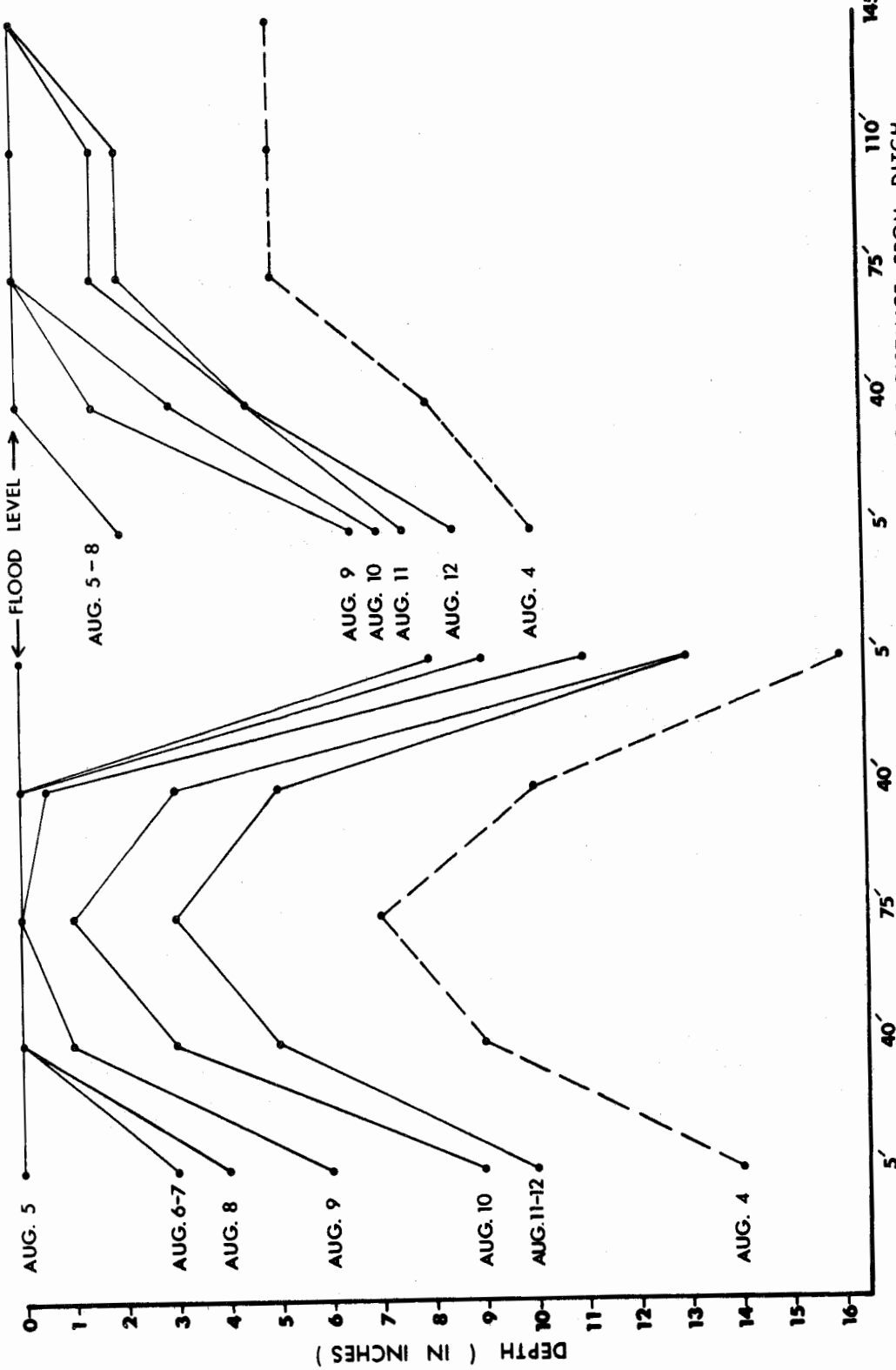


FIG. 35 NORTH RIVER STUDY AREA. CARTERET CO. N.C.. AUG. 1971
EFFECT OF DITCHING ON GROUND WATER LEVEL
← FLOOD LEVEL →
AUG. 5
AUG. 6-7
AUG. 8
AUG. 9
AUG. 10
AUG. 11-12
AUG. 4
AUG. 5 - 8
AUG. 9
AUG. 10
AUG. 11
AUG. 12
AUG. 4
DEPTH ( IN INCHES )
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
DITCH
5'
40'
75'
HOLE DISTANCE FROM DITCH
5'
DITCH
5'
40'
75'
110'
145'
HOLE DISTANCE FROM DITCH

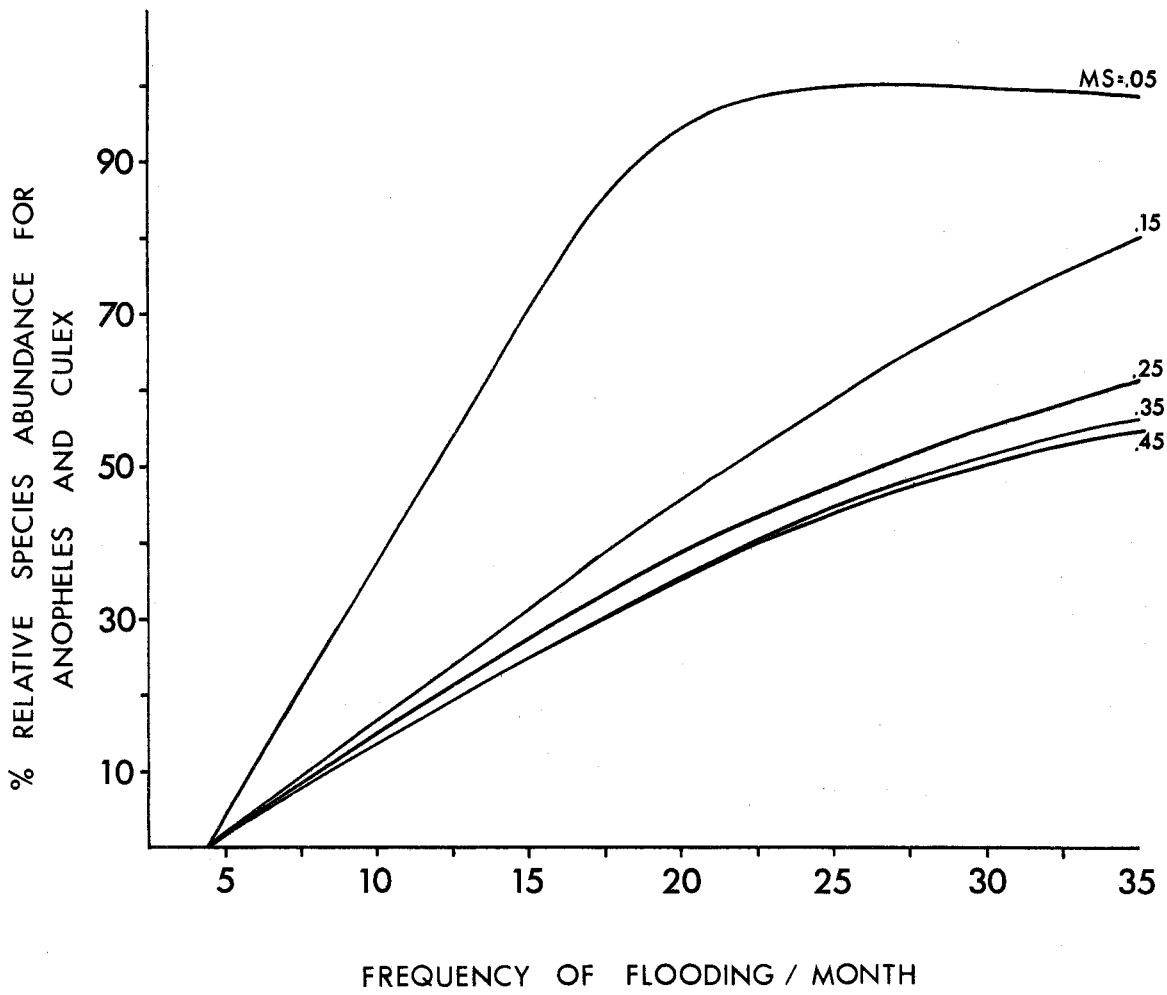



FIG. 36 RESPONSE TO FREQUENCY OF FLOODING AT 5 MEAN SLOPE VALUES ( DITCHED SITES )

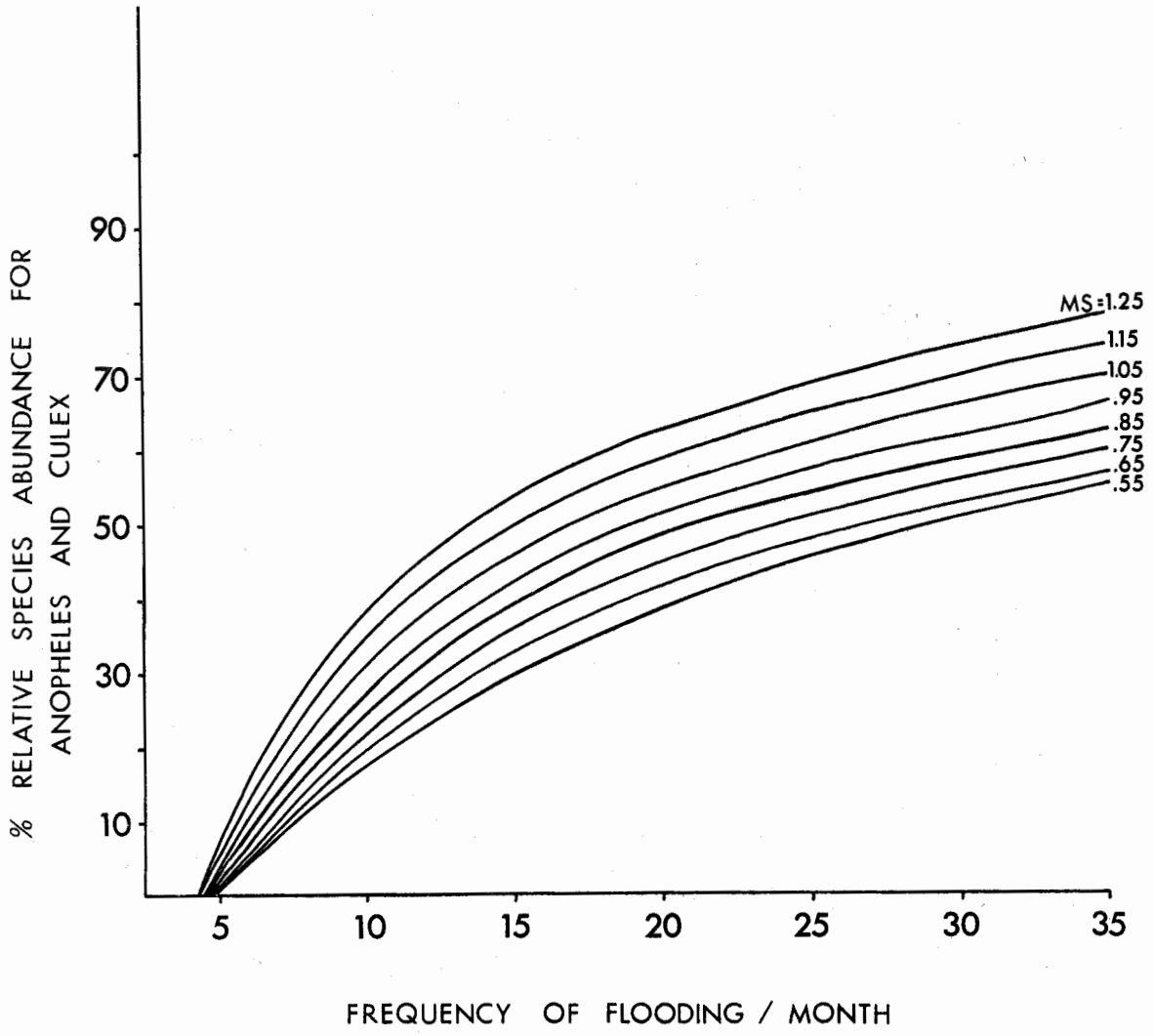



FIG. 37 RESPONSE TO FREQUENCY OF FLOODING AT 8 MEAN SLOPE VALUES ( DITCHED SITES )

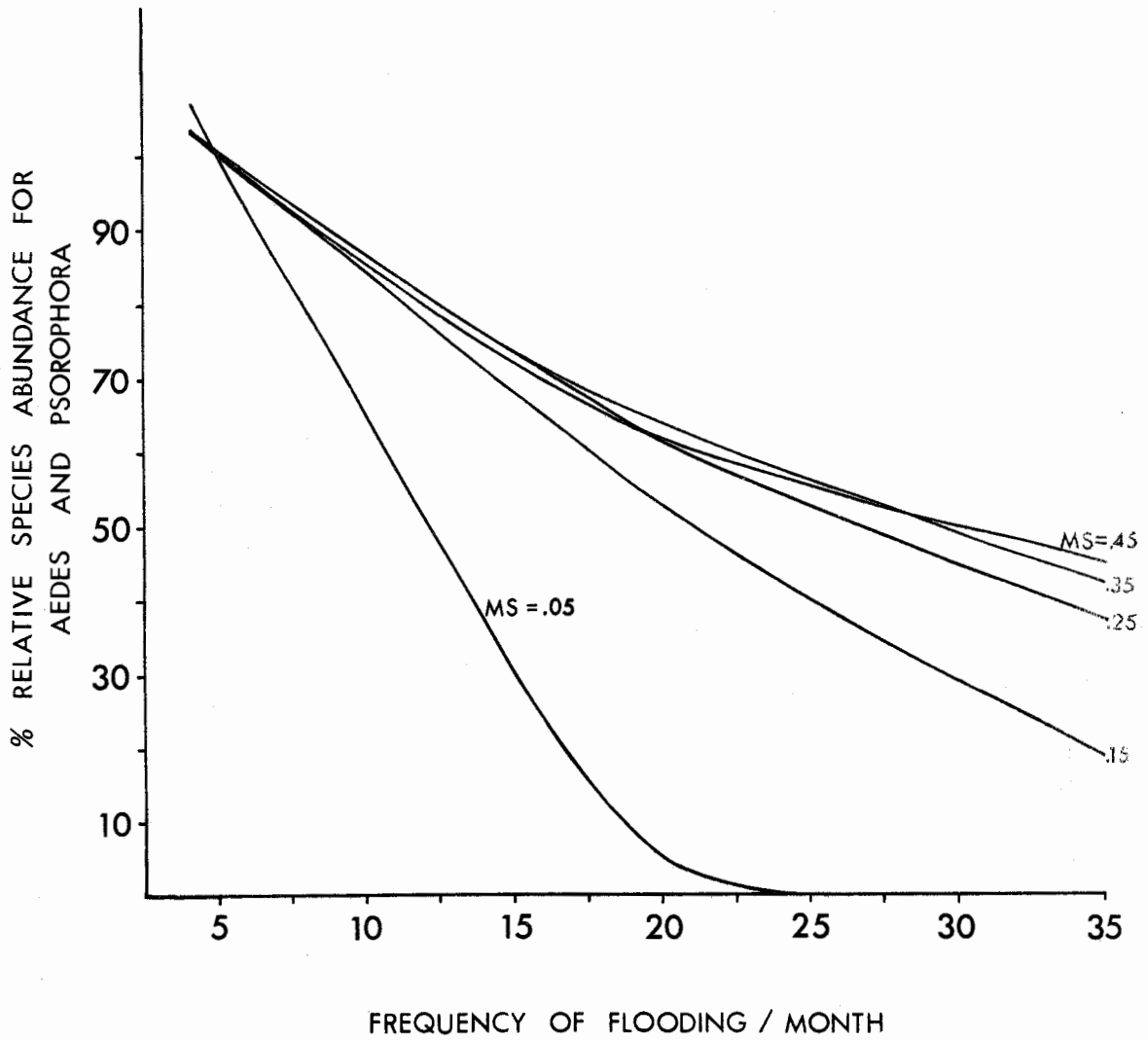



FIG. 38 RESPONSE TO FREQUENCY OF FLOODING AT 5 MEAN SLOPE VALUES ( DITCHED SITES )

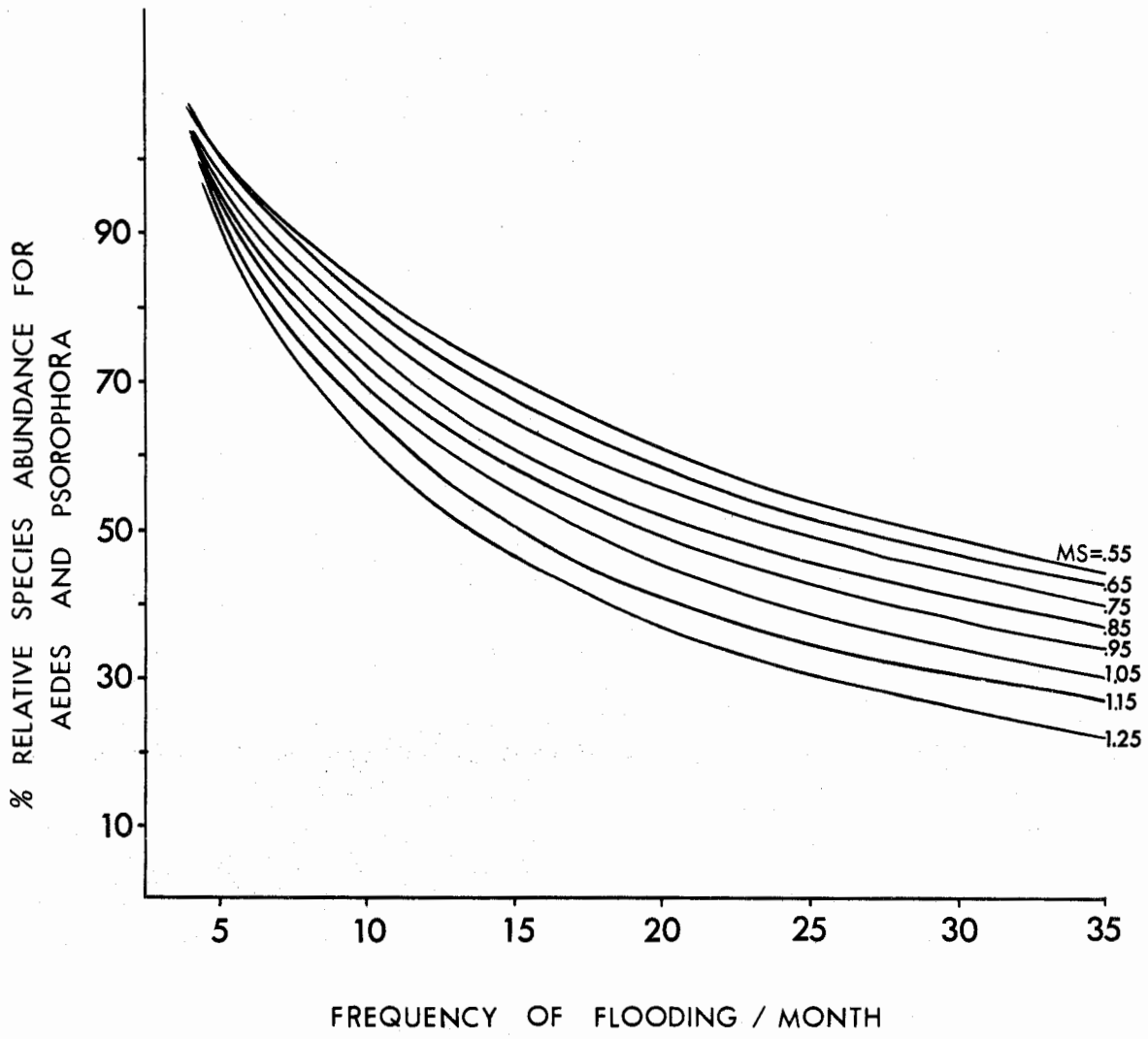



FIG. 39 RESPONSE TO FREQUENCY OF FLOODING AT 8 MEAN SLOPE VALUES ( DITCHED SITES )

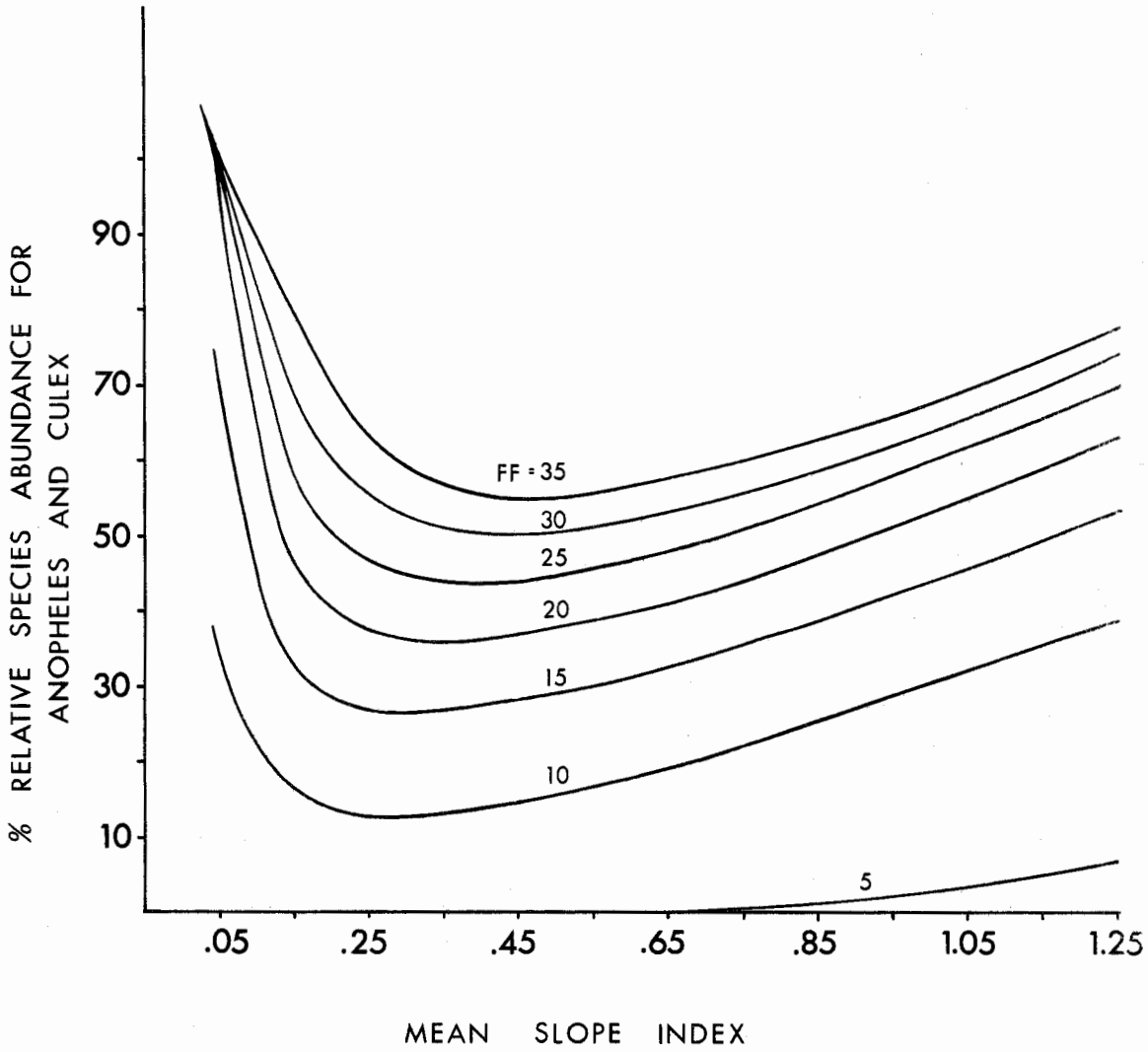



FIG. 40 **RESPONSE TO MEAN SLOPE AT 7 FREQUENCY OF FLOODING VALUES ( DITCHED SITES )**

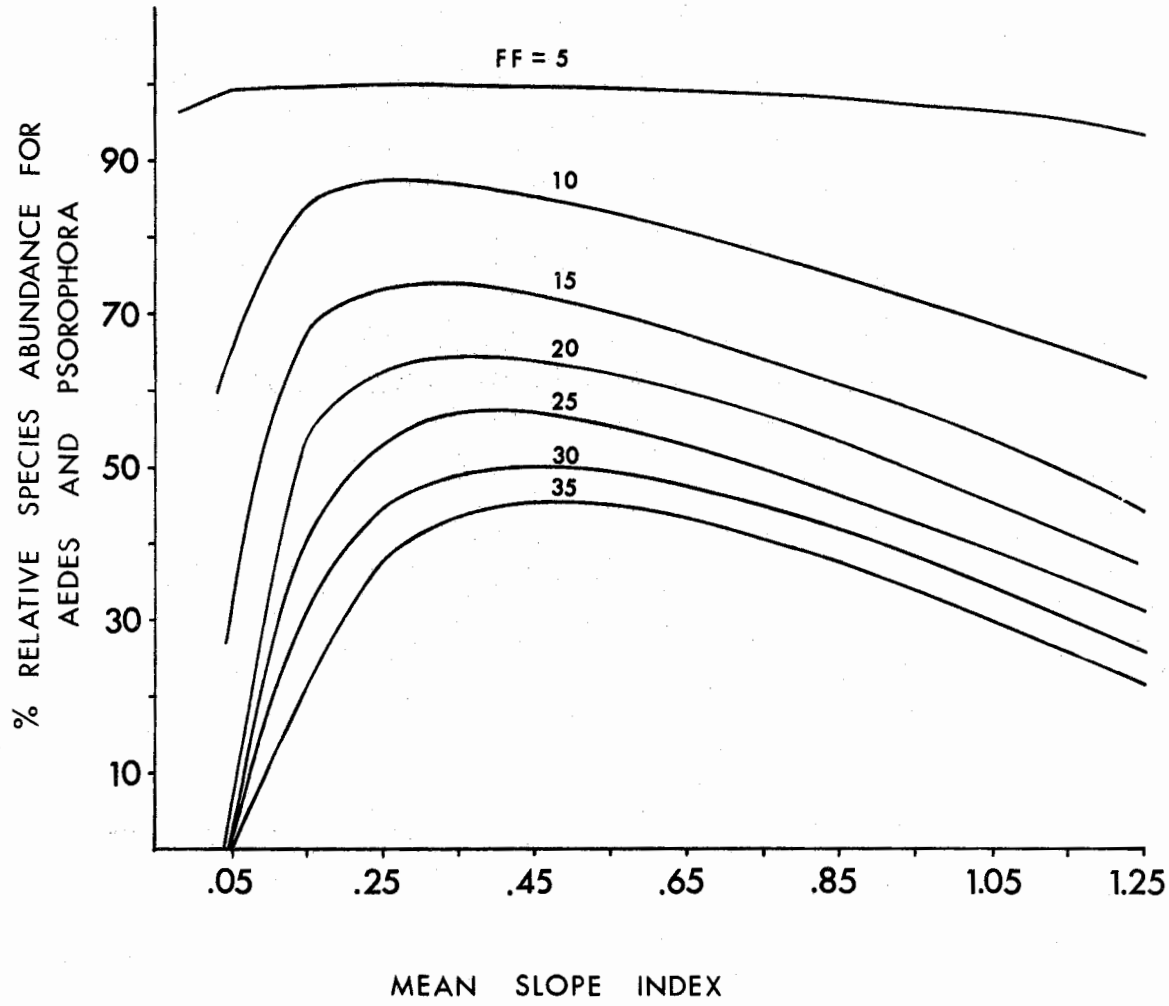



FIG. 41 RESPONSE TO MEAN SLOPE AT 7 FREQUENCY OF FLOODING VALUES ( DITCHED SITES )

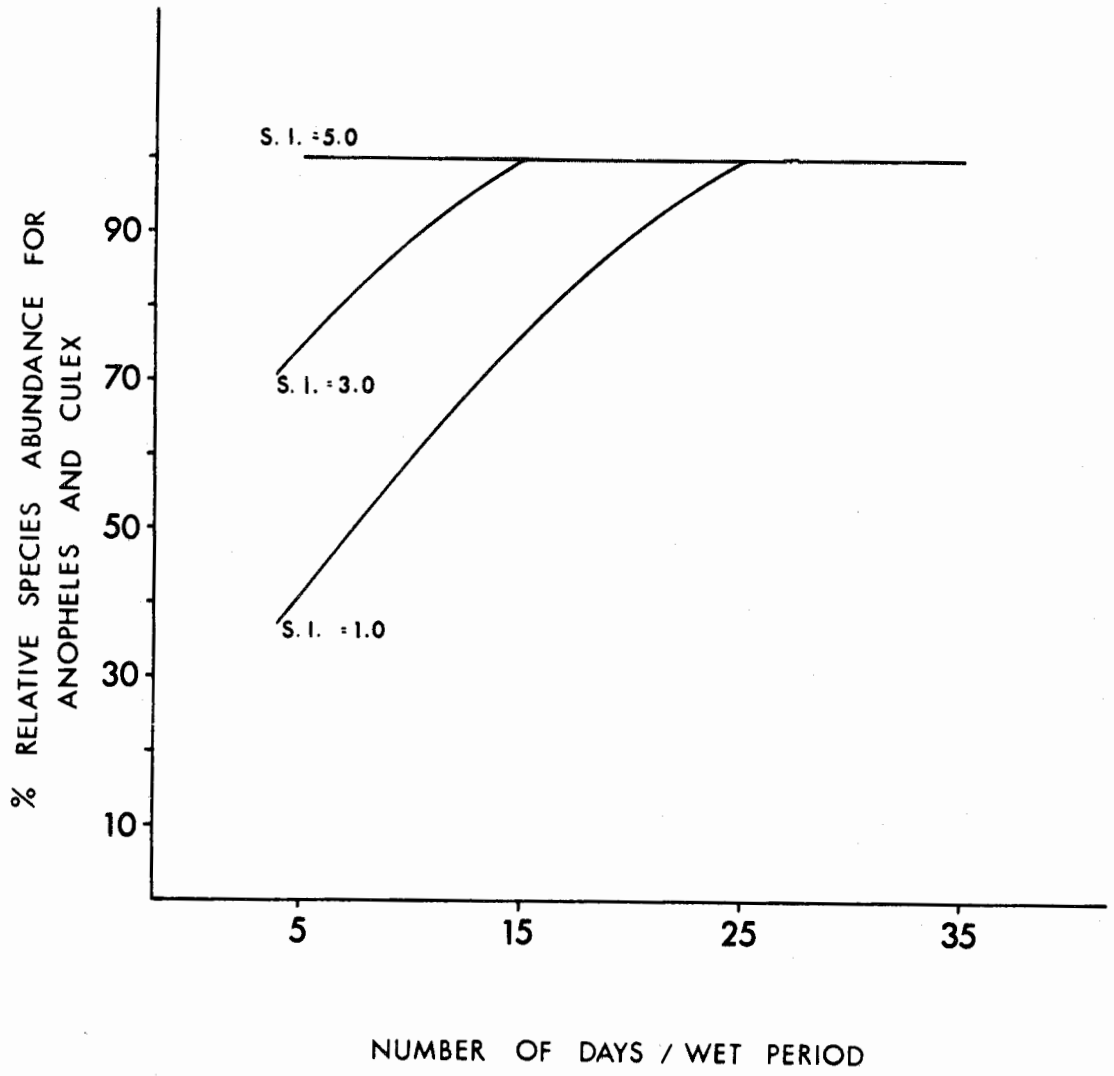



FIG. 42 RESPONSE TO NUMBER OF DAYS PER WET PERIOD AT A FREQUENCY OF STANDING WATER OF 70% AND AT 3 S. I. VALUES (UNDITCHED SITES)

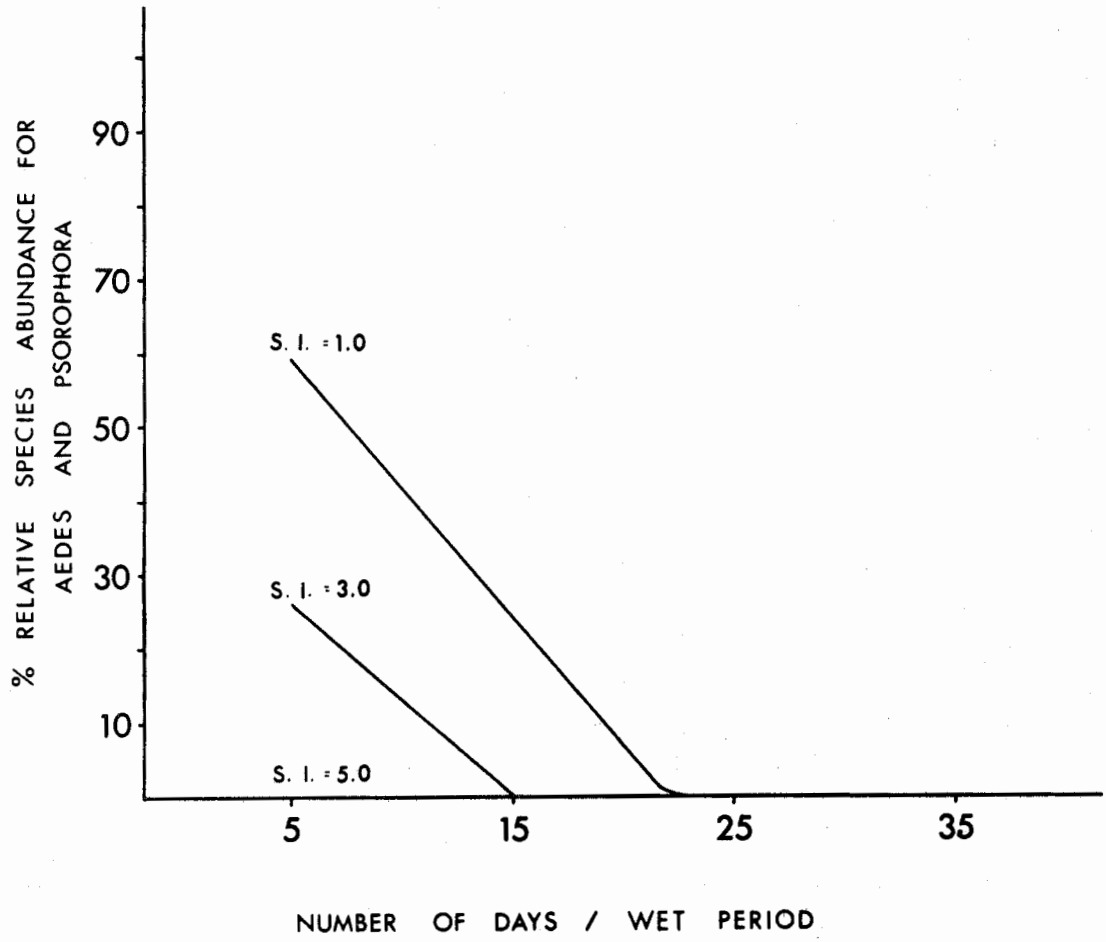



FIG.43 RESPONSE TO NUMBER OF DAYS PER WET PERIOD AT A FREQUENCY OF STANDING WATER OF 70% AND AT 3 S. I. VALUES ( UNDITCHED SITES )

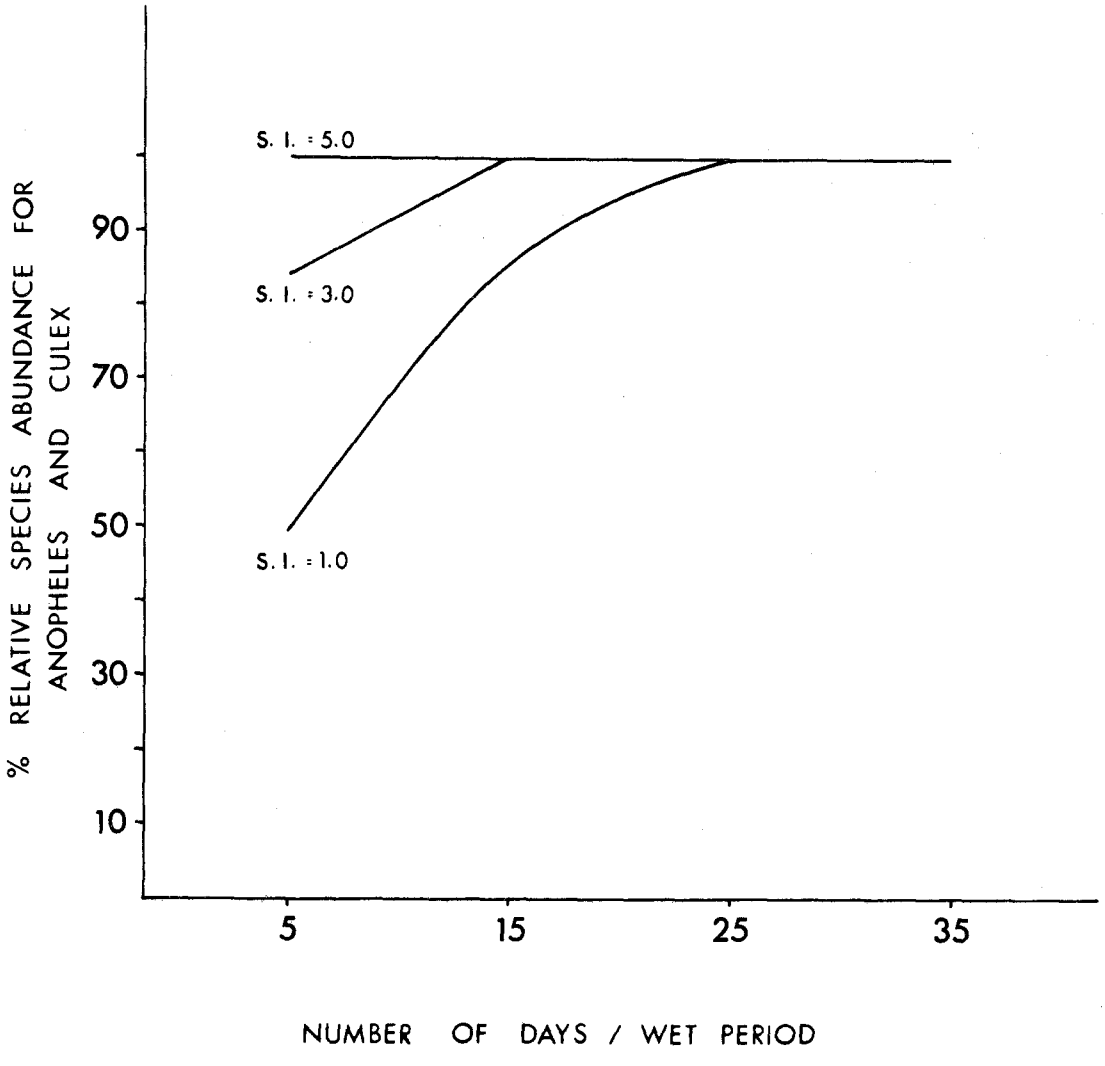



FIG. 44 RESPONSE TO NUMBER OF DAYS PER WET PERIOD AT A FREQUENCY OF STANDING WATER OF 90% AND AT 3 S.I. VALUES (UNDITCHED SITES)

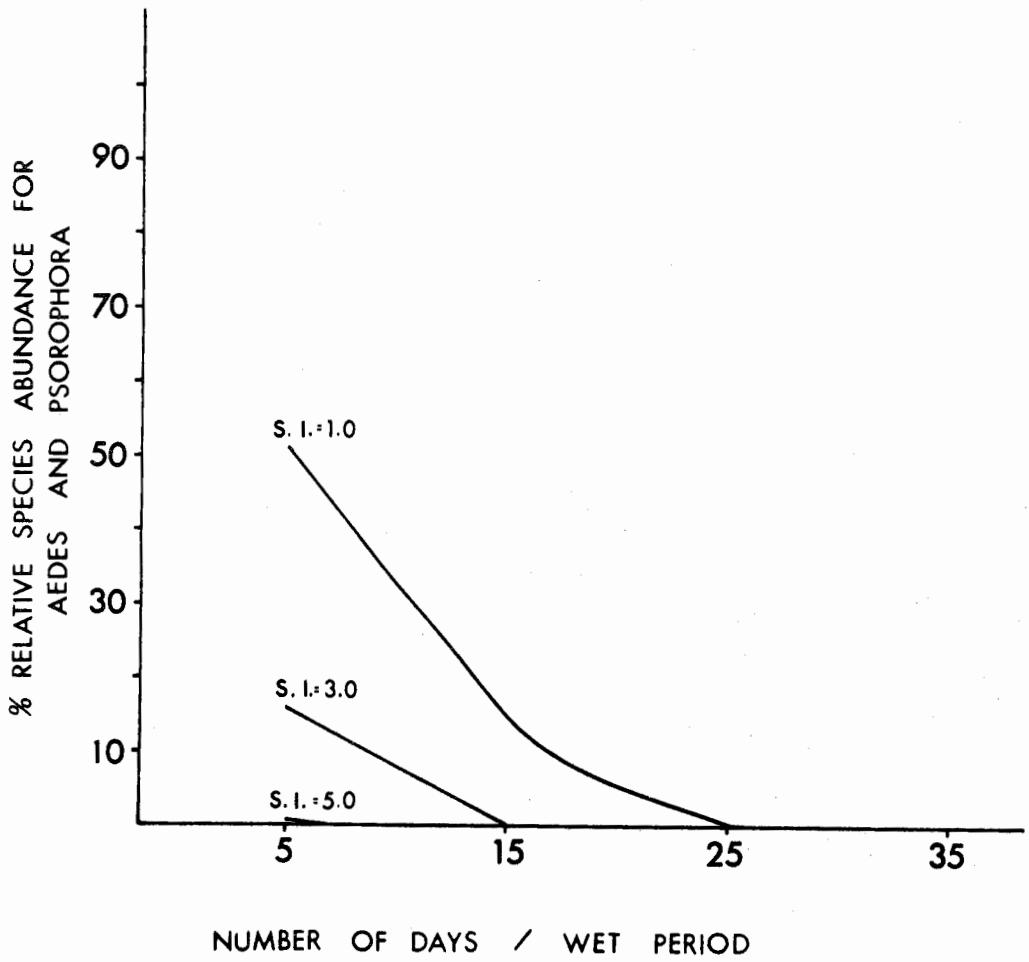



FIG.45 RESPONSE TO NUMBER OF DAYS PER WET PERIOD AT A FREQUENCY OF STANDING WATER OF 90% AND AT 3 S. I. VALUES ( UNDITCHED SITES )

Table 1. Data on Frequency, Duration, and Extent of Flooding for Study Areas.

| Study area | No. of sites | Frequency of flooding/month (at tide gauge) | | Frequency of flooding/month /site | | Frequency of standing water (in percentage) | | No. of wet intervals /site | | No. of days /wet interval | | No. of dry intervals /site | | No. of days /dry interval | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Range | Mean | Range | Mean | Range | Mean | Range | Mean | Range | Mean | Range | Mean | Range |
| North River | | | | | | | | | | | | | | | |
| unditched | 26 | 15 | 5-36 | 15.0 | 5-36 | 71.0 | 50-90 | 5.9 | 3-11 | 23.0 | 7.0-54.0 | 5.5 | 2-10 | 7.0 | 2.5-8.0 |
| ditched | 15 | 15 | 5-36 | 15.0 | 5-36 | 63.0 | 42-80 | 7.5 | 3-11 | 14.3 | 5.8-39.0 | 7.1 | 2-11 | 5.0 | 2.0-6.0 |
| Newport River | | | | | | | | | | | | | | | |
| unditched | 1 | 30 | 9-37 | 19.0 | 5-37 | 77.6 | - | 7.2 | - | 23.2 | 1.0-40.0 | 6.0 | - | 6.5 | 3.0-11.0 |
| ditched | 13 | 30 | 9-37 | 14.0 | 7-19 | 53.0 | 15-100 | 7.6 | 3-12 | 17.8 | 6.0-67.0 | 7.6 | 2-12 | 13.0 | 4.5-28.4 |
| Kings Point | | | | | | | | | | | | | | | |
| unditched | 21 | 24 | 11-43 | 20.8 | 1-27 | 80.0 | 14-100 | 4.4 | 1-11 | 88.4 | 3.0-240.0 | 3.7 | 0-11 | 8.4 | 0.0-32.3 |
| Davis | | | | | | | | | | | | | | | |
| ditched | 23 | 30 | 19-45 | 20.2 | 6-33 | 48.0 | 19-100 | 8.9 | 1-16 | 14.7 | 3.6-94.0 | 8.7 | 2-15 | 15.0 | 3.5-95.0 |
| Wards Creek | | | | | | | | | | | | | | | |
| unditched | 1 | 15 | 5-36 | 15.0 | 5-36 | 77.0 | - | 7.0 | - | 20.0 | 4.0-31.0 | 9.0 | - | 4.4 | 2.0-9.0 |

Table 2. Plant Cover Summary for Breeding Sites of Ditched and Unditched Sections of Study Areas (in percentage).

| Study area | No. of sites | *Juncus roemerianus* | *Distichlis spicata* | *Spartina patens* | *Spartina alterniflora* | *Baccharis halimifolia* | *Borrichia frutescens* | *Panicum virgatum* | *Cladium jamaicense* | *Salicornia virginica* | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| North River | | | | | | | | | | | |
| unditched | 26 | 43 | 25.0 | 0.9 | 3.4 | 0.0 | 2.2 | 1.5 | 0.0 | 0.0 | 24.0 |
| ditched | 15 | 32 | 52.4 | 2.3 | .3 | 24.0 | 1.0 | 9.6 | 0.0 | 0.0 | 0.4 |
| Newport River | | | | | | | | | | | |
| unditched | 1 | 0 | 25.0 | 25.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ditched | 13 | 21 | 40.0 | 6.0 | 27.0 | 5.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| Kings Point | | | | | | | | | | | |
| unditched | 21 | 49 | 16.4 | 26.0 | 0.0 | 0.95 | 0.8 | 0.0 | 2.1 | 4.7 | 0.0 |
| Davis | | | | | | | | | | | |
| ditched | 23 | 63 | 6.6 | 19.0 | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 | 9.3 |
| Wards Creek | | | | | | | | | | | |
| unditched | 1 | 15 | 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 |

Table 3. Abundance of *Aedes* - *Psorophora* and *Anopheles* - *Culex* in Ditched and Unditched Sections of Study Areas.

| Study area | No. of sites | Breeding index | | Specimens taken | | Specimens taken /site | | Percentage abundance | | Percentage potential survival | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Range | Total | % | Mean | Range | *Aedes* and *Psorophora* | *Anopheles* and *Culex* | *Aedes* and *Psorophora* | *Anopheles* and *Culex* |
| North River | | | | | | | | | | | |
| unditched | 26 | 2.3 | 2-79 | 2475 | 41.5 | 93 | 18-237 | 48 | 52 | 57 | 54 |
| ditched | 15 | 23.8 | .004-262.0 | 3420 | 58.5 | 228 | 8-1540 | 75 | 25 | 82 | 54 |
| Newport River | | | | | | | | | | | |
| unditched | 1 | 256.0 | 40-1600.0 | 141 | 19.0 | 141 | - | 30 | 70 | 96 | 86 |
| ditched | 13 | 3.2 | .006-200.0 | 709 | 81.0 | 54 | 1-355 | 38 | 62 | 86 | 79 |
| Kings Point | | | | | | | | | | | |
| unditched | 21 | 6.5 | 0.0-276.0 | 1525 | 60.0 | 76 | 1-380 | 35 | 65 | 95 | 91 |
| Davis | | | | | | | | | | | |
| ditched | 23 | 2.6 | .01-72.6 | 1011 | 40.0 | 43 | 5-198 | 53 | 47 | 86 | 73 |
| Wards Creek | | | | | | | | | | | |
| unditched | 1 | 300.0 | 0.0-4320.0 | 13,886 | - | 13,886 | - | 100 | 0 | 97 | - |

Table 4. Abundance of *Aedes* - *Psorophora* and *Anopheles* - *Culex* Species in Ditched and Unditched Sections of Study Areas (in percentage).

| Study area | No. of sites | *Aedes sollicitans* | *Aedes taeniorhynchus* | *Aedes atlanticus* | Other *Aedes* Spp. | *Psorophora confinnis* | Other *Psorophora* Spp. | *Anopheles atropos* | *Anopheles bradleyi* | *Anopheles* 2nd instar | Other *Anopheles* Spp. | *Culex salinarius* | *Culex territans* | Other *Culex* Spp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North River | | | | | | | | | | | | | | |
| unditched | 26 | 43.0 | 13.0 | 0.0 | 0.0 | 0.0 | 0.0 | 80.0 | 57.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ditched | 15 | 57.0 | 87.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20.0 | 43.0 | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 |
| Newport River | | | | | | | | | | | | | | |
| unditched | 1 | 12.0 | 10.0 | 0.0 | 40.0 | 0.0 | 0.0 | 56.0 | 22.0 | 20.0 | 0.0 | 28.0 | 0.0 | 0.0 |
| ditched | 13 | 88.0 | 90.0 | 0.0 | 60.0 | 100.0 | 0.0 | 44.0 | 78.0 | 80.0 | 0.0 | 72.0 | 100.0 | 100.0 |
| Kings Point | | | | | | | | | | | | | | |
| unditched | 21 | 75.0 | 63.0 | 2.0 | 20.0 | 0.0 | 1.0 | 55.0 | 77.0 | 67.0 | 0.0 | 100.0 | 0.0 | 0.0 |
| Davis | | | | | | | | | | | | | | |
| ditched | 23 | 25.0 | 37.0 | 98.0 | 80.0 | 100.0 | 99.0 | 45.0 | 23.0 | 33.0 | 0.0 | 0.0 | 0.0 | 100.0 |
| Wards Creek | | | | | | | | | | | | | | |
| unditched | 1 | 6.2 | 93.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 5. Abundance of *Aedes* - *Psorophora* and *Anopheles* - *Culex* Species in Sites of Ditched and Unditched Sections of Study Areas (in percentage).

| Study area | No. of sites | *Aedes sollicitans* | *Aedes taeniorhynchus* | *Aedes atlanticus* | Other *Aedes* Spp. | *Psorophora confinnis* | Other *Psorophora* Spp. | *Anopheles atropos* | *Anopheles bradleyi* | *Anopheles* 2nd instar | Other *Anopheles* Spp. | *Culex salinarius* | *Culex territans* | Other *Culex* Spp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North River | | | | | | | | | | | | | | |
| unditched | 26 | 20.0 | 5.0 | 0.0 | 0.0 | 0.0 | 0.0 | 24.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ditched | 15 | 34.0 | 17.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | 37.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 |
| Newport River | | | | | | | | | | | | | | |
| unditched | 1 | 22.0 | 0.1 | 0.0 | 8.0 | 0.0 | 0.0 | 21.0 | 19.0 | 29.0 | 0.0 | 1.0 | 0.0 | 0.0 |
| ditched | 13 | 35.0 | 1.0 | 0.0 | 2.0 | 0.0 | 0.0 | 5.0 | 40.0 | 10.4 | 0.0 | 1.4 | 5.0 | 0.0 |
| Kings Point | | | | | | | | | | | | | | |
| unditched | 21 | 12.0 | 1.0 | 0.9 | 1.5 | 0.0 | 0.2 | 12.0 | 30.0 | 42.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| Davis | | | | | | | | | | | | | | |
| ditched | 23 | 12.0 | 0.9 | 16.0 | 10.4 | 0.5 | 0.1 | 11.0 | 13.0 | 35.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Wards Creek | | | | | | | | | | | | | | |
| unditched | 1 | 6.2 | 93.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 6. Survival Summary for Species Breeding in Ditched and Unditched Sections of Study Areas (in percentage).

| Study area | No. of sites | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Other Aedes Spp. | Psorophora confinnis | Other Psorophora Spp. | Anopheles atropos | Anopheles bradleyi | Anopheles 2nd instar | Other Anopheles Spp. | Culex salinarius | Culex territans | Other Culex Spp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North River | | | | | | | | | | | | | | |
| unditched | 26 | 73 | 78 | - | 0 | 0 | 0 | 52 | 57 | 0 | 0 | 0 | 0 | 0 |
| ditched | 15 | 49 | 81 | - | 0 | 0 | 0 | 45 | 56 | 0 | 0 | 51 | 0 | 0 |
| Newport River | | | | | | | | | | | | | | |
| unditched | 1 | 94 | 100 | - | 83 | 100 | 0 | 65 | 82 | 100 | 0 | 0 | 0 | 0 |
| ditched | 13 | 80 | 68 | - | 46 | 100 | 0 | 86 | 86 | 90 | 0 | 0 | 50 | 0 |
| Kings Point | | | | | | | | | | | | | | |
| unditched | 21 | 92 | 100 | 100 | 100 | 0 | 100 | 95 | 87 | 77 | 0 | 0 | 50 | 0 |
| Davis | | | | | | | | | | | | | | |
| ditched | 23 | 83 | 88 | 84 | 83 | 100 | 0 | 87 | 70 | 56 | 0 | 0 | 100 | 100 |
| Wards Creek | | | | | | | | | | | | | | |
| unditched | 1 | 90 | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 7

GROUND WATER LEVELS

North River

Aug. 2-17, 1971

| | | Ditched Area | | | | | Control Area | | | | | Tide level | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ←Hole nearest ditch→ | | | | | Hole nearest ditch | | | | Inner-Most hole | | | |
| Date | | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | In tenths of feet (0 = marsh level) | | |
| Aug | 2 | 14 | 6 | 6 | 7 | 15 | 10 | 7 | 4 | 3.5 | 3 | -.2 | -.3 | |
| | 3 | 15 | 7 | 6 | 8 | 17 | 10.5 | 7 | 4 | 6 | 5 | -.85 | -.15 | |
| | 4 | 14 | 9 | 7 | 10 | 16 | 10 | 8 | 5 | 5 | 5 | -.85 | -.15 | |
| | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | -.85 | +.1 | |
| | 6 | 3 | 0 | 0 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | -.25 | +.4 | flood period |
| | 7 | 3 | 0 | 0 | 0 | 8 | 0.5 | 0 | 0 | 0 | 0 | -.1 | +.2 | |
| | 8 | 4 | 0 | 0 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | -.2 | +.1 | 12 hrs. total |
| | 9 | 6 | 1 | 0 | 0.5 | 11 | 6.5 | 6.5 | 1.5 | 0 | 0 | -.1 | -.1 | |
| | 10 | 9 | 3 | 1 | 3 | 13 | 7.5 | 3 | 0 | 0 | 0 | -.1 | -.1 | |
| | 11 | 10 | 5 | 3 | 5 | 13 | 7 | 4.5 | 1.5 | 1.5 | 0 | -.35 | -.2 | |
| | 12 | 10 | 5 | 3 | 5 | 14 | 8.5 | 4.5 | 2 | 2 | 0 | -.5 | -.2 | |
| | 13 | 10 | 5 | 4 | 5 | 13 | 8.5 | 5 | 2 | 1.5 | 0 | -.3 | +.1 | |
| | 14 | 6 | 4 | 3 | 5 | 12 | 6 | 1.5 | 0 | 0 | 0 | 0 | +.4 | |
| | 15 | 1 | 0 | 0 | 0 | 6 | 6 | 0.5 | 0 | 0 | 0 | -.15 | +.4 | flood period |
| | 16 | 1 | 0 | 0 | 0 | 6 | 5 | 0 | 0 | 0 | 0 | -.35 | +.1 | |
| | 17 | 0.5 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | -.5 | +.2 | (13 hrs. total) |

Table 8

GROUND WATER LEVELS

Davis

Aug. 2-31, 1972

| Date | Ditched Area: Hole nearest ditch 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Inner-most hole: Hole nearest ditch 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Tide level* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug 2 | 14 | 9.5 | 7 | 5.5 | 3 | 3 | 3 | 7.5 | 7 | 5 | 4 | 3 | 2 | 2 | 2.5 | 3 | 7 | -.45 | 0 |
| 4 | 8 | 6.5 | 2 | 0 | 0 | 0 | 0 | 4.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -.15 | +.4 |
| 6 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +.45 | +.6 |
| 7 | 5 | 1.5 | 0 | 0 | 0 | 0 | 0 | 4 | 3.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | +.1 | +.1 |
| 9 | 11 | 8 | 5 | 2 | 2 | 2.5 | 3 | 6.5 | 6 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.5 | 1.5 | 5 | -.4 | -.3 |
| 11 | 7 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +.3 | +.35 |
| 13 | 7 | 6 | 4 | 1 | 2 | 2 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +.08 | +.1 |
| 14 | 13.5 | 11 | 7.5 | 5 | 3 | 3 | 3 | 6.5 | 6 | 3 | 2.5 | 2 | 2 | 1.5 | 3 | 2 | 6 | 0 | +.1 |
| 16 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -.1 | +.55 |
| 18 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +.3 |
| 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +.6 |
| 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +.4 | +.7 |
| 23 | 7 | 4 | 2.5 | 0 | 0 | 0 | 0 | 5 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | +.1 | +.2 |
| 25 | 6 | 9 | 6 | 1 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | +.2 | +.15 |
| 27 | 6 | 8 | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +.1 | +.3 |
| 29 | 11 | 7 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | +.4 |
| 31 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | +.45 | +.85 |

*In tenths of feet (0 = Marsh level)

Table 9

GROUND WATER LEVELS

Newport River

Aug. 1-15, 1972

| Date | Ditched Area: Hole nearest ditch 1 | 2 | 3 | 4 | 5 | Control Area: Hole nearest ditch 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Inner-most hole | Tide level* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aug 1 | 4 | 4 | 3.5 | 3.5 | 7 | 5 | 9 | 8 | 7 | 6 | 6 | 3 | 3 | 0 | 0 | -.2 | -.4 | |
| 3 | 0 | 5 | 5 | 4 | 0 | 0 | 13 | 12 | 11 | 10 | 9 | 7.5 | 6 | 3 | 33 | 0 | +.7 | |
| 5 | 0 | 0 | 0 | 0 | 2 | 1.5 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - ** | |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 00 | +.7 | +.85 | |
| 8 | 2 | 0 | 0 | 0 | 5 | 2 | 2 | 0 | 0.5 | 0.5 | 0 | 0 | 0 | 0 | 00 | +.35 | - | |
| 10 | 4.8 | 3.6 | 3.6 | 3.6 | 7.2 | 4 | 5 | 4 | 3 | 3 | 2 | 0 | 2 | 0 | 00 | +.4 | - | |
| 12 | 4 | 4 | 4 | 4 | 6 | 3 | 7 | 6 | 5 | 5.5 | 5 | 4 | 3.5 | 0 | 11 | +.2 | -.05 | |
| 14 | 4 | 4 | 4 | 3 | 5 | 3 | 7 | 6 | 5 | 5 | 4 | 3 | 3 | 0 | 0 | | | |
| 15 | 4 | 3 | 3 | 3 | 2 | 2 | 6 | 6 | 4 | 4 | 3 | 2 | 2 | 0 | 00 | | | |

*In tenths of feet (0 = Marsh level)
**No data available

Table 10. Significant Parameters for Unditched Sites and Results of Statistical Analysis.

| Parameter | | Degrees of freedom | Regression coefficient | F-Test |
|---|---|---|---|---|
| FOSWI | (1/frequency of standing water) | 1 | 30.43958 | 20.07329** |
| NWET | (Number of days/wet period) | 1 | - 0.03892 | 5.58918* |
| S.I. | (Suitability Index, frequency of flooding x 1/mean slope) | 1 | - 0.23687 | 24.28418*** |
| S.I.2 | $(S.I.)^2$ | 1 | 0.01253 | 18.46232** |
| ERROR | | 33 | | |

Multiple correlation coefficient ($R^2$) = 0.69267512***

***P > 0.0001

**P > 0.01

*P > 0.05

Table 11. Significant Parameters for Ditched Sites and Results of Statistical Analysis.

| Parameter | | Degrees of freedom | Regression coefficient | F-Test |
|---|---|---|---|---|
| MS | (Mean slope) | 1 | -0.00494471 | 3.66171° |
| FF1 | (1/frequency of flooding) | 1 | 5.20616128 | 15.97301** |
| S.I. | (Suitability Index, frequency of flooding x 1/mean slope | 1 | -0.33915241 | 21.16088** |
| S.I.2 | $(S.I.)^2$ | 1 | 0.02399442 | 15.79464** |
| ERROR | | 31 | | |

Multiple correlation coefficient ($R^2$) = 0.72889868***

***P > 0.0001

**P > 0.01

*P > 0.05

o > 0.10

# APPENDIX

Table 1. Data on Physical Characteristics, Frequency, Duration and Extent of Flooding of Wards Creek and North River Study Sites, 1971.

| | Site number | Depth of water (in inches) | Surface area (sq.ft.) | Mean slope index | Frequency of flood. /month | Frequency of standing water (%) | Number of wet periods | Mean No. of days/ wet period | Number of dry periods | Mean No. of days/ dry period | Distance from nearest ditch (in feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Wards Creek Study area** | 1 | 10.0 | 600 | 41.0 | 15 | 77 | 7 | 20.0 | 10.0 | 4.0 | 83.0 |
| **North River Study area** | 2 | 7.0 | 20 | 40.0 | 15 | 70 | 6 | 18.6 | 5.0 | 3.0 | 20.0 |
| | 3 | 4.5 | 50 | 15.0 | 15 | 80 | 3 | 39.0 | 2.0 | 7.0 | 55.0 |
| | 4 | 2.0 | 90 | 1.0 | 15 | 70 | 6 | 17.0 | 6.0 | 4.5 | 51.0 |
| | 5 | 2.0 | 300 | 6.0 | 15 | 57 | 8 | 11.0 | 10.0 | 4.1 | 67.0 |
| | 6 | 1.5 | 150 | 5.0 | 15 | 46 | 10 | 6.9 | 10.0 | 5.2 | 21.0 |
| | 7 | 2.5 | 150 | 4.0 | 15 | 67 | 8 | 12.6 | 8.0 | 4.0 | 63.0 |
| | 8 | 3.0 | 150 | 5.0 | 15 | 66 | 10 | 10.0 | 8.0 | 5.0 | 55.4 |
| | 9 | 1.5 | 150 | 2.5 | 15 | 42 | 11 | 5.8 | 11.0 | 4.5 | 71.4 |
| | 10 | 1.8 | 10 | 6.0 | 15 | 43 | 9 | 7.0 | 9.0 | 5.7 | 51.0 |
| | 11 | 2.0 | 50 | 3.0 | 15 | 76 | 5 | 23.0 | 4.0 | 5.0 | 51.0 |
| | 12 | 1.7 | 150 | 3.0 | 15 | 45 | 9 | 7.5 | 9.0 | 5.5 | 23.1 |
| | 13 | 2.8 | 500 | 4.0 | 15 | 63 | 9 | 10.5 | 8.0 | 4.5 | 48.5 |
| | 14 | 7.0 | 1500 | 11.0 | 15 | 73 | 6 | 8.0 | 5.0 | 6.0 | 30.0 |
| | 15 | 5.0 | 250 | 8.0 | 15 | 76 | 6 | 19.0 | 7.0 | 6.0 | 106.0 |
| | 16 | 4.1 | 150 | 7.0 | 15 | 65 | 8 | 12.0 | 8.0 | 7.0 | 74.0 |
| | 17 | 5.0 | 120 | 8.0 | 15 | 75 | 7 | 16.0 | 5.0 | 4.0 | 137.0 |
| | 18 | 4.1 | 50 | 6.0 | 15 | 70 | 8 | 12.8 | 7.0 | 6.0 | 236.0 |
| | 19 | 3.0 | 25 | 5.0 | 15 | 50 | 6 | 13.8 | 5.0 | 5.0 | 298.0 |
| | 20 | 3.0 | 50 | 10.0 | 15 | 50 | 11 | 7.0 | 10.0 | 7 6 | 254.0 |
| | 21 | 4.0 | 500 | 7.0 | 15 | 63 | 9 | 9.2 | 9.0 | 6.8 | 238.0 |
| | 22 | 3.0 | 330 | 10.0 | 15 | 75 | 7 | 16.0 | 6.0 | 7.0 | 272.0 |
| | 23 | 3.7 | 150 | 7.0 | 15 | 80 | 7 | 17.0 | 6.0 | 6.0 | 210.0 |
| | 24 | 4.0 | 460 | 7.0 | 15 | 70 | 7 | 15.0 | 6.0 | 6.0 | 108.0 |
| | 25 | 2.9 | 150 | 1.0 | 15 | 70 | 5 | 25.0 | 3.0 | 6.0 | 135.0 |
| | 26 | 2.9 | 40 | 2.0 | 15 | 90 | 4 | 34.0 | 2.0 | 2.5 | 315.0 |
| | 27 | 2.4 | 230 | 4.0 | 15 | 90 | 3 | 53.0 | 4.0 | 6.0 | 288.0 |

Table 1. (Continued)

| | Site number | Depth of water (in inches) | Surface area (sq.ft.) | Mean slope index | Frequency of flood. /month | Frequency of standing water (%) | Number of wet periods | Mean No. of days/ wet period | Number of dry periods | Mean No. of days/ dry period | Distance from nearest ditch (in feet) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| North River | 28 | 3.2 | 300 | 5.0 | 15 | 90 | 4 | 34.0 | 4.5 | 8.0 | 185.0 |
| Study area | 29 | 2.2 | 100 | 4.0 | 15 | 70 | 5 | 20.0 | 5.0 | 8.0 | 264.0 |
| | 30 | 1.5 | 150 | 2.0 | 15 | 60 | 5 | 18.0 | 4.0 | 5.0 | 350.0 |
| (Cont.) | 31 | 1.7 | 150 | 1.0 | 15 | 68 | 6 | 17.0 | 6.0 | 6.0 | 146.0 |
| | 32 | 2.6 | 150 | 4.0 | 15 | 72 | 5 | 21.0 | 5.0 | 5.0 | 247.0 |
| | 33 | 2.5 | 150 | 4.0 | 15 | 90 | 3 | 54.0 | 2.0 | 3.0 | 323.0 |
| | 34 | 3.5 | 150 | 6.0 | 15 | 88 | 3 | 53.0 | 2.0 | 3.0 | 256.0 |
| | 35 | 3.4 | 200 | 6.0 | 15 | 81 | 5 | 24.0 | 4.0 | 7.0 | 166.0 |
| | 36 | 3.0 | 100 | 5.0 | 15 | 64 | 5 | 23.0 | 5.0 | 7.0 | 136.0 |
| | 37 | 2.8 | 150 | 5.0 | 15 | 63 | 5 | 18.0 | 4.0 | 7.0 | 136.0 |
| | 38 | 2.8 | 150 | 5.0 | 15 | 67 | 5 | 24.0 | 4.0 | 6.0 | 339.0 |
| | 39 | 2.3 | 150 | 7.0 | 15 | 80 | 6 | 20.0 | 6.0 | 6.0 | 376.0 |
| | 40 | 2.3 | 100 | 4.0 | 15 | 66 | 8 | 12.5 | 7.0 | 6.0 | 319.0 |
| | 41 | 1.5 | 100 | 5.0 | 15 | 51 | 8 | 9.6 | 7.0 | 8.0 | 311.0 |
| | 42 | 2.4 | 100 | 4.0 | 15 | 68 | 8 | 12.0 | 8.0 | 6.0 | 242.0 |

Table 2. Data on the Physical Characteristics, Frequency, Duration and Extent of Flooding at Davis Study Sites, 1972.

| Site No. | Depth of water (in inches) | Surface area (sq.ft.) | Mean slope index | Frequency of flood. /month | Frequency of standing water (%) | Number of wet periods | Mean number of days/wet period | Number of dry periods | Mean number of days/ dry period | Distance from nearest ditch (in feet) |
|---|---|---|---|---|---|---|---|---|---|---|
| A* | 12.0 | 2300 | 8.00 | 0.00 | 100 | 1 | 240.0 | 0 | 0.0 | 0.0 |
| B* | 10.0 | 5000 | 5.00 | 0.00 | 100 | 1 | 240.0 | 0 | 0.0 | 0.0 |
| C* | 8.0 | 100 | 13.00 | 0.00 | 30 | 6 | 10.5 | 6 | 21.0 | 0.0 |
| 1 | 5.0 | 150 | 35.00 | 5.00 | 24 | 7 | 7.0 | 8 | 16.0 | 264.0 |
| 2 | 3.0 | 10 | 8.00 | 6.50 | 19 | 11 | 3.6 | 11 | 13.0 | 312.0 |
| 3 | 5.0 | 100 | 71.00 | 6.00 | 30 | 8 | 8.0 | 8 | 16.0 | 115.0 |
| 4 | 1.0 | 400 | 0.71 | 3.00 | 9 | 5 | 4.0 | 5 | 33.0 | 23.0 |
| 5 | 3.0 | 100 | 5.00 | 13.50 | 40 | 16 | 6.0 | 5 | 5.5 | 126.0 |
| 6 | 3.0 | 100 | 5.00 | 12.00 | 42 | 13 | 7.6 | 12 | 9.7 | 172.0 |
| 7 | 6.5 | 100 | 5.00 | 13.50 | 45 | 12 | 8.0 | 11 | 9.5 | 138.0 |
| 8 | 5.0 | 200 | 6.60 | 10.00 | 42 | 10 | 9.2 | 9 | 12.0 | 115.0 |
| 9 | 4.0 | 100 | 6.60 | 8.00 | 38 | 11 | 7.3 | 10 | 12.7 | 126.0 |
| 10 | 12.0 | 200 | 20.00 | 33.00 | 81 | 9 | 19.0 | 7 | 3.5 | 50.0 |
| 11 | 12.0 | 200 | 60.00 | 33.00 | 89 | 8 | 23.0 | 6 | 5.0 | 85.0 |
| 12 | 11.0 | 150 | 14.00 | 31.00 | 62 | 7 | 19.0 | 6 | 12.0 | 140.0 |
| 13 | 5.0 | 400 | 10.00 | 15.00 | 39 | 12 | 7.0 | 9 | 14.0 | 92.0 |
| 14 | 5.0 | 150 | 41.00 | 23.00 | 54 | 16 | 7.7 | 15 | 5.4 | 87.4 |
| 15 | 5.0 | 200 | 11.00 | 33.00 | 72 | 12 | 12.6 | 10 | 5.7 | 92.0 |
| 16 | 12.0 | 60 | 40.00 | 33.00 | 90 | 2 | 94.0 | 1 | 9.0 | 80.0 |
| 17 | 4.0 | 200 | 5.00 | 33.00 | 60 | 11 | 11.6 | 11 | 8.0 | 100.0 |
| 18 | 4.0 | 200 | 3.00 | 33.00 | 60 | 12 | 10.4 | 11 | 8.0 | 95.0 |
| 19 | 3.0 | 150 | 10.00 | 6.00 | 22 | 8 | 6.0 | 9 | 8.0 | 90.0 |
| 20 | 6.0 | 50 | 24.00 | 6.00 | 32 | 8 | 8.5 | 8 | 17.6 | 90.0 |
| 21 | 5.0 | 400 | 3.00 | 33.00 | 51 | 13 | 8.3 | 12 | 7.6 | 70.0 |
| 22 | 0.5 | 4000 | 3.00 | 0.12 | 3 | 1 | 7.0 | 2 | 95.0 | 100.0 |
| 23 | 10.0 | 150 | 100.00 | 33.00 | 81 | 6 | 28.5 | 5 | 5.6 | 50.0 |

*Unditched sites

Table 3. Data on the Physical Characteristics, Frequency, Duration and Extent of Flooding at Kings Point Study Sites, 1972.

| Site No. | Depth of water (in inches) | Surface area (sq.ft.) | Mean slope index | Frequency of flood. /month | Frequency of standing water (%) | Number of wet periods | Mean number of days/wet period | Number of dry periods | Mean number of days/ dry period | Distance from nearest ditch (in feet) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.0 | 50 | 83.00 | 17.6 | 75 | 6 | 26.0 | 5 | 10.0 | 2038 |
| 2 | 5.0 | 2500 | 5.00 | 22.00 | 70 | 7 | 21.0 | 6 | 11.0 | 1739 |
| 3 | 7.0 | 100 | 10.00 | 27.00 | 93 | 2 | 99.0 | 1 | 13.0 | 1509 |
| 4 | 6.0 | 400 | 5.00 | 19.60 | 77 | 7 | 23.0 | 6 | 7.0 | 1199 |
| 5 | 7.0 | 50 | 20.00 | 22.00 | 82 | 6 | 29.0 | 5 | 7.0 | 1174 |
| 6 | 7.0 | 200 | 10.00 | 23.20 | 100 | 1 | 240.0 | 0 | 0.0 | 899 |
| 7 | 9.0 | 25 | 10.00 | 27.00 | 100 | 1 | 240.0 | 0 | 0.0 | 775 |
| 8 | 8.0 | 100 | 13.00 | 27.00 | 100 | 1 | 240.0 | 0 | 0.0 | 667 |
| 9 | 10.5 | 150 | 17.00 | 27.00 | 100 | 1 | 240.0 | 0 | 0.0 | 368 |
| 10 | 3.0 | 200 | 5.00 | 27.00 | 98 | 3 | 68.0 | 2 | 2.0 | 92 |
| 11 | 5.0 | 150 | 8.00 | 15.20 | 63 | 5 | 26.4 | 5 | 15.0 | 1311 |
| 12 | 3.0 | 400 | 5.00 | 17.60 | 53 | 10 | 11.2 | 9 | 10.0 | 1168 |
| 13 | 4.0 | 150 | 5.00 | 17.60 | 38 | 11 | 7.3 | 11 | 12.1 | 802 |
| 14 | 7.0 | 50 | 15.00 | 23.20 | 95 | 3 | 66.3 | 2 | 8.5 | 644 |
| 15 | 6.0 | 1500 | 10.00 | 23.20 | 98 | 2 | 103.0 | 1 | 11.0 | 575 |
| 16 | 8.0 | 50 | 20.00 | 27.00 | 100 | 1 | 240.0 | 0 | 0.0 | 430 |
| 17 | 6.0 | 100 | 10.00 | 19.60 | 99 | 2 | 104.0 | 1 | 10.0 | 350 |
| 18 | 6.0 | 150 | 10.00 | 19.60 | 73 | 7 | 22.0 | 6 | 8.0 | 240 |
| 19 | 4.0 | 5 | 23.00 | 1.00 | 14 | 6 | 5.0 | 6 | 32.3 | 161 |
| 20 | 7.0 | 1500 | 15.00 | 12.20 | 67 | 8 | 18.0 | 7 | 9.6 | 46 |
| 21 | 6.5 | 100 | 54.00 | 13.60 | 76 | 6 | 27.0 | 5 | 8.0 | 2337 |

Table 4. Data on Physical Characteristics, Frequency, Duration and Extent of Flooding at Newport River Study Sites, 1972.

| Site No. | Depth of water (in inches) | Surface area (sq.ft.) | Mean slope index | Frequency of flood. /month | Frequency of standing water (%) | Number of wet periods | Mean number of days/wet periods | Number of dry periods | Mean number of days/ dry periods | Distance from nearest ditch (in feet) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | 400 | 4 | 19 | 78.0 | 5 | 35.0 | 5 | 10.0 | 46.0 |
| 2 | 4 | 400 | 2 | 11 | 37.0 | 8 | 9.6 | 8 | 15.0 | 48.6 |
| 3 | 8 | 400 | 8 | 19 | 95.0 | 3 | 67.0 | 2 | 4.5 | 64.4 |
| 4 | 3 | 400 | 3 | 19 | 65.0 | 11 | 8.4 | 11 | 9.5 | 69.0 |
| 5 | 3 | 200 | 5 | 7 | 27.0 | 9 | 6.2 | 8 | 28.4 | 43.7 |
| 6 | 2 | 200 | 3 | 7 | 15.0 | 5 | 6.0 | 9 | 20.0 | 48.0 |
| 7 | 3 | 500 | 2 | 7 | 26.0 | 8 | 6.8 | 8 | 19.0 | 12.0 |
| 8 | 8 | 100 | 50 | 11 | 61.0 | 12 | 11.0 | 12 | 7.0 | 58.0 |
| 9 | 3 | 200 | 5 | 11 | 44.0 | 8 | 11.0 | 8 | 15.0 | 55.0 |
| 10* | 6 | 40000 | 3 | 19 | 77.6 | 7 | 23.2 | 6 | 6.5 | 200.0 |
| 11 | 5 | 150 | 8 | 7 | 48.0 | 8 | 12.5 | 7 | 12.3 | 15.0 |
| 12 | 4 | 400 | 3 | 19 | 54.0 | 10 | 11.3 | 10 | 6.8 | 41.4 |
| 13 | 4 | 400 | 2 | 19 | 56.0 | 7 | 17.0 | 6 | 9.0 | 66.7 |
| 14 | 3 | 200 | 5 | 19 | 57.0 | 4 | 30.0 | 3 | 12.0 | 45.0 |

*Unditched site

Table 5. Plant Cover Summary for Ward's Creek and North River Study Sites, 1971 (in percentage).

| | Site number | Juncus roemerianus | Distichlis spicata | Spartina patens | Spartina alterniflora | Baccharis halimifolia | Borrichia frutescens | Panicum virgatum | Cladium jamaicense | Salicornia virginica | Scirpus robustus | Iva cilata | Pinus taeda | Myrica cerifera |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ward's Creek Study area | 1 | 15 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| North River Study area | 2 | 0 | 30 | 25 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 15 | 0 | 10 |
| | 3 | 0 | 65 | 10 | 0 | 5 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 4 | 0 | 0 | 45 | 0 | 0 | 0 | 50 | 0 | 5 | 0 | 0 | 0 | 0 |
| | 5 | 45 | 50 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 6 | 2 | 60 | 2 | 0 | 1 | 0 | 20 | 0 | 0 | 0 | 15 | 0 | 0 |
| | 7 | 40 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8 | 100 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9 | 60 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 10 | 15 | 30 | 0 | 0 | 20 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 11 | 40 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 12 | 20 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 13 | 40 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 14 | 10 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 15 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 17 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 18 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 20 | 60 | 0 | 30 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 21 | 40 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 22 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 23 | 80 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 24 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 25 | 0 | 70 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 26 | 10 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 27 | 90 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 28 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 5. (Continued)

| | Site No. | Juncus roemerianus | Distichlis spicata | Spartina patens | Spartina alterniflora | Baccharis halimifolia | Borrichia frutescens | Panicum virgatum | Cladium jamaicense | Salicornia virginica | Scirpus robustus | Iva cilata | Pinus taeda | Myrica cerifera |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| North River Study area (Cont.) | 29 | 20 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 30 | 30 | 65 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 31 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 32 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 33 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 34 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 35 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 36 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 37 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 38 | 40 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 39 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 40 | 50 | 30 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 41 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 42 | 80 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 6. Plant Cover Summary for Davis Study Sites, 1972 (in percentage).

| Site No. | Juncus roemerianus | Distichlis spicata | Spartina patens | Spartina alterniflora | Baccharis halimifolia | Borrichia frutescens | Panicum virgatum | Cladium jamaicense | Salicornia virginica | Scirpus robustus | Iva ciliata | Pinus taeda | Myrica cerifera |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A* | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B* | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 |
| 1 | 0 | 0 | 90 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 40 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 50 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 80 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 25 | 0 | 50 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 80 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 20 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 60 |
| 23 | 10 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

* Unditched

Table 7. Plant Cover Summary for King's Point Study Sites, 1972 (in percentage).

| Site No. | Juncus roemerianus | Distichlis spicata | Spartina patens | Spartina alterniflora | Baccharis halimifolia | Borrichia frutescens | Panicum virgatum | Cladium jamaicense | Salicornia virginica | Scirpus robustus | Iva ciliata | Pinus taeda | Myrica cerifera |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 95 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| 2 | 5 | 0 | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 85 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 30 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 100 | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 80 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 55 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 80 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 80 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 |
| 14 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 10 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 60 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 40 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 80 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 30 | 60 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 8. Plant Cover Summary for Newport River Study Sites, 1972 (in percentage).

| Site No. | Juncus roemerianus | Distichlis spicata | Spartina patens | Spartina alterniflora | Baccharis halimifolia | Borrichia frutescens | Panicum virgatum | Cladium jamaicense | Salicornia virginica | Scirpus robustus | Iva ciliata | Pinus taeda | Myrica cerifera |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 25 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 50 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 40 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 25 | 25 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 50 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 40 | 0 | 30 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10* | 0 | 25 | 25 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 25 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 70 | 25 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 80 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*Unditched site

Table 9. Abundance of *Aedes* - *Psorophora* and *Anopheles* - *Culex* Species at Ward's Creek and North River Study Sites, 1971 (percentage/raw number).

| | Site No. | Mean Breeding Index | Range | Total specimens taken/site | Total specimens identified | *Aedes* and *Psorophora* | *Anopheles* and *Culex* |
|---|---|---|---|---|---|---|---|
| Ward's Creek Study area | 1 | 0.000 | 0-4320.0 | 13,886 | 11,157 | 100/ 13,886 | 0/0 |
| North River Study area | 2 | 2.000 | 0- 25.0 | 133 | 80 | 70/93 | 30/40 |
| | 3 | 0.440 | 0- 2.6 | 244 | 106 | 80/195 | 20/49 |
| | 4 | 262.400 | 0-3420.0 | 1540 | 433 | 100/1,540 | |
| | 5 | 14.000 | 0- 151.0 | 88 | 40 | 57/50 | 43/38 |
| | 6 | 0.004 | 0- 0.025 | 8 | 3 | 67/5 | 33/3 |
| | 7 | 6.100 | 0- 69.0 | 186 | 53 | 29/54 | 71/132 |
| | 8 | 2.100 | 0- 14.7 | 124 | 34 | 17/21 | 83/103 |
| | 9 | 0.550 | 0- 3.6 | 56 | 24 | 13/7 | 87/49 |
| | 10 | 3.000 | 0- 43.0 | 199 | 136 | 100/199 | |
| | 11 | 3.300 | 0- 43.0 | 175 | 74 | 43/75 | 57/100 |
| | 12 | 1.500 | 0- 20.0 | 36 | 20 | 25/9 | 75/27 |
| | 13 | 0.540 | 0- 5.6 | 98 | 53 | 35/34 | 65/54 |
| | 14 | 61.000 | 0- 445.5 | 289 | 242 | 86/248 | 14/41 |
| | 15 | 2.000 | 0- 17.3 | 183 | 73 | 46/85 | 54/98 |
| | 16 | 1.800 | 0- 18.0 | 138 | 103 | 100/138 | 0/0 |
| | 17 | 1.000 | 0- 4.2 | 131 | 39 | 25/32 | 75/99 |
| | 18 | 4.500 | 0- 28.0 | 194 | 48 | 70/136 | 30/58 |
| | 19 | 1.000 | 0- 9.6 | 45 | 27 | 30/14 | 70/31 |
| | 20 | 1.900 | 0- 13.0 | 132 | 57 | 78/103 | 22/29 |
| | 21 | 7.900 | 0- 35.2 | 237 | 116 | 90/213 | 10/24 |
| | 22 | 1.800 | 0- 5.6 | 141 | 66 | 75/106 | 25/35 |
| | 23 | 2.100 | 0- 47.0 | 194 | 90 | 80/155 | 20/39 |
| | 24 | 1.600 | 0- 19.2 | 132 | 48 | 35/46 | 65/86 |
| | 25 | 13.000 | 0- 80.0 | 18 | 10 | 10/2 | 90/16 |
| | 26 | 2.100 | 0- 16.0 | 50 | 12 | 0/0 | 100/50 |
| | 27 | 2.000 | 0- 12.0 | 90 | 37 | 0/0 | 100/90 |
| | 28 | 1.300 | 0- 13.0 | 50 | 23 | 0/0 | 100/50 |
| | 29 | 1.100 | 0- 8.3 | 65 | 25 | 0/0 | 100/65 |
| | 30 | 1.400 | 0- 13.0 | 57 | 20 | 0/0 | 100/57 |
| | 31 | 1.800 | 0- 12.0 | 73 | 22 | 0/0 | 100/73 |
| | 32 | 1.300 | 0- 11.0 | 64 | 17 | 6/4 | 94/60 |
| | 33 | 1.700 | 0- 21.6 | 107 | 44 | 5/5 | 95/102 |
| | 34 | 1.800 | 0- 17.6 | 110 | 47 | 0/0 | 100/110 |
| | 35 | 0 500 | 0- 4.2 | 53 | 35 | 3/2 | 97/51 |
| | 36 | 1.000 | 0- 7.5 | 54 | 16 | 0/0 | 100/54 |
| | 37 | 4.000 | 0- 33.0 | 53 | 22 | 0/0 | 100/53 |
| | 38 | 4.800 | 0- 72.0 | 88 | 29 | 0/0 | 100/88 |
| | 39 | 0.200 | 0- 1.25 | 52 | 22 | 5/3 | 95/49 |
| | 40 | 2.000 | 0- 23.0 | 73 | 42 | 55/40 | 45/33 |
| | 41 | 0.500 | 0- 5.4 | 49 | 22 | 23/11 | 77/38 |
| | 42 | 1.200 | 0- 18.0 | 86 | 28 | 0/0 | 100/86 |

Table 9. (Continued)

| | Site No. | Aedes sollicitans | Aedes taeniorhynchus | Other Aedes Spp. | Psorophora confinnis | Anopheles atropos | Anopheles bradleyi | Other Anopheles | Culex salinarius |
|---|---|---|---|---|---|---|---|---|---|
| Ward's Creek Study area | 1 | 6.2/860 | 93.8/13,052 | | | | | | |
| North River Study area | 2 | 58.0/77 | 12.0/16 | | | 4/5 | 26/35 | | |
| | 3 | 65.0/158 | 15.0/37 | | | 1/2 | 19/46 | | |
| | 4 | 21.0/339 | 78.0/1201 | | | 0/0 | 0/0 | | |
| | 5 | 47.0/41 | 10.0/9 | | | 23/20 | 20/18 | | |
| | 6 | 67.0/58 | 0/0 | | | 0/0 | 33/3 | | |
| | 7 | 17.0/32 | 8.0/15 | | | 9/16 | 62/115 | 3/6 | |
| | 8 | 17.0/21 | 0/0 | | | 13/16 | 70/87 | | |
| | 9 | 13.0/7 | 0/0 | | | 20/11 | 67/38 | | |
| | 10 | 60.0/119 | 40.0/80 | | | 0/0 | 0/0 | | |
| | 11 | 39.0/68 | 4.0/7 | | | 0/0 | 53/93 | | 4/7 |
| | 12 | 25.0/9 | 0/0 | | | 15/5 | 60/22 | | |
| | 13 | 33.0/32 | 2.0/2 | | | 6/6 | 56/55 | | 2/2 |
| | 14 | 16.0/46 | 70.0/202 | | | 2/6 | 12/35 | | |
| | 15 | 38.0/69 | 8.0/15 | | | 10/18 | 17/31 | | 25/46 |
| | 16 | 61.0/84 | 20.0/28 | 14/19 | 2/3 | 2/3 | 0/0 | | |
| | 17 | 18.0/24 | 8.0/10 | | | 12/16 | 62/81 | | |
| | 18 | 64.0/124 | 6.0/12 | | | 5/10 | 25/49 | | |
| | 19 | 22.0/10 | 8.0/4 | | | 7/3 | 60/27 | 3/1 | |
| | 20 | 73.0/96 | 5.0/7 | | | 0/0 | 22/29 | | |
| | 21 | 84.0/199 | 6.0/14 | | | 2/5 | 8/19 | | |
| | 22 | 74.0/104 | 0.0/0 | | | 14/20 | 11/16 | | |
| | 23 | 28.0/54 | 52.0/101 | | | 6/12 | 14/27 | | |
| | 24 | 29.0/38 | 5.0/7 | | | 12/16 | 54/71 | 10/2 | |
| | 25 | 10.0/2 | 0.0/0 | | | 0/0 | 80/14 | | |
| | 26 | 0/0 | 0/0 | | | 8/4 | 92/46 | | |
| | 27 | 0/0 | 0/0 | | | 32/29 | 68/61 | | |
| | 28 | 0/0 | 0/0 | | | 30/15 | 70/35 | | |
| | 29 | 0/0 | 0/0 | | | 44/29 | 56/36 | | |
| | 30 | 0/0 | 0/0 | | | 5/3 | 95/54 | | |
| | 31 | 0/0 | 0/0 | | | 32/23 | 68/50 | | |
| | 32 | 6.0/4 | 0/0 | | | 18/12 | 76/48 | | |
| | 33 | 5.0/5 | 0/0 | | | 60/64 | 35/37 | | |
| | 34 | 0/0 | 0/0 | | | 68/75 | 32/35 | | |
| | 35 | 3.0/2 | 0/0 | | | 37/20 | 60/31 | | |
| | 36 | 0/0 | 0/0 | | | 31/17 | 69/37 | | |
| | 37 | 0/0 | 0/0 | | | 18/10 | 77/41 | 5/2 | |
| | 38 | 0/0 | 0/0 | | | 34/30 | 66/58 | | |
| | 39 | 5.0/3 | 0/0 | | | 45/23 | 50/26 | | |
| | 40 | 36.0/26 | 19.0/14 | | | 22/16 | 23/17 | | |
| | 41 | 14.0/7 | 9.0/4 | | | 40/22 | 32/16 | 5/2 | |
| | 42 | 0/0 | 0/0 | | | 36/31 | 64/55 | | |

Table 10. Abundance of *Aedes* - *Psorophora* and *Anopheles* - *Culex* Species at Davis Study Sites (percentage/raw number).

| Site No. | Mean breeding index | Range | Total specimens taken/site | Total specimens identified | *Aedes* and *Psorophora* | *Anopheles* and *Culex* | *Aedes sollicitans* | *Aedes taeniorhynchus* |
|---|---|---|---|---|---|---|---|---|
| A* | 57.30 | 2.30-234.0 | 177 | 145 | 0/0 | 100/145 | 0/0 | |
| B* | 96.00 | 5.00-450.0 | 114 | 98 | 2/2 | 98/96 | 0/0 | 2/2 |
| C* | 8.00 | 0.40- 31.0 | 132 | 132 | 99/131 | 1/1 | 25/32 | |
| 1 | 5.30 | 0.15- 12.6 | 55 | 55 | 100/55 | 0/0 | 2/1 | |
| 2 | 0.26 | 0.01- 0.9 | 27 | 27 | 100/27 | 0/0 | 0/0 | |
| 3 | 3.20 | 0.40- 7.7 | 49 | 37 | 91/37 | 9/3 | 13/5 | |
| 4 | 0.00 | - | 0 | 0 | 0/0 | 0/0 | 0/0 | |
| 5 | 0.65 | 0.10- 1.2 | 5 | 5 | 0/0 | 100/5 | 0/0 | |
| 6 | 2.30 | 0.10- 4.5 | 10 | 10 | 56/6 | 44/4 | 50/5 | |
| 7 | 2.10 | 0.10- 9.1 | 20 | 18 | 60/10 | 40/8 | 28/5 | |
| 8 | 3.90 | 0.20- 17.6 | 24 | 24 | 17/4 | 83/20 | 8/2 | |
| 9 | 1.90 | 0.40- 4.0 | 38 | 38 | 68/26 | 32/12 | 0/0 | |
| 10 | 2.60 | 0.20- 20.0 | 72 | 71 | 49/34 | 51/37 | 20/13 | |
| 11 | 8.10 | 0.20- 65.0 | 198 | 168 | 47/178 | 53/90 | 8/14 | 2/1 |
| 12 | 6.40 | 0.60- 18.9 | 93 | 82 | 19/7 | 81/75 | 5/4 | |
| 13 | 6.20 | 0.20- 20.0 | 53 | 51 | 81/41 | 19/10 | 41/22 | |
| 14 | 1.70 | 0.15- 6.75 | 33 | 32 | 15/5 | 85/27 | 9/3 | 6/2 |
| 15 | 1.10 | 0.20- 1.80 | 18 | 18 | 0/0 | 100/18 | 0/0 | |
| 16 | 6.60 | 0.06- 72.60 | 156 | 156 | 70/100 | 30/46 | 20/31 | 9/14 |
| 17 | 1.30 | 0.10- 1.80 | 31 | 31 | 3/1 | 97/30 | 3/1 | |
| 18 | 1.30 | 0.10- 1.80 | 29 | 29 | 0/0 | 100/29 | 0/0 | |
| 19 | 0.00 | - | 0 | 0 | 0/0 | 0/0 | 0/0 | |
| 20 | 0.84 | 0.05- 4.20 | 33 | 33 | 100/33 | 0/0 | 40/13 | |
| 21 | 6.30 | 0.40- 16.0 | 12 | 12 | 8/1 | 92/11 | 8/1 | |
| 22 | 0.00 | - | 0 | 0 | 0/0 | 0/0 | 0/0 | |
| 23 | 0.90 | 0.15- 4.5 | 15 | 15 | 20/3 | 80/12 | 20/3 | |

*Undi tched Sites

Table 10. (Continued)

| Site No. | Aedes atlanticus | Other Aedes Spp. | Psorophora confinnis | Other Psoro. Spp. | Anopheles atropos | An. bradleyi | An. 2nd instar | Culex territans | Other Culex Spp. |
|---|---|---|---|---|---|---|---|---|---|
| A* | | | | | 2/4 | 44/64 | 46/68 | 6/9 | |
| B* | | | | | 8/8 | 44/42 | 31/30 | 14/14 | 2/2 |
| C* | 42/53 | 2/8 | | 30/38 | | | | | 1/1 |
| 1 | 94/52 | | 4/2 | | | | | | |
| 2 | 100/27 | | | | | | | | |
| 3 | 70/25 | 6/3 | | 2/1 | | | 9/3 | | |
| 4 | | | | | | | | | |
| 5 | | | | | | 60/3 | 40/2 | | |
| 6 | 10/1 | | | | | | 40/2 | | |
| 7. | 28/5 | | | | | 16/3 | 28/5 | | |
| 8 | 4/1 | | 4/1 | | 8/2 | 8/2 | 68/16 | | |
| 9 | 30/11 | 37/14 | | | | 22/5 | 10/7 | | |
| 10 | | 29/21 | | | 3/2 | 12/9 | 36/26 | | |
| 11 | | 37/62 | | | 11/19 | 9/16 | 33/55 | | |
| 12 | 3/2 | | | | 1/1 | 25/20 | 66/54 | | |
| 13 | 6/3 | 30/16 | 4/2 | | 9/5 | | 9/5 | | |
| 14 | | | | | 6/2 | 25/8 | 54/17 | | |
| 15 | | | | | | 12/2 | 88/16 | | |
| 16 | | 41/65 | | | 3/4 | 4/7 | 23/35 | | |
| 17 | | | | | 40/12 | 16/5 | 41/13 | | |
| 18 | | | | | 41/12 | 14/4 | 45/13 | | |
| 19 | | | | | | | | | |
| 20 | 57/19 | 3/1 | | | | | | | |
| 21 | | | | | 42/5 | 8/1 | 42/5 | | |
| 22 | | | | | | | | | |
| 23 | | | | | 34/5 | 6/1 | 40/6 | | |

*Unditched Sites

Table 11. Abundance of *Aedes* - *Psorophora* and *Anopheles* - *Culex* Species at King's Point Study Sites, 1972 (percentage/raw number).

| Site No. | Mean breeding index | Range | Total specimens taken/site | Total specimens identified | *Aedes* and *Psorophora* | *Anopheles* and *Culex* | *Aedes sollicitans* |
|---|---|---|---|---|---|---|---|
| 1 | 2.80 | .050-23.5 | 178 | 178 | 20/36 | 80/142 | 17/31 |
| 2 | 20.00 | 2.500-90.0 | 21 | 21 | | 100/21 | |
| 3 | 10.00 | .1 -63.0 | 298 | 298 | 1/3 | 99/295 | 1/2 |
| 4 | 2.50 | .4 - 9.6 | 16 | 16 | | 100/16 | |
| 5 | 1.20 | .05 - 2.4 | 77 | 77 | | 100/77 | |
| 6 | 0.61 | .20 - 1.8 | 22 | 22 | | 100/22 | |
| 7 | 0.18 | .03 - 1.4 | 26 | 26 | | 100/26 | |
| 8 | 1.10 | .10 - 8.4 | 27 | 27 | | 100/27 | |
| 9 | 0.28 | .15 - 0.6 | 16 | 16 | | 100/16 | |
| 10 | 0.80 | .20 - 2.4 | 11 | 11 | | 100/11 | |
| 11 | 1.10 | .15 - 2.4 | 14 | 14 | 7/1 | 93/13 | |
| 12 | 3.40 | .40 -16.0 | 19 | 19 | | 100/19 | |
| 13 | 0.15 | - | 1 | 1 | | 100/1 | |
| 14 | 0.40 | .05 - 2.1 | 27 | 27 | | 100/27 | |
| 15 | 10.70 | .15 -55.3 | 110 | 110 | | 100/110 | |
| 16 | 0.26 | .05 - 1.25 | 22 | 22 | 5/1 | 95/21 | 5/1 |
| 17 | 0.68 | .10 - 3.0 | 31 | 31 | 4/1 | 96/30 | |
| 18 | 0.45 | .15 - 1.35 | 11 | 11 | 27/3 | 73/8 | 18/2 |
| 19 | 0.05 | .005- .20 | 18 | 18 | 100/18 | | 95/17 |
| 20 | 65.20 | 1.5 -276.0 | 387 | 387 | 98/38 | 2/6 | 92/357 |
| 21 | 12.80 | .1 -69.0 | 273 | 226 | 49/107 | 51/119 | 26/60 |

Table 11. (Continued)

| Site No. | Aedes taeniorhynchus | Aedes atlanticus | Other Aedes Spp. | Other Psorophora Spp. | Anopheles atropos | Anopheles bradleyi | Anopheles 2nd instar | Culex salinarius |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.5/1 | | 2/4 | | 6/12 | 24/43 | 50/86 | 0.5/1 |
| 2 | | | | | | 50/10 | 50/11 | |
| 3 | 1/1 | | | | 1/2 | 24/72 | 73/198 | |
| 4 | | | | | 32/5 | 6/1 | 62/10 | |
| 5 | | | | | 24/18 | 40/31 | 36/28 | |
| 6 | | | | | 23/5 | 41/9 | 36/8 | |
| 7 | | | | | 27/7 | 27/7 | 46/12 | |
| 8 | | | | | 40/11 | 26/7 | 33/9 | |
| 9 | | | | | 31/5 | 13/2 | 56/9 | |
| 10 | | | | | 18/2 | 18/2 | 64/7 | |
| 11 | | | 7/1 | | | 15/2 | 78/11 | |
| 12 | | | | | | 79/15 | 2/14 | |
| 13 | | | | | | | 100/1 | |
| 14 | | | | | 11/3 | 26/7 | 63/17 | |
| 15 | | | | | 8/9 | 18/20 | 74/81 | |
| 16 | | | | | 9/2 | 50/11 | 36/8 | |
| 17 | 4/1 | | | | 6/2 | 61/19 | 29/9 | |
| 18 | | | 9/1 | | 9/1 | 55/6 | 9/1 | |
| 19 | 5/1 | | | | | | | |
| 20 | 6/24 | | | | 1/2 | 1/3 | 1/1 | |
| 21 | 1/2 | 2/4 | 17/40 | 3/1 | | 12/25 | 31/71 | 8/23 |

Table 12. Abundance of *Aedes* - *Psorophora* and *Anopheles* - *Culex* Species at Newport River Study Sites, 1972 (percentage/raw number).

| Site No. | Mean breeding index | Range | Total specimens taken/site | Total specimens identified | *Aedes* and *Psorophora* | *Anopheles* and *Culex* | *Aedes sollicitans* | *Aedes taeniorhynchus* |
|---|---|---|---|---|---|---|---|---|
| 1 | 4.30 | .4-0019.2 | 36 | 36 | 66/24 | 34/12 | 66/24 | |
| 2 | 0.40 | - | 1 | 1 | | 100/1 | | |
| 3 | 17.50 | .4-0200.0 | 355 | 355 | 31/106 | 69/239 | 30/105 | 1/1 |
| 4 | 3.80 | .4-0009.6 | 9 | 9 | | 100/9 | 0/0 | |
| 5 | 0.20 | - | 1 | 1 | 100/1 | | | |
| 6 | 0.00 | .0- | 0 | 0 | | | | |
| 7 | 0.00 | .0- | 0 | 0 | | | | |
| 8 | 4.20 | .1-0025.6 | 128 | 128 | 100/128 | | 80/104 | 6/8 |
| 9 | 0.35 | .2-0000.8 | 5 | 5 | 40/2 | 60/3 | 40/2 | |
| 10* | 256.00 | 40.0-1600.0 | 156 | 156 | 30/47 | 70/109 | 22/35 | 0.07/1 |
| 11 | 0.00 | .0- | 0 | 0 | | | | |
| 12 | 0.00 | .0- | 0 | 0 | | | | |
| 13 | 8.00 | .4- 14.0 | 36 | 36 | 6/2 | 94/34 | 7/2 | |
| 14 | 2.40 | .2- 7.2 | 27 | 27 | 28/8 | 72/19 | 28/8 | |

*Undiched Site

Table 12. (Continued)

| Site No. | Other *Aedes* Spp. | *Psorophora confinnis* | *Anopheles atropos* | *Anopheles bradleyi* | *Anopheles* 2nd instar | *Culex salinarius* | *Culex territans* | Other *Culex* Spp. |
|---|---|---|---|---|---|---|---|---|
| 1 | | | 6/2 | 16/6 | 12/4 | | | |
| 2 | | | | 100/1 | | | | |
| 3 | | | 5/18 | 16/57 | 46/162 | 1/1 | | 1/2 |
| 4 | | | | 99/8 | 1/1 | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | 12/15 | 2/1 | | | | | | |
| 9 | | | | 20/1 | | | 40/2 | |
| 10 | 8/11 | | 21/32 | 19/29 | 29/46 | 1/2 | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | 8/3 | 58/21 | 16/6 | 55/2 | 55/2 | |
| 14 | | | 7/2 | 37/10 | 19/5 | 7/2 | | |

Table 13. Total Number of Larvae Taken per Weekly Interval from Ward's Creek Study Area and North River Study Sites (Unditched) 1971. (Based on Total Number Identified)

| Date | | Aedes and Psorophora | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. 1* | 16 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | Total |
| Mar. 4-10 | 46 | 22 | 0 | 4 | 5 | 7 | 5 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 11-17 | 42 | 12 | 0 | 0 | 0 | 6 | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 31 |
| 18-24 | 0 | 23 | 13 | 0 | 0 | 7 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 25-31 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Apr. 1- 7 | 112 | 8 | 13 | 0 | 30 | 41 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 103 |
| 8-14 | 49 | 4 | 10 | 0 | 13 | 7 | 8 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| 15-21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-28 | 2062 | 0 | 16 | 2 | 5 | 10 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 29-May 5 | 873 | 2 | 4 | 0 | 0 | 2 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 17 |
| May 6-12 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 13-19 | 74 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 20-26 | 80 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 27-June 2 | 978 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 3- 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-16 | 411 | 0 | 0 | 0 | 6 | 2 | 1 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 51 |
| 17-23 | 394 | 11 | 3 | 0 | 0 | 8 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| 24-30 | 0 | 14 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| July 1- 7 | 35 | 15 | 2 | 0 | 0 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 28 |
| 8-14 | 1462 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 15-21 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| 22-28 | 16 | 4 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 29-Aug. 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5-11 | 7223 | 13 | 0 | 0 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 1 | 0 | 35 |
| 12-18 | 6 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | Total | | 542 |

*Wards Creek

Table 13. (Continued)

| Date | Anopheles and Culex | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 16 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | Total |
| Mar. 4-10 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 11-17 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 8 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 1 | 27 |
| 18-24 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 2 | 0 | 4 | 5 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 3 | 29 |
| 25-31 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| Apr. 1- 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 10 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 9 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 5 |
| 29-May 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| May 6-12 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 10 |
| 13-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 16 |
| 20-26 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 14 |
| 27-Jun 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 1 | 22 |
| 3- 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-16 | 0 | 7 | 2 | 2 | 1 | 0 | 5 | 1 | 0 | 1 | 4 | 1 | 1 | 1 | 0 | 3 | 3 | 5 | 1 | 2 | 2 | 4 | 3 | 2 | 3 | 2 | 56 |
| 17-23 | 0 | 3 | 0 | 0 | 1 | 0 | 2 | 3 | 0 | 1 | 5 | 5 | 5 | 1 | 5 | 0 | 3 | 1 | 6 | 0 | 3 | 1 | 5 | 5 | 1 | 7 | 63 |
| 24-30 | 0 | 0 | 2 | 3 | 2 | 0 | 1 | 2 | 0 | 1 | 4 | 3 | 0 | 1 | 0 | 0 | 4 | 2 | 4 | 2 | 1 | 4 | 1 | 3 | 1 | 4 | 45 |
| July 1- 7 | 0 | 2 | 1 | 0 | 0 | 5 | 0 | 1 | 2 | 5 | 8 | 2 | 4 | 7 | 4 | 1 | 4 | 3 | 8 | 1 | 2 | 3 | 1 | 1 | 3 | 0 | 68 |
| 8-14 | 0 | 2 | 7 | 3 | 0 | 0 | 3 | 1 | 5 | 0 | 3 | 1 | 0 | 4 | 1 | 3 | 0 | 0 | 5 | 1 | 6 | 0 | 1 | 2 | 1 | 0 | 49 |
| 15-21 | 0 | 2 | 2 | 0 | 0 | 2 | 3 | 4 | 0 | 0 | 3 | 4 | 4 | 3 | 6 | 2 | 2 | 6 | 1 | 1 | 3 | 1 | 4 | 3 | 7 | 1 | 63 |
| 22-28 | 0 | 0 | 2 | 4 | 0 | 2 | 1 | 5 | 0 | 0 | 2 | 0 | 4 | 3 | 0 | 3 | 1 | 2 | 6 | 3 | 0 | 2 | 1 | 0 | 0 | 1 | 42 |
| 29-Aug 4 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 5-11 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 18 |
| 12-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| | | | | | | | | | | | | | | | | | | | | | | | | | Total | | 574 |

Table 14. Total Number of Larvae Taken per Weekly Interval from the North River (Ditched) Study Sites, 1971. (Based on Total Number Identified).

| Date | Aedes and Psorophora | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 17 | Total |
| Mar. 4-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 11-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 18-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 5 |
| 25-31 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 5 |
| Apr. 1- 7 | 1 | 6 | 11 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 25 |
| 8-14 | 11 | 8 | 24 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 7 | 11 | 0 | 66 |
| 15-21 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 22-28 | 7 | 7 | 68 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 2 | 1 | 99 |
| 29-May 5 | 3 | 0 | 26 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 3 | 10 | 0 | 0 | 46 |
| 6-12 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 9 | 7 | 3 | 26 |
| 13-19 | 1 | 3 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 |
| 20-26 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 | 2 | 17 |
| 27-June 2 | 2 | 2 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 1 | 1 | 0 | 22 |
| 3- 9 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 8 |
| 10-16 | 5 | 30 | 235 | 4 | 0 | 0 | 3 | 1 | 0 | 8 | 0 | 4 | 6 | 0 | 0 | 296 |
| 17-23 | 3 | 2 | 33 | 2 | 0 | 0 | 0 | 0 | 11 | 1 | 1 | 0 | 15 | 0 | 0 | 68 |
| 24-30 | 1 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 8 |
| July 1- 7 | 0 | 12 | 11 | 0 | 0 | 5 | 0 | 0 | 18 | 1 | 0 | 0 | 2 | 0 | 0 | 49 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 13 |
| 22-28 | 1 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 63 | 1 | 2 | 0 | 0 | 2 | 0 | 75 |
| 29-Aug 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5-11 | 5 | 4 | 2 | 11 | 0 | 1 | 0 | 2 | 29 | 3 | 1 | 0 | 142 | 1 | 0 | 201 |
| 12-18 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| | | | | | | | | | | | | | | Total | | 1066 |

Table 14. (Continued)

| Date | Anopheles and Culex | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 17 | Total |
| Mar. 4-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 11-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 18-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25-31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Apr. 1- 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 |
| 29-May 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6-12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 17 | 4 | 27 |
| 13-19 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 |
| 20-26 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 8 |
| 27-Jun 2 | 0 | 1 | 0 | 4 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 3 | 5 | 2 | 3 | 23 |
| 3- 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 17 |
| 10-16 | 0 | 0 | 0 | 1 | 0 | 2 | 5 | 0 | 0 | 2 | 0 | 1 | 1 | 2 | 4 | 18 |
| 17-23 | 0 | 2 | 0 | 2 | 0 | 2 | 6 | 2 | 0 | 0 | 8 | 6 | 3 | 3 | 0 | 34 |
| 24-30 | 3 | 4 | 0 | 1 | 0 | 2 | 0 | 4 | 0 | 3 | 0 | 3 | 0 | 4 | 1 | 25 |
| July 1- 7 | 1 | 1 | 0 | 0 | 0 | 9 | 0 | 1 | 0 | 2 | 0 | 0 | 3 | 0 | 2 | 19 |
| 8-14 | 0 | 3 | 0 | 3 | 1 | 0 | 0 | 3 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 17 |
| 15-21 | 6 | 1 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 4 | 4 | 4 | 2 | 1 | 0 | 29 |
| 22-28 | 3 | 3 | 0 | 3 | 0 | 13 | 4 | 1 | 0 | 7 | 2 | 4 | 5 | 4 | 3 | 52 |
| 29-Aug 4 | 0 | 6 | 0 | 0 | 0 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 16 |
| 5-11 | 3 | 1 | 0 | 0 | 0 | 2 | 4 | 5 | 0 | 5 | 0 | 4 | 2 | 2 | 3 | 31 |
| 12-18 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 12 |
| | | | | | | | | | | | | | | | Total | 352 |

Table 15. Total Number of Larvae Taken per Weekly Interval from The King's Point Study Sites (Unditched) 1972. (Based on Total Number Identified)

| Date | Aedes and Psorophora | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | Total |
| Mar. 4-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 11-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 30 |
| 25-31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 |
| Apr. 1- 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 1 | 33 |
| 8-14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29-May 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6-12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 |
| 13-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 20-26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27-Jun 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 |
| 3- 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 10-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 17-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 5 |
| 24-30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 1- 7 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 30 | 73 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 22-28 | 13 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 3 | 11 |
| 29-Aug 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 195 | 12 | 224 |
| 5-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 66 | 0 | 67 |
| 12-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19-25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26-Sep. 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2- 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 5 | 47 | 62 |
| 9-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 16-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 23-29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 30-Oct. 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21-27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 00 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | | Total | | 560 |

Table 15. (Continued)

| Date | Anopheles and Culex | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | Total |
| Mar. 4-10 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 9 |
| 11-17 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 18-24 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 25-31 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 8 |
| Apr. 1- 7 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29-May 5 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 12 |
| 6-12 | 17 | 2 | 17 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 13-19 | 3 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 20-26 | 0 | 0 | 4 | 1 | 11 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 25 |
| 27-Jun 2 | 4 | 0 | 3 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 13 |
| 3- 9 | 4 | 3 | 2 | 1 | 4 | 1 | 9 | 2 | 2 | 1 | 0 | 0 | 0 | 3 | 2 | 2 | 3 | 2 | 0 | 0 | 3 | 44 |
| 10-16 | 4 | 0 | 37 | 0 | 5 | 1 | 3 | 2 | 1 | 1 | 1 | 2 | 0 | 1 | 4 | 2 | 2 | 0 | 0 | 1 | 16 | 83 |
| 17-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24-30 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 13 |
| July 1- 7 | 10 | 2 | 21 | 0 |  | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 3 | 0 | 0 | 0 | 21 | 71 |
| 8-14 | 7 | 1 | 15 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 33 |
| 15-21 | 5 | 0 | 28 | 0 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 12 | 56 |
| 22-28 | 35 | 2 | 13 | 2 | 13 | 3 | 0 | 1 | 1 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 29 | 118 |
| 29-Aug 4 | 4 | 0 | 20 | 0 | 7 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 7 | 48 |
| 5-11 | 0 | 0 | 9 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 24 |
| 12-18 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 19-25 | 0 | 0 | 63 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 26-Sep 1 | 0 | 0 | 9 | 0 | 0 | 2 | 1 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 0 | 0 | 0 | 1 | 27 |
| 2- 8 | 9 | 0 | 9 | 6 | 6 | 3 | 4 | 12 | 1 | 0 | 1 | 2 | 1 | 7 | 32 | 0 | 0 | 2 | 0 | 0 | 4 | 99 |
| 9-15 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 1 | 11 | 1 | 3 | 0 | 0 | 0 | 4 | 28 |
| 16-22 | 7 | 0 | 5 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 22 |
| 23-29 | 0 | 9 | 0 | 3 | 0 | 3 | 0 | 2 | 0 | 4 | 0 | 2 | 0 | 5 | 0 | 3 | 1 | 3 | 0 | 0 | 13 | 48 |
| 30-Oct 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21-27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | Total | | | 965 |

Table 16. Total Number of Larvae Taken per Weekly Interval from Davis Study Sites (Ditched) 1972. (Based on Total Number Identified)

| Date | *Aedes* and *Psorophora* | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 2 | 3 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Total |
| Mar. 4-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18-24 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 23 |
| 25-31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 6 |
| Apr. 1- 7 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 13 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 29-May 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 6-12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 13-19 | 13 | 10 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 37 |
| 20-26 | 6 | 13 | 0 | 0 | 2 | 1 | 5 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 35 |
| 27-Jun 2 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 3- 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 10-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 17-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24-30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| July 1- 7 | 2 | 3 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 13 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 15-21 | 5 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20 | 55 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 29-Aug 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 110 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 113 |
| 5-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 6 |
| 12-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 19-25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 26-Sep 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 2- 8 | 1 | 11 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 37 |
| 9-15 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 16-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23-29 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 30-Oct 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21-27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | | Total | | 450 |

Table 16. (Continued)

| Date | Anopheles and Culex | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 2 | 3 | 4 | 5 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Total |
| Mar. 4-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 11-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25-31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Apr. 1- 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 29-May 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6-12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 20-26 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 8 |
| 27-Jun 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3- 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 10-16 | 0 | 3 | 0 | 0 | 0 | 1 | 5 | 0 | 7 | 15 | 0 | 0 | 2 | 2 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 44 |
| 17-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24-30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 18 | 0 | 0 | 3 | 1 | 4 | 6 | 7 | 0 | 0 | 0 | 0 | 2 | 49 |
| July 1- 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 1 | 3 | 0 | 1 | 0 | 00 | 0 | 0 | 0 | 0 | 0 | 17 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18 | 13 | 0 | 1 | 3 | 4 | 9 | 7 | 0 | 0 | 8 | 0 | 0 | 66 |
| 15-21 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 2 | 11 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 29-Aug 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19 | 5 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 5-11 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 6 | 1 | 5 | 0 | 1 | 3 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| 12-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 19-25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 1 | 2 | 3 | 6 | 6 | 0 | 0 | 0 | 0 | 2 | 26 |
| 26-Sep 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 8 |
| 2-8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 9-15 | 0 | 0 | 0 | 0 | 0 | 11 | 2 | 0 | 2 | 12 | 2 | 4 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 39 |
| 16-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23-29 | 0 | 0 | 0 | 0 | 6 | 6 | 9 | 4 | 7 | 8 | 7 | 9 | 3 | 4 | 3 | 0 | 0 | 0 | 3 | 0 | 6 | 66 |
| 30-Oct 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 7-13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 14-20 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 21-27 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | | | | | | | | | | | | | | | | | | | | Total | | 500 |

Table 17. Total Number of Larvae taken per Weekly Interval From Newport River Study Sites, 1972. (Based on Total Identified)

| Date | *Aedes* and *Psorophora* | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 11 | 12 | 13 | 14 | Total | 10* |
| Mar. 4-10 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 11-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18-24 | 4 | 0 | 20 | 5 | 1 | 0 | 0 | 33 | 1 | 0 | 0 | 0 | 0 | 64 | 4 |
| 25-31 | 13 | 0 | 27 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 46 | 16 |
| Apr. 1- 7 | 3 | 0 | 17 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 24 | 11 |
| 8-14 | 5 | 0 | 27 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 34 | 2 |
| 15-21 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 11 | 12 |
| 22-28 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| 29-May 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| 6-12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| 13-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 20-26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 1 | 0 | 9 | 0 |
| 27-Jun 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 3- 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| 17-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24-30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 21 | 0 |
| July 1- 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 15 | 0 |
| 15-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22-28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29-Aug 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 5-11 | 0 | 0 | 9 | 4 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 8 | 39 | 0 |
| 12-18 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 19-25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26-Sep 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 2- 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23-29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30-Oct 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21-27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Total | | 294 | 47 |

*Unditched Site

Table 17. (Continued)

| Date | Anopheles and Culex | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 11 | 12 | 13 | 14 | Total | 10 |
| Mar 4-10 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 11-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 18-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 25-31 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 8 |
| Apr 1- 7 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 2 |
| 8-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 15-21 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 22-28 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 |
| 29-May 5 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 6 |
| 6-12 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 4 |
| 13-19 | 0 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 6 |
| 20-26 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| 27-Jun 2 | 0 | 0 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 15 | 4 |
| 3- 9 | 0 | 0 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 16 | 5 |
| 10-16 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 7 | 4 |
| 17-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24-30 | 0 | 0 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 20 | 5 |
| July 1- 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 8-14 | 1 | 0 | 26 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 58 | 10 |
| 15-21 | 0 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 |
| 22-28 | 0 | 0 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 |
| 29-Aug 4 | 0 | 0 | 50 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 0 |
| 5-11 | 0 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 13 | 11 |
| 12-18 | 0 | 0 | 7 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 |
| 19-25 | 6 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 17 | 0 |
| 26-Sep 1 | 0 | 1 | 40 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 4 | 67 | 1 |
| 9-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| 16-22 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 2 |
| 23-29 | 1 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 21 | 6 |
| 30-Oct 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21-27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Total | | 414 | 97 |

*Undithched Site

Table 18. Survival Summary for Species Taken from Ward's Creek and North River Study Sites, 1971 (in percentage).

| | Site No. | Aedes sollicitans | Aedes taeniorhynchus | Psorophora confinnis | Other Psoro. | Anopheles atropos | Anopheles bradleyi | Anopheles 2nd instar | Other Anopheles Spp. | Culex salinarius |
|---|---|---|---|---|---|---|---|---|---|---|
| Wards Creek Study area | 1 | 90 | 97 | - | - | - | - | - | - | - |
| North River Study area | 2 | 32 | 60 | - | - | 33 | 50 | - | - | - |
| | 3 | 100 | 100 | - | - | 100 | 90 | - | - | - |
| | 4 | 65 | 96 | - | - | - | - | - | - | - |
| | 5 | 42 | 50 | - | - | 22 | 12 | - | - | - |
| | 6 | 0 | - | - | - | - | 100 | - | - | - |
| | 7 | 55 | 100 | - | - | 100 | 60 | - | - | - |
| | 8 | 50 | - | - | - | 75 | 62 | - | - | - |
| | 9 | 0 | - | - | - | 0 | 19 | - | - | - |
| | 10 | 54 | 30 | - | - | - | - | - | - | - |
| | 11 | 76 | 100 | - | - | - | 77 | - | - | 100 |
| | 12 | 20 | - | - | - | 0 | 9 | - | - | - |
| | 13 | 60 | 100 | - | - | 33 | 36 | - | - | 100 |
| | 14 | 92 | 98 | - | - | 60 | 70 | - | - | - |
| | 15 | 40 | 83 | - | - | 43 | 41 | - | - | 1 |
| | 16 | 92 | 60 | 100 | 100 | 100 | - | - | - | - |
| | 17 | 43 | 100 | - | - | 25 | 50 | - | - | - |
| | 18 | 76 | 100 | - | - | 50 | 58 | - | - | - |
| | 19 | 100 | 50 | - | - | 100 | 56 | - | 100 | - |
| | 20 | 13 | 0 | - | - | - | 0 | - | - | - |
| | 21 | 23 | 100 | - | - | 0 | 0 | - | - | - |
| | 22 | 60 | - | - | - | 80 | 43 | - | - | - |
| | 23 | 30 | 100 | - | - | 80 | 40 | - | - | - |
| | 24 | 100 | 100 | - | - | 40 | 46 | - | - | - |
| | 25 | 100 | - | - | - | - | 50 | - | 100 | - |
| | 26 | - | - | - | - | 100 | 100 | - | - | - |
| | 27 | - | - | - | - | 50 | 44 | - | - | - |
| | 28 | - | - | - | - | 20 | 37 | - | - | - |
| | 29 | - | - | - | - | 45 | 28 | - | - | - |
| | 30 | - | - | - | - | 100 | 68 | - | - | - |

Table 18. (Continued)

| | Site No. | Aedes sollicitans | Aedes taeniorhynchus | Psorophora confinnis | Other Psoro. Spp. | Anopheles atropos | Anopheles bradleyi | Anopheles 2nd instar | Other Anopheles Spp. | Culex salinarius |
|---|---|---|---|---|---|---|---|---|---|---|
| North River | 31 | - | - | - | - | 28 | 100 | - | - | - |
| Study area | 32 | 100 | - | - | - | 0 | 46 | - | - | - |
| | 33 | 100 | - | - | - | 20 | 93 | - | - | - |
| | 34 | - | - | - | - | 62 | 80 | - | - | - |
| | 35 | 0 | - | - | - | 85 | 57 | - | - | - |
| | 36 | - | - | - | - | 0 | 54 | - | - | - |
| | 37 | - | - | - | - | 75 | 70 | - | - | - |
| | 38 | - | - | - | - | 70 | 73 | - | - | - |
| | 39 | - | - | - | - | 50 | 50 | - | - | - |
| | 40 | 60 | 100 | - | - | 55 | 30 | - | - | - |
| | 41 | 100 | 100 | - | - | 33 | 85 | - | - | - |
| | 42 | - | - | - | - | 50 | 94 | - | 100 | - |

Table 19. Survival Summary for Species Taken from Davis Study Sites, 1972 (in percentage).

| Site No. | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Other Aedes Spp. | Psorophora confinnis | Other Psoro. Spp. | Anopheles atropos | Anopheles bradleyi | Anopheles 2nd instar |
|---|---|---|---|---|---|---|---|---|---|
| A* | - | 100 | - | - | - | - | 100 | 100 | 100 |
| B* | 88 | - | 91 | 88 | - | 38 | 100 | 100 | 100 |
| C* | 100 | - | 62 | - | 50 | - | - | - | - |
| 1 | - | - | 70 | - | - | - | - | - | - |
| 2 | 100 | - | 92 | 100 | - | 100 | - | - | - |
| 3 | - | - | - | - | - | - | - | - | - |
| 4 | - | - | - | - | - | - | - | - | - |
| 5 | 100 | - | 100 | - | - | - | - | - | 100 |
| 6 | 100 | - | 40 | - | - | - | - | - | 100 |
| 7 | 50 | - | 100 | - | 100 | - | - | 100 | 40 |
| 8 | - | 100 | 73 | 90 | - | - | 100 | - | 25 |
| 9 | 100 | - | - | 100 | - | - | - | 80 | - |
| 10 | 100 | 100 | - | 92 | - | - | 100 | 100 | 77 |
| 11 | 75 | - | 100 | - | - | - | 100 | 100 | 96 |
| 12 | 86 | - | 100 | - | 100 | - | 100 | 80 | 72 |
| 13 | - | 50 | - | - | - | - | 100 | - | 100 |
| 14 | - | - | - | - | - | - | 100 | 13 | 41 |
| 15 | 100 | 100 | - | 100 | - | - | - | 50 | 68 |
| 16 | 100 | - | - | - | - | - | 100 | 100 | 100 |
| 17 | - | - | - | - | - | - | 50 | 80 | 31 |
| 18 | - | - | - | - | - | - | 50 | 80 | 31 |
| 19 | 54 | - | 95 | 100 | - | - | - | - | - |
| 20 | 100 | - | - | - | - | - | - | - | - |
| 21 | - | - | - | - | - | - | 100 | 100 | - |
| 22 | 100 | - | - | - | - | - | - | - | - |
| 23 | | | | | | | 60 | 100 | 100 |

*Unditched Sites

Table 20. Survival Summary for Species Taken from King's Point Study Sites, 1972 (in percentage).

| Site No. | Aedes sollicitans | Aedes taeniorhyn-chus | Aedes atlanticus | Other Aedes Spp. | Psorophora confinnis | Other Psoro. Spp. | Anopheles atropos | Anohpeles bradleyi | Anopheles 2nd instar | Other Anopheles Spp. | Culex salinarius |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 100 | 100 | - | 100 | - | - | 91 | 95 | 50 | - | 0 |
| 2 | - | - | - | - | - | - | - | 70 | 100 | - | - |
| 3 | 100 | 100 | - | 100 | - | - | 100 | 100 | 97 | - | - |
| 4 | - | - | - | - | - | - | 100 | 100 | 100 | - | - |
| 5 | - | - | - | - | - | - | 100 | 93 | 89 | - | - |
| 6 | - | - | - | - | - | - | 100 | 100 | 100 | - | - |
| 7 | - | - | - | - | - | - | 100 | 100 | 100 | - | - |
| 8 | - | - | - | - | - | - | 100 | 100 | 100 | - | - |
| 9 | - | - | - | - | - | - | 100 | 100 | 100 | - | - |
| 10 | - | - | - | - | - | - | 100 | 100 | 100 | - | - |
| 11 | - | - | - | 100 | - | - | - | 0 | 0 | - | - |
| 12 | - | - | - | - | - | - | - | 20 | 0 | - | - |
| 13 | - | - | - | - | - | - | - | - | 0 | - | - |
| 14 | - | - | - | - | - | - | 66 | 100 | 100 | - | - |
| 15 | - | - | - | - | - | - | 66 | 70 | 96 | - | - |
| 16 | 100 | - | - | - | - | - | 100 | 100 | 100 | - | - |
| 17 | - | 100 | - | - | - | - | 100 | 100 | 100 | - | - |
| 18 | 100 | - | - | 100 | - | - | 100 | 100 | 100 | - | - |
| 19 | 53 | 100 | - | - | - | - | - | - | - | - | - |
| 20 | 94 | 100 | - | - | - | - | 100 | 100 | 0 | - | - |

Table 21. Survival Summary for Species Taken from Newport River Study Sites, 1972 (in percentage).

| Site No. | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Other Aedes Spp. | Psorophora confinnis | Other Psoro. Spp. | Anopheles atropos | Anopheles bradleyi | Anopheles 2nd instar | Other Anopheles Spp. | Culex salinarius | Culex territans | Other Culex Spp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 100 | - | - | - | - | - | 100 | 83 | 100 | - | - | - | - |
| 2 | - | - | - | - | - | - | - | 100 | - | - | - | - | - |
| 3 | 98 | 66 | - | - | - | - | 95 | 95 | 70 | - | 100 | - | - |
| 4 | 100 | - | - | - | - | - | 100 | 100 | 100 | - | - | - | - |
| 5 | - | - | - | 0 | - | - | - | - | - | - | - | - | - |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 73 | 38 | - | 93 | 100 | - | - | - | - | - | - | - | - |
| 9 | 50 | - | - | - | - | - | - | 100 | - | - | - | 50 | - |
| 10* | 94 | 100 | - | 100 | - | - | 65 | 82 | 100 | - | 100 | - | - |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 50 | 100 | - | - | - | - | 33 | 66 | 80 | - | 100 | - | - |
| 14 | 87 | - | - | - | - | - | 100 | 60 | 100 | - | 100 | - | - |

*Unditched Site

Table 22. Mean Number of Adults Taken per Light Trap Night per Weekly Interval at the North River Light Trap, 1970.

| Date Light trap wk. | No. of Nights light trap in operation | Aedes sollicitans | Aedes taeniorhynchus | Anopheles atropos | Anopheles bradleyi | Culex salinarius | Psorophora confinnis |
|---|---|---|---|---|---|---|---|
| Aug. 5-11 | 6 | 29.0 | 16.0 | 912 | 33 | 6.0 | 14 |
| 12-18 | 5 | 43.0 | 90.0 | 1306 | 143 | 12.0 | 8 |
| 19-25 | 2 | 25.0 | 35.0 | 537 | 117 | 34.0 | 36 |
| 26-Sep 1 | 1 | 23.0 | 40.0 | 685 | 127 | 0.0 | 9 |
| 2- 8 | 5 | 23.0 | 39.0 | 680 | 118 | 0.0 | 62 |
| 9-15 | 3 | 4.0 | 10.0 | 213 | 66 | 6.0 | 4 |
| 16-22 | 4 | 38.0 | 19.0 | 125 | 127 | 8.0 | 12 |
| 23-29 | 3 | 8.0 | 8.0 | 50 | 20 | 2.0 | 4 |
| 30-Oct 6 | 3 | 22.0 | 12.0 | 523 | 30 | 3.0 | 2 |
| 7-13 | 3 | 0.7 | 0.33 | 36 | 5 | 0.0 | 0 |
| 14-20 | 3 | 1.0 | 0.33 | 9 | 5 | 0.0 | 0 |
| 21-27 | 4 | 1.0 | 0.5 | 102 | 10 | 0.25 | 0 |
| 28-Nov 3 | 1 | 12.0 | 1.0 | 294 | 54 | 1.0 | 0 |

Table 23. Total Number of Adults Taken per Month at the North River Light Trap, 1970.

| Species | | August | September | October | November | Four Month Total |
|---|---|---|---|---|---|---|
| Aedes | sollicitans | 462 | 302 | 78 | 12 | 854 |
| Aedes | taeniorhynchus | 654 | 326 | 39 | 1 | 1,020 |
| Aedes | atlanticus | 0 | 0 | 0 | 0 | 0 |
| Psorophora | confinnis | 211 | 379 | 7 | 0 | 597 |
| Anopheles | atropos | 13,760 | 4,689 | 2,109 | 294 | 20,852 |
| Anopheles | bradleyi | 1,273 | 1,358 | 158 | 54 | 2,843 |
| Culex | salinarius | 161 | 55 | 9 | 1 | 226 |
| Total for Each Month | | 16,521 | 7,109 | 2,400 | 362 | 26,392 |

| Species | | Relative Species Abundance % | Temporary Pool Breeders Aedes and Psorophora | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 3.2 | | |
| Aedes | taeniorhynchus | 3.9 | | |
| Aedes | atlanticus | 0.0 | | |
| Psorophora | confinnis | 2.3 | 9.4 | 90.6 |
| Anopheles | atropos | 79.0 | | |
| Anopheles | bradleyi | 10.8 | | |
| Culex | salinarius | 0.8 | | |
| Total | | 100.0 | | |

Table 24. Mean Number of Adults Taken per Light Trap Night per Week at the North River Light Trap, 1971.

| Date Light trap week | No. of nights light trap in operation | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Anopheles atropos | Anopheles bradleyi | Culex salinarius | Psorophora confinnis |
|---|---|---|---|---|---|---|---|---|
| Feb 25-Mar 3 | 3 | | | | 0.33 | | | |
| Mar 4- 10 | | | | | | 0.28 | | |
| 11- 17 | 7 | | | | 3.10 | 3.70 | | |
| 18- 24 | 7 | | | | 0.28 | 0.14 | | |
| 25- 31 | 7 | | | | 3.60 | 2.30 | | |
| Apr 1- 7 | 7 | | | | 0.57 | 0.71 | | |
| 8- 14 | 7 | | | | 4.60 | 3.60 | | |
| 15- 21 | 7 | 0.85 | | | 21.00 | 14.30 | | |
| 22- 28 | 7 | 0.28 | | | 22.00 | 14.00 | | |
| 29-May 5 | 7 | 1.00 | | | 3.60 | 3.00 | | |
| 6- 12 | 7 | 5.50 | 0.43 | | 22.40 | 2.70 | | 0.14 |
| 13- 19 | 7 | 0.85 | 0.14 | | 32.80 | 17.40 | | 0.14 |
| 20- 26 | 7 | 1.60 | 0.28 | | 39.00 | 23.70 | | 0.28 |
| 27-Jun 2 | 7 | 1.30 | 1.10 | | 81.00 | 37.00 | 0.85 | 1.40 |
| 3- 9 | 7 | 7.80 | 19.40 | | 145.00 | 45.00 | 2.30 | 10.50 |
| 10- 16 | 7 | 5.00 | 5.00 | | 117.00 | 58.00 | 3.60 | 6.30 |
| 17- 23 | 7 | 0.28 | 1.00 | | 97.00 | 50.00 | 0.43 | 0.71 |
| 24- 30 | 7 | 7.00 | 7.00 | | 360.00 | 85.00 | 1.70 | 6.00 |
| July 1- 7 | 7 | 10.20 | 7.00 | | 365.00 | 199.00 | 5.70 | 3.60 |
| 8- 14 | 7 | 19.40 | 13.00 | | 199.00 | 138.00 | 12.10 | 39.00 |
| 15- 21 | 7 | 28.30 | 50.00 | | 470.00 | 221.00 | 15.00 | 23.70 |
| 22- 28 | 7 | 9.70 | 28.10 | | 587.00 | 333.00 | 9.00 | 15.70 |
| 29-Aug 4 | 7 | 7.50 | 15.40 | | 380.00 | 253.00 | 13.50 | 23.40 |
| 5- 11 | 7 | 3.20 | 12.40 | | 273.00 | 194.50 | 35.00 | 19.00 |
| 12- 18 | 6 | 8.00 | 15.50 | | 226.00 | 168.00 | 31.00 | 11.50 |

Table 25. Total Number of Adult Mosquitoes Taken per Month at the North River Light Trap, 1971.

| Species | | March | April | May | June | July | August | Six Month Total |
|---|---|---|---|---|---|---|---|---|
| Aedes | sollicitans | 0 | 8 | 66 | 146 | 516 | 95 | 831 |
| Aedes | taeniorhynchus | 0 | 0 | 6 | 230 | 752 | 221 | 1,209 |
| Anopheles | atropos | 25 | 348 | 865 | 4,994 | 13,013 | 3,484 | 22,729 |
| Anopheles | bradleyi | 45 | 242 | 449 | 1,714 | 7,518 | 2,867 | 12,835 |
| Culex | salinarius | 0 | 0 | 4 | 58 | 365 | 466 | 893 |
| Total for Each Month | | 70 | 598 | 1,390 | 7,142 | 22,164 | 7,133 | 38,497 |

Relative Species Abundance %

| Species | | | Temporary Pool Breeders Aedes | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 2.2 | | |
| Aedes | taeniorhynchus | 3.1 | | |
| Anopheles | atropos | 59.1 | 5.3 | 94.7 |
| Anopheles | bradleyi | 33.3 | | |
| Culex | salinarius | 2.3 | | |
| Total | | 100.0 | | |

Table 26. Total Number of Mosquitoes Taken Biting per Thirty Minute Interval at North River Study Area, 1971.

| Date | Time (P.M.) of count | Aedes sollicitans | Aedes taeniorhynchus | Anopheles atropos | Anopheles bradleyi | Culex salinarius | Psorophora confinnis |
|---|---|---|---|---|---|---|---|
| June 2 | 8:30- 9:00 | 8 | 7 | 27 | 11 | 2 | |
| 4 | 8:30- 9:00 | 7 | 13 | 12 | 4 | 2 | 3 |
| 8 | 8:45- 9:15 | 2 | 20 | 8 | 7 | 20 | 1 |
| 10 | 8:30- 9:00 | 13 | 44 | 24 | 10 | 14 | 8 |
| 15 | 8:30- 9:15 | 7 | 9 | 42 | 17 | 11 | 1 |
| | 9:15- 9:45 | 4 | 6 | 22 | 9 | 4 | 2 |
| 17 | 9:30-10:00 | | 2 | 25 | 2 | 2 | |
| 20 | 9:00- 9:30 | 74 | 48 | 36 | 13 | 5 | 1 |
| | 9:30-10:00 | 14 | 10 | 29 | 8 | 9 | 1 |
| 22 | 9:00- 9:30 | 21 | 7 | 33 | 12 | 1 | |
| | 9:30-10:00 | 3 | 4 | 55 | 23 | | |
| 25 | 9:00- 9:30 | 8 | | 29 | 10 | 6 | 4 |
| | 9:30-10:00 | 4 | 3 | 31 | 7 | 4 | |
| | 10:00-10:30 | 1 | 7 | 18 | 4 | 2 | |
| 27 | 9:00- 9:30 | | | 7 | | | 3 |
| | 9:30-10:00 | | | 5 | | 1 | |
| 28 | 8:30- 9:00 | 1 | 3 | | | | |
| | 9:00- 9:30 | 23 | 25 | 17 | 13 | | 28 |
| | 9:30-10:00 | 4 | 8 | 6 | 4 | | 12 |
| | 10:00-10:30 | 1 | 6 | 16 | 8 | 3 | 4 |
| July 5 | 8:30- 9:00 | 2 | 3 | | 6 | 1 | 2 |
| | 9:00- 9:30 | 4 | 4 | 23 | 11 | 6 | 13 |
| | 9:30-10:00 | 3 | 2 | 23 | 4 | 2 | 6 |
| | 10:00-10:30 | 2 | 2 | 16 | 4 | 4 | 9 |
| | 10:30-11:00 | | | 24 | 6 | 1 | 5 |
| 13 | 8:30- 9:00 | 10 | 7 | 1 | 3 | 1 | 14 |
| | 9:00- 9:30 | 5 | 9 | 4 | 1 | 4 | 56 |
| | 9:30-10:00 | 6 | 1 | 5 | 2 | 3 | 34 |
| | 10:00-10:30 | 2 | 1 | 5 | 2 | 3 | 14 |
| | 10:30-10:45 | | | 6 | 3 | | 3 |
| 15 | 8:30- 9:00 | 1 | 10 | | 10 | 3 | 5 |
| | 9:00- 9:30 | 13 | 3 | 21 | 2 | 14 | 38 |
| | 9:30-10:00 | | | 14 | 1 | 16 | 4 |
| | 10:00-10:30 | | | 6 | 1 | 9 | 2 |
| 21 | 8:30- 9:00 | 1 | 1 | 2 | 7 | 7 | 3 |
| | 9:00- 9:30 | 1 | | 20 | | 6 | 5 |
| | 9:30-10:00 | | | 14 | 7 | 7 | |
| | 10:00-10:30 | | | 22 | 4 | 2 | 1 |
| 23 | 8:00- 8:30 | 1 | | | 2 | 3 | |
| | 8:30- 9:00 | | | | 3 | 1 | |
| | 9:00- 9:30 | 1 | 2 | 11 | 1 | 3 | 2 |
| | 9:30-10:00 | | | 3 | 2 | 6 | |
| 26 | 8:30- 9:00 | 2 | 2 | 1 | 4 | 4 | |
| | 9:00- 9:30 | 3 | | 16 | 5 | 24 | 8 |
| | 9:30-10:00 | 2 | 1 | 12 | 4 | 13 | |
| | 10:00-10:30 | | 1 | 4 | 5 | 6 | |
| Aug 2 | 8:30- 9:00 | 1 | 1 | 1 | | 1 | |
| | 9:00- 9:30 | | | 15 | | 6 | 3 |
| | 9:30-10:00 | | | 4 | 1 | 5 | 1 |
| | 10:00-10:30 | | | 3 | | | |
| | 10:30-11:00 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 8:30- 9:00 | | 2 | 2 | 2 | 1 | |
| | 9:00- 9:30 | | | 4 | | 8 | 4 |
| | 9:30-10:00 | | | 2 | | 3 | 6 |
| | 10:00-10:30 | | | 5 | | | 3 |
| | 10:30-11:00 | | | 3 | | | 2 |
| 9 | 8:30- 9:00 | 2 | 1 | 3 | | 4 | 9 |
| | 9:00- 9:30 | | | 8 | 1 | 1 | |
| | 9:30-10:00 | | | 7 | 3 | 3 | 1 |
| | 10:00-10:30 | 1 | 1 | 1 | | 2 | 2 |
| 11 | 8:30- 9:00 | | 3 | 6 | | 1 | 3 |
| | 9:00- 9:30 | | | 2 | | | 2 |
| | 9:30-10:00 | 1 | 1 | 7 | | | 1 |
| | 10:00-10:30 | | | 2 | | | |

Table 27. Total Number of Adult Mosquitoes Taken per Month During Biting Counts at North River, 1971.

| Species | | June | July | August | Three Month Total |
|---|---|---|---|---|---|
| Aedes | sollicitans | 195 | 59 | 5 | 259 |
| Aedes | taemiorhynchus | 222 | 49 | 9 | 280 |
| Anopheles | atropos | 442 | 253 | 75 | 770 |
| Anopheles | bradleyi | 162 | 100 | 7 | 269 |
| Culex | salinarius | 86 | 161 | 35 | 282 |
| Total for Each Month | | 1,107 | 622 | 131 | 1,860 |

Relative Species Abundance %

| Species | | | Temporary Pool Breeders Aedes | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 13.9 | | |
| Aedes | taeniorhynchus | 15.0 | | |
| Anopheles | atropos | 41.4 | | |
| Anopheles | bradleyi | 14.5 | 28.9 | 71.1 |
| Culex | salinarius | 15.2 | | |
| Total | | 100.0 | | |

Table 28. Mean Number of Adults Taken per Light Trap Night per Week at the Williston Light Trap, 1970.

| Date Light Trap week | No. of nights light trap in operation | *Aedes sollicitans* | *Aedes taeniorhynchus* | *Anopheles atropos* | *Anopheles bradleyi* | *Culex salinarius* | *Psorophora confinnis* |
|---|---|---|---|---|---|---|---|
| Aug. 5-11 | 6 | 32 | 8 | 121 | 7 | 4 | 1 |
| 12-18 | 7 | 42 | 15 | 162 | 32 | 4 | 0.3 |
| 19-25 | 6 | 62 | 17 | 185 | 32 | 2 | 6 |
| 26-Sep 1 | 3 | 20 | 28 | 100 | 27 | 1 | 5 |
| 2- 8 | 5 | 20 | 18 | 83 | 7 | 2 | 1 |
| 9-15 | 6 | 6 | 7 | 23 | 20 | 7 | 2 |
| 16-22 | 6 | 15 | 7 | 29 | 10 | 1 | 2 |
| 23-29 | 6 | 10 | 8 | 32 | 2 | 0.8 | 0.5 |
| 30-Oct 6 | 2 | 0 | 2 | 3 | 0 | 0.5 | 0 |
| 7-13 | 2 | 0 | 0.5 | 11 | 0 | 0 | 0 |
| 14-20 | 3 | 1 | 0 | 4 | 0.67 | 0 | 0 |
| 21-27 | 1 | 13 | 7 | 35 | 0.5 | 6 | 0 |
| 28-Nov 3 | 0 | - | - | - | - | - | - |

Table 29. Total Number of Adults Taken per Month From the Williston Light Trap, 1970.

| Species | | August | September | October | Three Month Total |
|---|---|---|---|---|---|
| Aedes | sollicitans | 920 | 276 | 17 | 1,213 |
| Aedes | taeniorhynchus | 340 | 222 | 12 | 574 |
| Psorophora | confinnis | 62 | 30 | 0 | 92 |
| Anopheles | atropos | 3,273 | 921 | 73 | 4,267 |
| Anopheles | bradleyi | 532 | 228 | 4 | 764 |
| Culex | salinarius | 71 | 60 | 7 | 138 |
| Total for Each Month | | 5,198 | 1,737 | 113 | 7,048 |

Relative Species Abundance %

| Species | | | Temporary Pool Breeders Aedes and Psorophora | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 17.2 | | |
| Aedes | taeniorhynchus | 8.2 | | |
| Psorophora | confinnis | 1.3 | 26.7 | 73.3 |
| Anopheles | atropos | 60.5 | | |
| Anopheles | bradleyi | 10.8 | | |
| Culex | salinarius | 2.0 | | |
| Total | | 100.0 | | |

Table 30. Mean Number of Adult Mosquitoes Taken per Light Trap Night per Week at the Williston Light Trap, 1971.

| Date Light trap week | No. of nights Light trap in operation | Aedes sollicitans | Aedes taeniorhynchus | Anopheles atropos | Anopheles bradleyi | Culex salinarius | Psorophora confinnis |
|---|---|---|---|---|---|---|---|
| Feb 25-Mar 3 | 3 | | | | | | |
| 4-10 | 7 | | | | | | |
| 11-17 | 7 | | | | 0.14 | | |
| 18-24 | 7 | | | | | | |
| 25-31 | 7 | | | | 0.14 | | |
| Apr 1- 7 | 7 | | | | | | |
| 8-14 | 7 | | | | 0.57 | | |
| 15-21 | 7 | 0.14 | | 1.00 | 2.00 | | |
| 22-28 | 7 | 0.43 | | 0.14 | 0.43 | | |
| 29-May 5 | 7 | 0.28 | | 1.00 | 1.70 | | |
| 6-12 | 7 | 0.14 | | 0.14 | 4.30 | | |
| 13-19 | 7 | 0.14 | | 0.71 | 5.00 | 0.28 | |
| 20-26 | 7 | 0.43 | 0.14 | 0.43 | 7.00 | 0.43 | |
| 27-Jun 2 | 7 | 1.00 | 1.00 | 4.00 | 19.40 | 7.00 | 0.71 |
| 3- 9 | 7 | 2.00 | 1.70 | 3.30 | 8.30 | 1.70 | |
| 10-16 | 7 | 1.00 | 0.14 | 0.85 | 1.70 | 1.00 | |
| 17-23 | 7 | | | | | | |
| 24-30 | 7 | 6.00 | 3.60 | 27.30 | 21.00 | 2.60 | 0.28 |
| Jul 1- 7 | 7 | 10.70 | 8.00 | 26.50 | 44.00 | 17.00 | 2.00 |
| 8-14 | 7 | 3.40 | 6.00 | 25.50 | 24.20 | 18.10 | 4.00 |
| 15-21 | 7 | 10.00 | 9.20 | 51.00 | 17.00 | 18.20 | 0.57 |
| 22-28 | 7 | 7.70 | 6.00 | 61.40 | 18.00 | 19.00 | 2.43 |
| 29-Aug 4 | 7 | 5.70 | 7.00 | 25.40 | 18.40 | 16.10 | 1.40 |
| 5-11 | 7 | 15.40 | 4.70 | 8.00 | 13.20 | 9.40 | 1.40 |
| 12-18 | 5 | 15.40 | 1.20 | 7.00 | 12.20 | 4.50 | |

Table 31. Total Number of Adult Mosquitoes Taken per Month from Williston Light Trap, 1971.

| Species | | March | April | May | June | July | August | September* | October* | Six Month Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Aedes | sollicitans | 0 | 4 | 11 | 68 | 249 | 200 | | | 532 |
| Aedes | taeniorhynchus | 0 | 0 | 10 | 38 | 235 | 57 | | | 340 |
| Aedes | atlanticus | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 |
| Psorophora | confinnis | 0 | 0 | 5 | 2 | 75 | 24 | | | 106 |
| Anopheles | atropos | 0 | 14 | 32 | 227 | 1,265 | 172 | | | 1,710 |
| Anopheles | bradleyi | 2 | 25 | 238 | 234 | 777 | 227 | | | 1,503 |
| Culex | salinarius | 1 | 8 | 25 | 38 | 594 | 122 | | | 788 |
| Total for Each Month | | 3 | 51 | 321 | 607 | 3,195 | 802 | | | 4,979 |

Relative Species Abundance %

| Species | | | Temporary Pool Breeders Aedes and Psorophora | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 10.7 | | |
| Aedes | taeniorhynchus | 6.8 | | |
| Aedes | atlanticus | 0.0 | | |
| Psorophora | confinnis | 2.1 | 19.6 | 80.4 |
| Anopheles | atropos | 34.4 | | |
| Anopheles | bradleyi | 30.2 | | |
| Culex | salinarius | 15.8 | | |
| Total | | 100.0 | | |

*Light trap not in operation during these months

Table 32. Mean Number of Adult Mosquitoes Taken per Light Trap Night per Week at the Davis Light Trap, 1972.

| Date Light trap week | No. of nights Light trap in operation | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Anopheles atropos | Anopheles bradleyi | Culex salinarius | Psorophora confinnis |
|---|---|---|---|---|---|---|---|---|
| Feb. 25-Mar 3 | 7 | | | | | | | |
| 4-10 | 7 | | | | | | | |
| 11-17 | 7 | | | | 0.57 | 0.57 | 0.70 | |
| 18-24 | 5 | | | | | 0.20 | 0.80 | |
| 25-31 | 5 | | | | 0.28 | 0.57 | 0.28 | |
| Apr. 1- 7 | 6 | | | | | 0.66 | 0.16 | |
| 8-14 | 7 | | | | 0.14 | | 0.43 | |
| 15-21 | 7 | 0.43 | | | | | | |
| 22-28 | 7 | | | | 0.14 | 1.10 | 3.30 | |
| 29-May 5 | 7 | 0.70 | | | 0.43 | 0.57 | 1.10 | |
| 6-12 | 7 | 0.59 | | | 0.28 | 0.85 | 1.30 | |
| 13-19 | 7 | 0.43 | 0.14 | | 0.70 | 0.14 | 1.10 | |
| 20-26 | 7 | 0.43 | 0.28 | | 0.28 | 3.30 | 4.30 | |
| 27-Jun 2 | 7 | | | | | | | |
| 3- 9 | 7 | 2.70 | 0.43 | | 0.28 | 1.70 | 10.50 | 10.40 |
| 10-16 | 7 | 27.00 | 8.30 | 12.40 | 9.00 | 25.00 | 10.70 | 49.00 |
| 17-23 | 7 | 13.70 | 7.40 | 1.70 | 10.80 | 16.50 | 5.60 | 13.50 |
| 24-30 | 7 | 2.70 | 1.40 | | 4.10 | 4.30 | 1.00 | 0.28 |
| July 1- 7 | 7 | 4.00 | 4.70 | 2.00 | 4.10 | 15.30 | 1.50 | 0.43 |
| 8-14 | 7 | 5.00 | 6.00 | 2.00 | 2.00 | 8.70 | 2.30 | 2.00 |
| 15-21 | 7 | 0.57 | 1.50 | 0.43 | 0.28 | 0.70 | 2.40 | 0.28 |
| 22-28 | 7 | 16.00 | 5.40 | 3.10 | | 2.00 | 1.40 | 9.40 |
| 29-Aug 4 | 7 | 2.30 | 3.00 | 0.43 | | 0.43 | | 2.70 |
| 5-11 | 7 | 6.30 | 4.30 | 1.00 | 1.10 | 2.50 | 0.70 | 4.00 |
| 12-18 | 7 | 30.00 | 64.00 | 2.10 | 6.00 | 14.30 | 2.00 | 18.40 |
| 19-25 | 7 | 15.00 | 20.00 | 0.28 | 9.00 | 14.00 | 1.30 | 2.70 |
| 26-Sep 1 | 7 | 12.70 | 33.00 | 0.28 | 10.50 | 2.60 | 2.00 | 2.00 |

Table 32. (Continued)

| Date Light trap week | No. of nights light trap in operation | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Anopheles atropos | Anopheles bradleyi | Culex salinarius | Psorophora confinnis |
|---|---|---|---|---|---|---|---|---|
| Sep 2- 8 | 7 | 30.00 | 54.00 | | 6.00 | 14.30 | 0.28 | 0.28 |
| 9-15 | 7 | 10.00 | 12.00 | | 6.00 | 16.00 | 3.70 | |
| 16-22 | 7 | 27.00 | 62.00 | | 39.00 | 29.00 | 3.30 | 1.40 |
| 23-29 | | | | | | | | |
| 30-Oct 6 | | | | | | | | |
| 7-13 | | | | | | | | |
| 14-20 | | | | | | | | |
| 21-27 | | | | | | | | |
| 28-Nov 3 | | | | | | | | |

Table 33. Total Number of Adult Mosquitoes Taken per Month at the Davis Light Trap, 1972.

| Species | | March | April | May | June | July | August | September | October | Eight Month Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Aedes | sollicitans | 0 | 3 | 15 | 340 | 167 | 646 | 445 | 76 | 1,692 |
| Aedes | taeniorhynchus | 0 | 0 | 3 | 156 | 110 | 1,169 | 1,066 | 327 | 2,831 |
| Aedes | atlanticus | 0 | 0 | 0 | 112 | 42 | 26 | 4 | 1 | 185 |
| Psorophora | confinnis | 0 | 0 | 0 | 515 | 100 | 191 | 15 | 2 | 823 |
| Anopheles | atropos | 6 | 2 | 12 | 198 | 16 | 216 | 500 | 99 | 1,049 |
| Anopheles | bradleyi | 9 | 12 | 34 | 439 | 82 | 488 | 469 | 134 | 1,667 |
| Culex | salinarius | 11 | 27 | 55 | 196 | 43 | 41 | 59 | 21 | 453 |
| Total for Each Month | | 26 | 44 | 119 | 1,956 | 560 | 2,777 | 2,594 | 660 | 8,700 |

Relative Species Abundance %

| Species | | | Temporary Pool Breeders Aedes and Psorophora | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 19.4 | | |
| Aedes | taeniorhynchus | 32.5 | | |
| Aedes | atlanticus | 2.1 | | |
| Psorophora | confinnis | 9.5 | 63.5 | 36.5 |
| Anopheles | atropos | 12.1 | | |
| Anopheles | bradleyi | 19.2 | | |
| Culex | salinarius | 5.2 | | |
| Total | | 100.0 | | |

Table 34. Total Number of Adult Mosquitoes Taken per Thirty Minute Interval During Biting Counts at Davis, 1972.

| Date | Time (P.M.) of count | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Anopheles atropos | Anopheles bradleyi | Culex sal. | Psoro. con. |
|---|---|---|---|---|---|---|---|---|
| June 2 | 8:00- 8:30 | 1 | | | | | | |
| | 8:30- 9:00 | 1 | 1 | 1 | | 2 | | |
| | 9:00- 9:30 | 2 | 2 | | 1 | 9 | | |
| | 9:30-10:00 | | | | | | | |
| June 5 | 8:00- 8:30 | 1 | 1 | 19 | | | | 1 |
| | 8:30- 9:00 | | 2 | 3 | | 4 | 1 | |
| | 9:00- 9:30 | | 4 | 2 | 5 | 13 | | 1 |
| | 9:30-10:00 | | | | | | | |
| June 9 | 8:00- 8:30 | | 1 | | | | | |
| | 8:30- 9:00 | | | | | | | |
| June 12 | 8:00- 8:30 | | | 4 | | | | |
| | 8:30- 9:00 | 1 | 1 | | | 1 | | |
| | 9:00- 9:30 | 1 | 1 | | 2 | 18 | | |
| | 9:30-10:00 | | | | | | | |
| June 16 | 8:00- 8:30 | | 1 | 7 | | | | 1 |
| | 8:30- 9:00 | 3 | 5 | 5 | | | | |
| | 9:00- 9:30 | 10 | 4 | 1 | 2 | 1 | | |
| | 9:30-10:00 | 2 | 1 | | 3 | | | |
| June 20 | 8:00- 8:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8:30- 9:00 | 1 | 1 | | | | | |
| | 9:00- 9:30 | 1 | 1 | | | | | |
| | 9:30-10:00 | | | | | | | |
| June 28 | 8:00- 8:30 | | 2 | 3 | | | | |
| | 8:30- 9:00 | 1 | 1 | 1 | | | | |
| | 9:00- 9:30 | 1 | 2 | | | 2 | | |
| | 9:30-10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 3 | 8:00- 8:30 | | | | | | | |
| | 8:30- 9:00 | 3 | | 1 | | | | |
| | 9:00- 9:30 | 10 | 6 | | 1 | | 1 | |
| | 9:30-10:00 | | | | | 1 | | |
| July 7 | 8:00- 8:30 | | 2 | | | | | |
| | 8:30- 9:00 | | | 2 | | | | |
| | 9:00- 9:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 9:30-10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 10 | 8:00- 8:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8:30- 9:00 | | 1 | 1 | | | 1 | |
| | 9:00- 9:30 | | | 1 | 2 | 2 | | |
| | 9:30-10:00 | | 4 | | | 2 | | |
| July 17 | 8:00- 8:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8:30- 9:00 | 4 | 20 | | 1 | | | |
| | 9:00- 9:30 | 12 | 23 | | 6 | | | 4 |
| | 9:30-10:00 | 12 | 4 | | 2 | | | |
| July 26 | 8:00- 8:30 | | 1 | 3 | | | | 1 |
| | 8:30- 9:00 | 2 | 7 | 1 | | 2 | | |
| | 9:00- 9:30 | 8 | 10 | | | | | |
| | 9:30-10:00 | 4 | 2 | | | 1 | | |
| Aug. 2 | 8:00- 8:30 | 1 | 2 | 4 | | | | |
| | 8:30- 9:00 | 4 | 22 | 7 | 1 | 2 | 1 | 1 |
| | 9:00- 9:30 | 2 | 7 | | 1 | 2 | | |
| | 9:30-10:00 | 1 | 4 | | | 7 | | 1 |
| | 10:00-10:30 | | | | 1 | 4 | | |
| Aug. 7 | 8:00- 8:30 | 1 | 7 | | | | | |
| | 8:30- 9:00 | 46 | 36 | | | 1 | | |
| | 9:00- 9:30 | 18 | 6 | 1 | | | | 2 |
| | 9:30-10:00 | 3 | 3 | | 4 | 5 | | |
| Aug. 14 | 8:00- 8:30 | 5 | 27 | 1 | | | | |
| | 8:30- 9:00 | 11 | 28 | | | | | |
| | 9:00- 9:30 | 4 | 15 | | | 16 | | |
| | 9:30-10:00 | 4 | 3 | | | 7 | | |

Table 34. (Continued)

| Date | Time (P. M.) of count | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Anopheles atropos | Anopheles bradleyi | Culex sal. | Psoro. con. |
|---|---|---|---|---|---|---|---|---|
| Aug 25 | 8:00- 8:30 | 3 | 60 | | 2 | | | |
| | 8:30- 9:00 | 1 | 45 | | 8 | 1 | | |
| | 9:00- 9:30 | | 27 | | 3 | | | |
| | 9:30-10:00 | 4 | 15 | | 2 | 2 | | |
| Aug 30 | 8:00- 8:30 | 25 | 54 | | 1 | 1 | | |
| | 8:30- 9:00 | 4 | 17 | | 9 | 1 | | |
| | 9:00- 9:30 | | 10 | | 6 | 2 | | |
| | 9:30-10:00 | | 1 | | 4 | 3 | | |
| Sep 8 | 7:30- 8:00 | | 4 | | | | | |
| | 8:00- 8:30 | 1 | 4 | | | 2 | | |
| | 8:30- 9:00 | | | | | 1 | | |
| Sep 12 | 7:30- 8:00 | 26 | 33 | 1 | | 1 | | |
| | 8:00- 8:30 | 7 | 20 | 1 | | | | |
| | 8:30- 9:00 | 8 | 7 | | 1 | 5 | | |
| Sep 26 | 7:00- 7:30 | 7 | 31 | | | | | |
| | 7:30- 8:00 | 3 | 22 | | | | | |
| | 8:00- 8:30 | 1 | 8 | | | | | |

Table 35. Total Number of Adult Mosquitoes Taken per Month During Biting Counts at Davis, 1972.

| Species | | June | July | August | September | Four Month Total |
|---|---|---|---|---|---|---|
| Aedes | sollicitans | 26 | 55 | 137 | 53 | 271 |
| Aedes | taeniorhynchus | 30 | 74 | 379 | 129 | 612 |
| Aedes | atlanticus | 45 | 9 | 13 | 2 | 69 |
| Psorophora | confinnis | 3 | 5 | 4 | 0 | 12 |
| Anopheles | atropos | 13 | 12 | 42 | 1 | 68 |
| Anopheles | bradleyi | 51 | 8 | 54 | 9 | 122 |
| Culex | salinarius | 1 | 2 | 1 | 0 | 4 |
| Total for Each Month | | 169 | 165 | 630 | 194 | 1,158 |

Relative Species Abundance %

| Species | | | Temporary Pool Breeders Aedes and Psorophora | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 23.4 | | |
| Aedes | taeniorhynchus | 52.8 | | |
| Aedes | atlanticus | 6.0 | | |
| Psorophora | confinnis | 1.0 | 83.2 | 16.8 |
| Anopheles | atropos | 5.9 | | |
| Anopheles | bradleyi | 10.5 | | |
| Culex | salinarius | 0.4 | | |
| Total | | 100.0 | | |

Table 36. Mean Number of Adult Mosquitoes Taken per Light Trap Night per Week From the Newport River Light Trap, 1972.

| Date Light trap week | No. of nights Light trap in operation | Aedes atlanticus | Anopheles atropos | Anopheles bradleyi | Culex salinarius |
|---|---|---|---|---|---|
| Feb. 25-Mar 3 | 3 | | 1.00 | 1.00 | 1.70 |
| 4-10 | 4 | | 0.50 | 0.25 | 0.50 |
| 11-17 | 7 | | | | 0.43 |
| 18-24 | 7 | | 0.28 | 0.43 | 1.60 |
| 25-31 | 7 | | 0.14 | 0.28 | 1.80 |
| Apr. 1- 7 | 7 | | 0.14 | | 0.43 |
| 8-14 | 7 | | 0.14 | 0.28 | 0.14 |
| 15-21 | 7 | | 0.28 | 0.14 | 0.43 |
| 22-28 | 7 | | | | 0.14 |
| 29-May 5 | 7 | | | 0.14 | 0.43 |
| 6-12 | 7 | | 0.14 | 0.14 | |
| 13-19 | 7 | | | | |
| 20-26 | 7 | 0.28 | | 0.14 | 0.28 |
| 27-Jun 2 | 7 | | | | |
| 3- 9 | 6 | 0.17 | | 0.83 | 1.00 |
| 10-16 | 5 | | | | |
| 17-23 | 5 | | | | |
| 24-30 | 7 | | | | |
| July 1- 7 | 6 | | | | |
| 8-14 | | | | | |
| 15-21 | 3 | | | | |
| 22-28 | 2 | | | | |
| 29-Aug 4 | | | | | |
| 5-11 | 7 | | | | |
| 12-18 | 7 | | 0.14 | 0.14 | |
| 19-25 | 7 | | | | |
| 26-Sep 1 | 6 | | | | |

Table 36. (Continued)

| Date Light trap week | No. of nights Light trap in operation | *Aedes atlanticus* | *Anopheles atropos* | *Anopheles bradleyi* | *Culex salinarius* |
|---|---|---|---|---|---|
| Sep 2- 8 | 6 | | 0.33 | | |
| 9-15 | | | | | |
| 16-22 | | | | | |
| 23-29 | | | | | |
| 30-Oct 6 | | | | | |
| 7-13 | | | | | |
| 14-20 | | | | | |
| 21-27 | | | | | |
| 28-Nov 3 | | | | | |

Table 37. Total Number of Adult Mosquitoes Taken per Month From the Newport River Light Trap, 1972.

| Species | | March | April | May | June | July | August | September | October | Eight Month Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Aedes | sollicitans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aedes | taeniorhynchus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Aedes | atlanticus | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| Psorophora | confinnis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Anopheles | atropos | 5 | 4 | 3 | 1 | 0 | 0 | 3 | 0 | 16 |
| Anopheles | bradleyi | 4 | 5 | 4 | 7 | 0 | 0 | 1 | 1 | 22 |
| Culex | salinarius | 7 | 31 | 8 | 8 | 0 | 0 | 0 | 0 | 54 |
| Total for Each Month | | 16 | 40 | 15 | 19 | 0 | 0 | 4 | 4 | 98 |

Relative Species Abundance %

| Species | | | Temporary Pool Breeders Aedes and Psorophora | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 0.0 | | |
| Aedes | taeniorhynchus | 2.1 | | |
| Aedes | atlanticus | 3.0 | | |
| Psorophora | confinnis | 1.0 | 6.1 | 93.9 |
| Anopheles | atropos | 16.3 | | |
| Anopheles | bradleyi | 22.5 | | |
| Culex | salinarius | 55.1 | | |
| Total | | 100.0 | | |

Table 38. Total Number of Adult Mosquitoes Taken per Thirty Minute Interval During Biting Counts at Newport River, 1972.

| Date | Time (P.M.) of count | Aedes sollicitans | Aedes taeniorhynchus | Aedes atlanticus | Anopheles atropos | Anopheles bradleyi | Culex sal. | Psoro. con. |
|---|---|---|---|---|---|---|---|---|
| June 11 | 8:00- 8:30 | | | | | | | 1 |
| | 8:30- 9:00 | 4 | 1 | | 5 | 8 | 15 | 1 |
| | 9:00- 9:30 | 1 | | | 4 | 6 | 15 | |
| June 6 | 8:00- 8:30 | | | 1 | | | | |
| | 8:30- 9:00 | | 2 | 2 | 1 | 3 | 6 | |
| | 9:00- 9:30 | 1 | 2 | | | 7 | 19 | 2 |
| | 9:30-10:00 | | | | | 3 | 5 | 1 |
| June 12 | 8:30- 9:00 | 1 | | | | 19 | 8 | 1 |
| | 9:00- 9:30 | | | 1 | | 21 | 21 | 1 |
| June 15 | 7:30- 8:00 | | | 1 | | | | |
| | 8:00- 8:30 | | 1 | 7 | | | 1 | |
| | 8:30- 9:00 | | 8 | 14 | | | 2 | |
| | 9:00- 9:30 | | 2 | 1 | | 3 | 3 | |
| | 9:30-10:00 | | 2 | | | 4 | | |
| July 8 | 8:00- 8:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8:30- 9:00 | | 3 | | | | | |
| | 9:00- 9:30 | 1 | | | | | 4 | |
| | 9:30-10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 18 | 8:00- 8:30 | | | | | | | |
| | 8:30- 9:00 | 2 | 4 | | | 1 | 4 | |
| | 9:00- 9:30 | 3 | 6 | | | 3 | 3 | 1 |
| July 31 | 8:00- 8:30 | 1 | 10 | | | | 1 | 2 |
| | 8:30- 9:00 | | | | | | 1 | |
| Aug 3 | 8:00- 8:30 | | | 1 | | | | |
| | 8:30- 9:00 | 1 | 11 | 2 | | 1 | | |
| | 9:00- 9:30 | 2 | 4 | 1 | | 4 | 4 | |
| | 9:30-10:00 | | 3 | | | 5 | | 1 |
| Aug 12 | 8:00- 8:30 | 8 | 2 | | | | | |
| | 8:30- 9:00 | 17 | 6 | | | 1 | 2 | |
| | 9:00- 9:30 | 4 | 1 | | 1 | 6 | 1 | |
| | 9:30-10:30 | 7 | 2 | | 5 | 10 | 5 | 1 |
| Aug 24 | 8:00- 8:30 | 2 | 8 | | 1 | 2 | 1 | |
| | 8:30- 9:00 | | | | 3 | 2 | 2 | |
| | 9:00- 9:30 | | 1 | | | 3 | | |
| Sep 2 | 7:30- 8:00 | | | | | 1 | 3 | 1 |
| | 8:00- 8:30 | | | | | | 7 | 4 |
| | 8:30- 9:00 | | | | 4 | | 2 | |
| Sep 11 | 7:30- 8:00 | 6 | 10 | 10 | | 2 | 1 | |
| | 8:00- 8:30 | 3 | 1 | | | 1 | 4 | |
| | 8:30- 9:00 | | | | 4 | 11 | 3 | 1 |
| Sep 26 | 7:00- 7:30 | 6 | | 11 | | | | |
| | 7:30- 8:00 | | 3 | 6 | | | 1 | |
| | 8:00- 8:30 | | | | 3 | 5 | 3 | |

Table 39. Total Number of Adult Mosquitoes Taken During Biting Counts per Month at Newport River, 1972.

| Species | | June | July | August | September | Four Month Total |
|---|---|---|---|---|---|---|
| Aedes | sollicitans | 7 | 7 | 41 | 16 | 71 |
| Aedes | taeniorhynchus | 18 | 23 | 38 | 14 | 93 |
| Aedes | atlanticus | 27 | 0 | 4 | 27 | 58 |
| Psorophora | confinnis | 7 | 3 | 2 | 6 | 18 |
| Anopheles | atropos | 10 | 0 | 10 | 11 | 31 |
| Anopheles | bradleyi | 70 | 4 | 34 | 20 | 128 |
| Culex | salinarius | 99 | 13 | 15 | 12 | 139 |
| Total for Each Month | | 238 | 50 | 144 | 106 | 538 |

| Species | | Relative Species Abundance % | Temporary Pool Breeders Aedes and Psorophora | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 13.2 | | |
| Aedes | taeniorhynchus | 17.3 | | |
| Aedes | atlanticus | 10.8 | | |
| Psorophora | confinnis | 3.3 | 44.6 | 55.4 |
| Anopheles | atropos | 5.8 | | |
| Anopheles | bradleyi | 23.8 | | |
| Culex | salinarius | 25.8 | | |
| Total | | 100.0 | | |

Table 40. Mean Number of Adult Mosquitoes Taken per Light Trap Night per Week at Atlantic Beach, N. C., 1972.

| Date Light trap week | No. of nights Light trap in operation | Aedes sollicitans | Aedes taeniorhynchus | Anopheles atropos | Anopheles bradleyi | Culex salinarius | Psorophora confinnis |
|---|---|---|---|---|---|---|---|
| Feb 25-Mar 3 | 7 | | | | | | |
| Mar 4-10 | 7 | | | | | | |
| 11-17 | 7 | | | | 0.28 | | |
| 18-24 | 7 | | | | | | |
| 25-31 | 7 | | | 0.14 | | | |
| Apr 1- 7 | 7 | | | | | 0.14 | |
| 8-14 | 7 | | | | | | |
| 15-21 | 7 | 0.14 | | | | | |
| 22-28 | 7 | | | | | | |
| 29-May 5 | 7 | | | | | | |
| 6-12 | 7 | | | | | | |
| 13-19 | 7 | | | | | | |
| 20-26 | 7 | | | | | | |
| 27-Jun 2 | 7 | 0.14 | | | | | |
| 3- 9 | 7 | 1.6 | | | | | |
| 10-16 | 7 | | | | | | |
| 17-23 | 7 | | | | | | |
| 24-30 | 7 | | 0.28 | | | 0.14 | |
| Jul 1- 7 | 7 | | | | | | |
| 8-14 | 7 | | 0.14 | | 0.14 | | |
| 15-21 | 7 | 0.43 | | 0.14 | | | |
| 22-28 | 7 | 0.14 | 0.14 | | | 0.14 | |
| 29-Aug 4 | 7 | 0.14 | 0.7 | 2.7 | | | |
| 5-11 | 7 | 1.1 | | 1.7 | | 0.14 | |
| 12-18 | 7 | 1.8 | 0.28 | 1.4 | 0.14 | | |
| 19-25 | 7 | 0.43 | 0.14 | 0.7 | | | |
| 26-Sep 1 | 7 | | 0.8 | 0.14 | | | |

Table 40. (Continued)

| Date Light trap week | No. of nights Light trap in operation | Aedes sollicitans | Aedes taeniorhynchus | Anopheles atropos | Anopheles bradleyi | Culex salinarius | Psorophora confinnis |
|---|---|---|---|---|---|---|---|
| Sep 2- 8 | 7 | 1.1 | 0.28 | 1.3 | 0.14 | 0.14 | |
| 9-15 | 7 | 0.7 | 0.14 | 1.8 | 1.4 | | |
| 16-22 | 7 | 0.14 | | 0.43 | 0.28 | 0.14 | |
| 23-29 | 7 | | 0.14 | | 0.14 | | |
| 30-Oct 6 | 7 | | | | | | |
| 7-13 | 7 | | | | | | |
| 14-20 | 7 | | | | | | |
| 21-27 | 7 | | | | | | |
| 28-Nov 3 | 7 | | | | | | |

Table 41. Total Number of Adult Mosquitoes Taken per Month at the Atlantic Beach Light Trap, 1972.

| Species | | March | April | May | June | July | August | September | October | Eight Month Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Aedes | sollicitans | 0 | 1 | 0 | 12 | 4 | 25 | 14 | 3 | 59 |
| Aedes | taeniorhynchus | 0 | 0 | 0 | 2 | 3 | 13 | 4 | 3 | 25 |
| Aedes | atlanticus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Psorophora | confinnis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Anopheles | atropos | 1 | 0 | 0 | 0 | | 45 | 25 | 0 | 72 |
| Anopheles | bradleyi | 3 | 0 | 0 | 0 | 1 | 1 | 14 | 2 | 21 |
| Culex | salinarius | 0 | 1 | 0 | 1 | 1 | 1 | 9 | 6 | 19 |
| Total for Each Month | | 4 | 2 | 0 | 15 | 10 | 85 | 66 | 14 | 196 |

Relative Species Abundance %

| Species | | | Temporary Pool Breeders Aedes and Psorophora | Permanent Pool Breeders Anopheles and Culex |
|---|---|---|---|---|
| Aedes | sollicitans | 30 | | |
| Aedes | taeniorhynchus | 13 | | |
| Aedes | atlanticus | 0 | | |
| Psorophora | confinnis | 0 | | |
| Anopheles | atropos | 37 | | |
| Anopheles | bradleyi | 11 | 43 | 57 |
| Culex | salinarius | 9 | | |
| Total | | 100 | | |

Table 42. Predicted / Relative Abundance Values for *Anopheles* - *Culex* and *Aedes* - *Psorophora* Species at Representative MS, FF, S.I. Values (Ditched Sites).

| MS (mean slope) | FF (frequency of flooding) | S.I. (Suit. Index) | *Anopheles* and *Culex* | *Aedes* and *Psorophora* |
|---|---|---|---|---|
| 0.05 | 5 | 1.0000 | 0.37 | 99.63 |
| 0.05 | 10 | 2.0000 | 35.85 | 64.15 |
| 0.05 | 15 | 3.0000 | 70.09 | 29.91 |
| 0.05 | 20 | 4.0000 | 95.43 | 4.57 |
| 0.05 | 25 | 5.0000 | 100.00 | 0.00 |
| 0.05 | 30 | 6.0000 | 100.00 | 0.00 |
| 0.05 | 35 | 7.0000 | 100.00 | 0.00 |
| 0.15 | 5 | 0.3333 | 0.23 | 99.77 |
| 0.15 | 10 | 0.6667 | 15.11 | 84.89 |
| 0.15 | 15 | 1.0000 | 32.52 | 67.48 |
| 0.15 | 20 | 1.3333 | 46.93 | 53.07 |
| 0.15 | 25 | 1.6667 | 59.37 | 40.63 |
| 0.15 | 30 | 2.0000 | 70.46 | 29.54 |
| 0.15 | 35 | 2.3333 | 80.45 | 19.55 |
| 0.25 | 5 | 0.2000 | 0.19 | 99.81 |
| 0.25 | 10 | 0.4000 | 13.35 | 86.65 |
| 0.25 | 15 | 0.6000 | 27.47 | 72.53 |
| 0.25 | 20 | 0.8000 | 38.40 | 61.60 |
| 0.25 | 25 | 1.0000 | 47.53 | 52.47 |
| 0.25 | 30 | 1.2000 | 55.57 | 44.43 |
| 0.25 | 35 | 1.4000 | 62.89 | 37.11 |
| 0.35 | 5 | 0.1429 | 0.05 | 99.95 |
| 0.35 | 10 | 0.2857 | 13.99 | 86.01 |
| 0.35 | 15 | 0.4286 | 27.16 | 72.84 |
| 0.35 | 20 | 0.5714 | 36.80 | 63.20 |
| 0.35 | 25 | 0.7143 | 44.52 | 55.48 |
| 0.35 | 30 | 0.8571 | 51.16 | 48.84 |
| 0.35 | 35 | 1.0000 | 57.10 | 42.90 |
| 0.45 | 5 | 0.1111 | 0.00 | 100.00 |
| 0.45 | 10 | 0.2222 | 15.48 | 84.52 |
| 0.45 | 15 | 0.3333 | 28.47 | 71.53 |
| 0.45 | 20 | 0.4444 | 37.53 | 62.47 |
| 0.45 | 25 | 0.5556 | 44.56 | 55.44 |
| 0.45 | 30 | 0.6667 | 50.44 | 49.56 |
| 0.45 | 35 | 0.7778 | 55.63 | 44.37 |
| 0.55 | 5 | 0.0909 | 0.12 | 99.88 |
| 0.55 | 10 | 0.1818 | 17.47 | 82.53 |
| 0.55 | 15 | 0.2727 | 30.58 | 69.42 |
| 0.55 | 20 | 0.3636 | 39.40 | 60 60 |
| 0.55 | 25 | 0.4545 | 46.04 | 53.96 |
| 0.55 | 30 | 0.5455 | 51.48 | 48.52 |
| 0.55 | 35 | 0.6364 | 56.18 | 43.82 |
| 0.65 | 5 | 0.0769 | 0.44 | 99.56 |
| 0.65 | 10 | 0.1538 | 19.81 | 80.19 |
| 0.65 | 15 | 0.2308 | 33.20 | 66.80 |
| 0.65 | 20 | 0.3077 | 41.92 | 58.08 |
| 0.65 | 25 | 0.3846 | 48.34 | 51.66 |
| 0.65 | 30 | 0.4615 | 53.50 | 46.50 |
| 0.65 | 35 | 0.5385 | 57.90 | 42.10 |
| 0.75 | 5 | 0.0667 | 0.97 | 99.03 |
| 0.75 | 10 | 0.1333 | 22.43 | 77.57 |
| 0.75 | 15 | 0.2000 | 36.17 | 63.83 |
| 0.75 | 20 | 0.2667 | 44.90 | 55.10 |
| 0.75 | 25 | 0.3333 | 51.19 | 48.81 |
| 0.75 | 30 | 0.4000 | 56.17 | 43.83 |
| 0.75 | 35 | 0.4667 | 60.35 | 39.65 |
| 0.85 | 5 | 0.0588 | 1.74 | 98.26 |
| 0.85 | 10 | 0.1176 | 25.29 | 74.71 |
| 0.85 | 15 | 0.1765 | 39.44 | 60.56 |
| 0.85 | 20 | 0.2353 | 48.21 | 51.79 |
| 0.85 | 25 | 0.2941 | 54.43 | 45.57 |
| 0.85 | 30 | 0.3529 | 59.28 | 40.72 |

Table 42 (Continued)

| MS (mean slope) | FF (frequency of flooding) | S.I. | Anopheles and Culex | Aedes and Psorophora |
|---|---|---|---|---|
| 0.85 | 35 | 0.4118 | 63.30 | 36.70 |
| 0.95 | 5 | 0.0526 | 2.73 | 97.27 |
| 0.95 | 10 | 0.1053 | 28.38 | 71.62 |
| 0.95 | 15 | 0.1579 | 42.94 | 57.06 |
| 0.95 | 20 | 0.2105 | 51.79 | 48.21 |
| 0.95 | 25 | 0.2632 | 57.97 | 42.03 |
| 0.95 | 30 | 0.3158 | 62.73 | 37.27 |
| 0.95 | 35 | 0.3684 | 66.63 | 33.37 |
| 1.05 | 5 | 0.0476 | 3.95 | 96.05 |
| 1.05 | 10 | 0.0952 | 31.67 | 68.33 |
| 1.05 | 15 | 0.1429 | 46.64 | 53.36 |
| 1.05 | 20 | 0.1905 | 5.58 | 44.42 |
| 1.05 | 25 | 0.2381 | 61.75 | 38.25 |
| 1.05 | 30 | 0.2857 | 66.44 | 33.56 |
| 1.05 | 35 | 0.3333 | 70.25 | 29.75 |
| 1.15 | 5 | 0.0435 | 5.39 | 94.61 |
| 1.15 | 10 | 0.0870 | 35.16 | 64.84 |
| 1.15 | 15 | 0.1304 | 50.53 | 49.47 |
| 1.15 | 20 | 0.1739 | 59.56 | 40.44 |
| 1.15 | 25 | 0.2174 | 65.72 | 34.28 |
| 1.15 | 30 | 0.2609 | 70.36 | 29.64 |
| 1.15 | 35 | 0.3043 | 74.10 | 25.90 |
| 1.25 | 5 | 0.0400 | 7.07 | 92.93 |
| 1.25 | 10 | 0.0800 | 38.81 | 61.19 |
| 1.25 | 15 | 0.1200 | 54.58 | 45.42 |
| 1.25 | 20 | 0.1600 | 63.71 | 36.29 |
| 1.25 | 25 | 0.2000 | 69.86 | 30.14 |
| 1.25 | 30 | 0.2400 | 74.46 | 25.54 |
| 1.25 | 35 | 0.2800 | 78.13 | 21.87 |

Table 43. Predicted % Relative Abundance Values for *Anopheles* - *Culex* and *Aedes* - *Psorophora* Species at Representative FOSW, NWET and S.I. Values (Unditched Sites).

| FOSW* | NWET* | S.I. | % *Anopheles* and *Culex* | % *Aedes* and *Psorophora* |
|---|---|---|---|---|
| 70 | 5 | 1.000 | 41.39 | 58.61 |
| 70 | 5 | 3.000 | 74.99 | 25.01 |
| 70 | 5 | 5.000 | 100.00 | 0.00 |
| 70 | 15 | 1.000 | 76.52 | 23.48 |
| 70 | 15 | 3.000 | 100.00 | 0.00 |
| 70 | 15 | 5.000 | 100.00 | 0.00 |
| 70 | 25 | 1.000 | 100.00 | 0.00 |
| 70 | 25 | 3.000 | 100.00 | 0.00 |
| 70 | 25 | 5.000 | 100.00 | 0.00 |
| 70 | 35 | 1.000 | 100.00 | 0.00 |
| 70 | 35 | 3.000 | 100.00 | 0.00 |
| 70 | 35 | 5.000 | 100.00 | 0.00 |
| 90 | 5 | 1.000 | 49.48 | 50.52 |
| 90 | 5 | 3.000 | 84.45 | 15.55 |
| 90 | 5 | 5.000 | 100.00 | 0.00 |
| 90 | 15 | 1.000 | 86.01 | 13.99 |
| 90 | 15 | 3.000 | 100.00 | 0.00 |
| 90 | 15 | 5.000 | 100.00 | 0.00 |
| 90 | 25 | 1.000 | 100.00 | 0.00 |
| 90 | 25 | 3.000 | 100.00 | 0.00 |
| 90 | 25 | 5.000 | 100.00 | 0.00 |
| 90 | 35 | 1.000 | 100.00 | 0.00 |
| 90 | 35 | 3.000 | 100.00 | 0.00 |
| 90 | 35 | 5.000 | 100.00 | 0.00 |

*FOSW Frequency of standing water
*NWET Number of days/wet period.

Table 44.

INCIDENCE OF CRABHOLE BREEDING

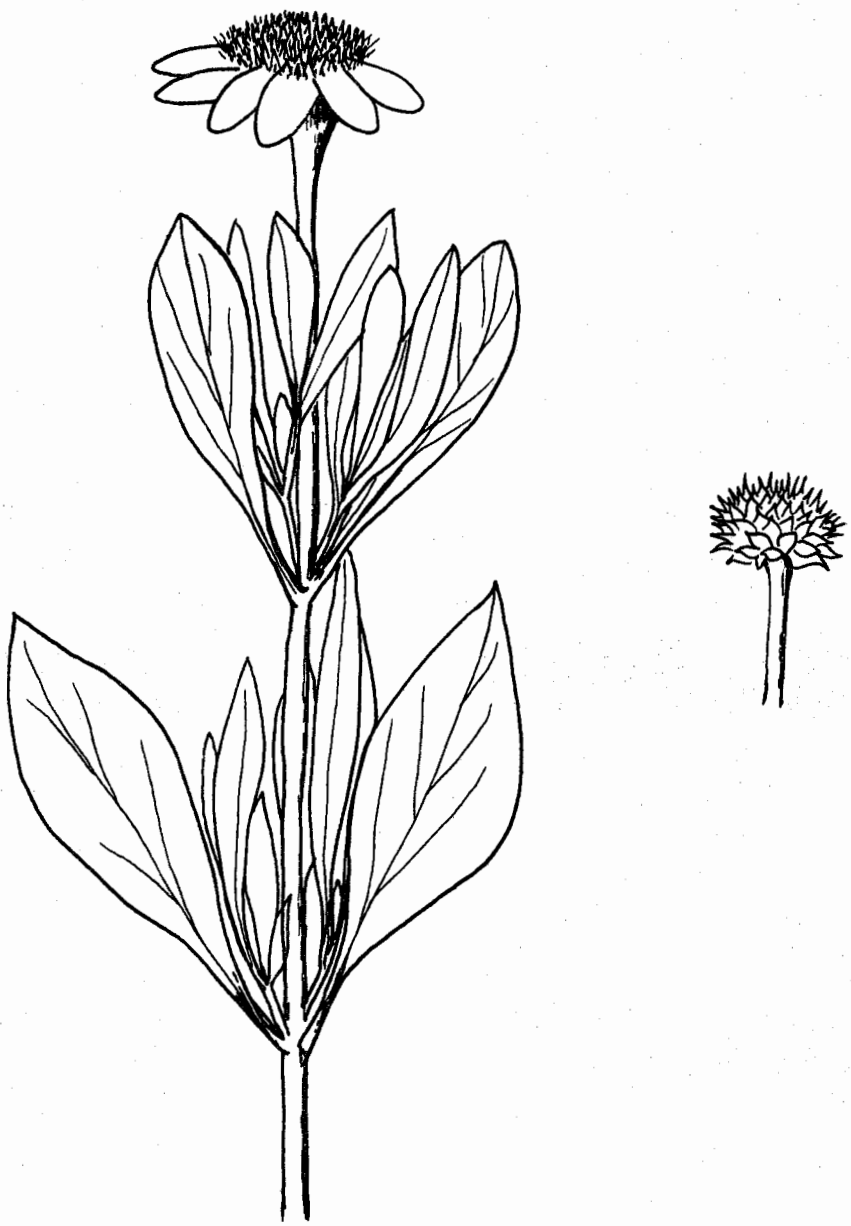
NORTH RIVER STUDY SITE, CARTERET CO., N. C.

| Site | No. of holes | Total No. Larvae & Pupae | | Total |
|---|---|---|---|---|
| | | Aedes | Anopheles | |
| 4 | 4 - 12 | 87 | 3 | 90 |
| 13 | 3 - 6 | 19 | 26 | 45 |
| 14 | 10 - 30 | 137 | 21 | 158 |
| 16 | 10 - 20 | 32 | 3 | 35 |
| 17 | 2 - 3 | 0 | 2 | 2 |
| 18 | 1 - 3 | 7 | 1 | 8 |
| 20 | 5 - 10 | 23 | 7 | 30 |
| 21 | 1 | 103 | 2 | 125 |
| 23 | 4 - 5 | 22 | 4 | 6 |
| 24 | 3 - 4 | 0 | 4 | 4 |
| | | | | 503 |

FIG. 1

BACCHARIS HALIMIFOLIA

FIG. 2

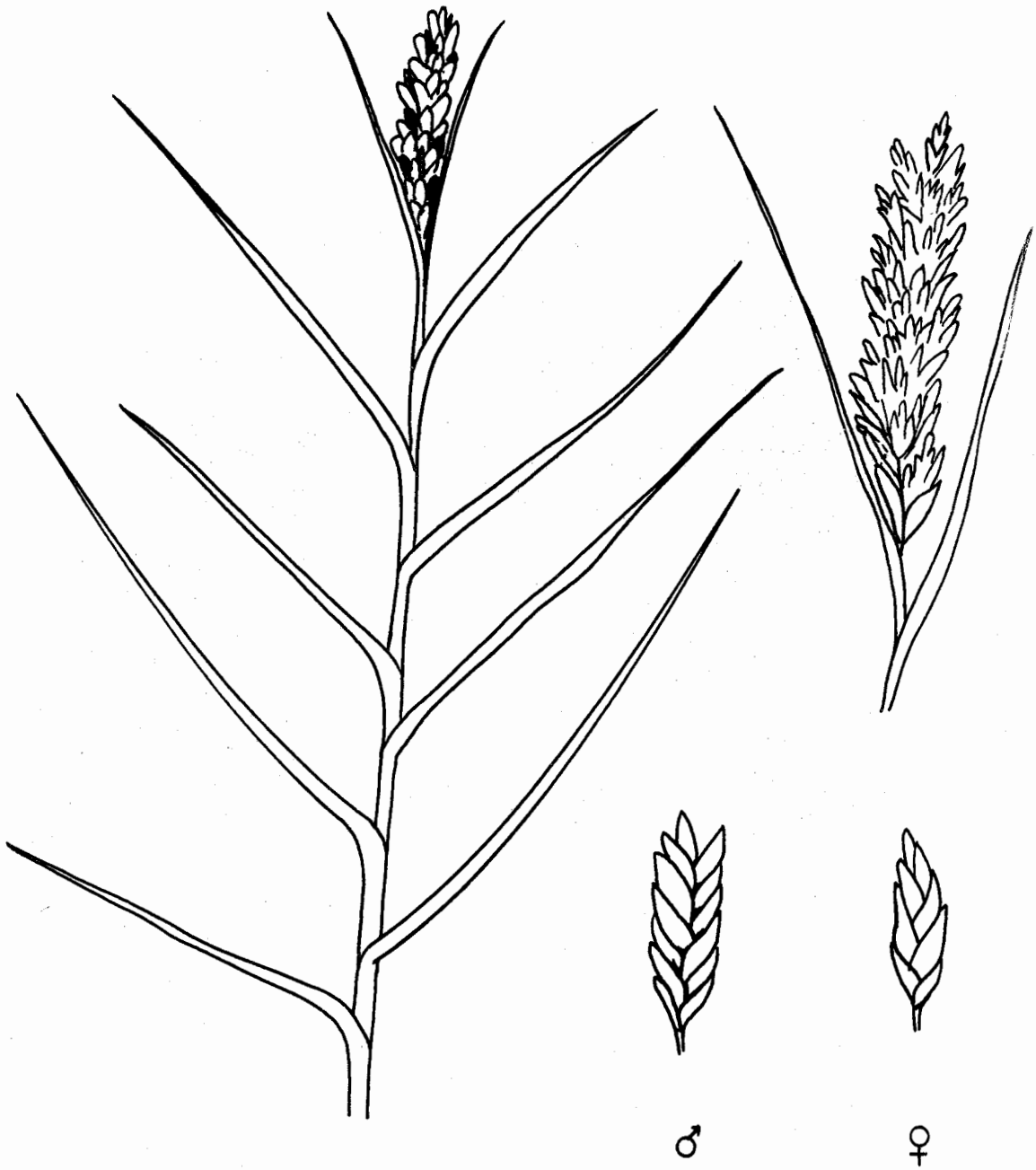


BORRICHIA FRUTESCENS

FIG. 3

CLADIUM JAMAICENSE

FIG. 4




DISTICHLIS SPICATA

FIG. 5

IVA IMBRICATA

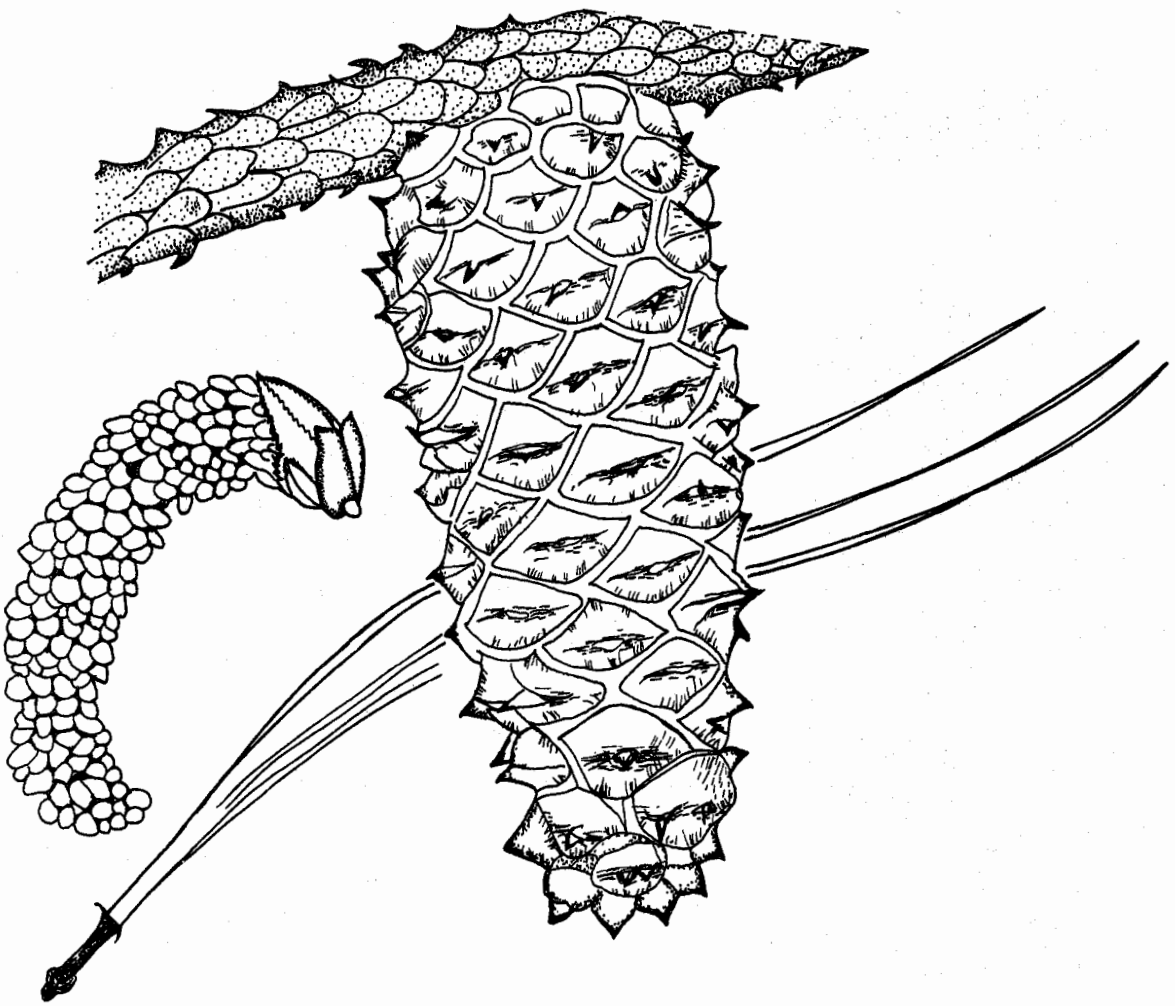
FIG. 6

JUNCUS ROEMERIANUS

FIG. 7

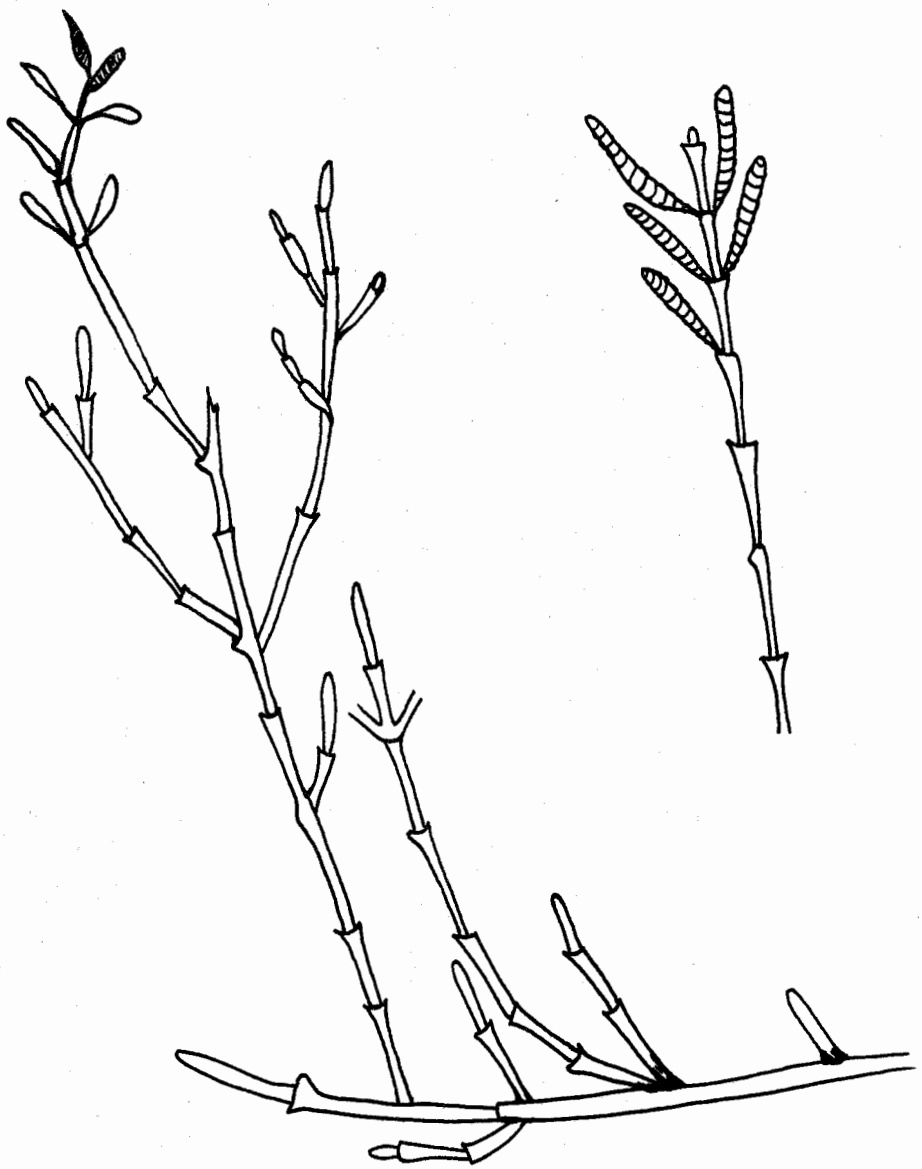
MYRICA CERIFERA

FIG. 8



PINUS TAEDA

FIG. 9

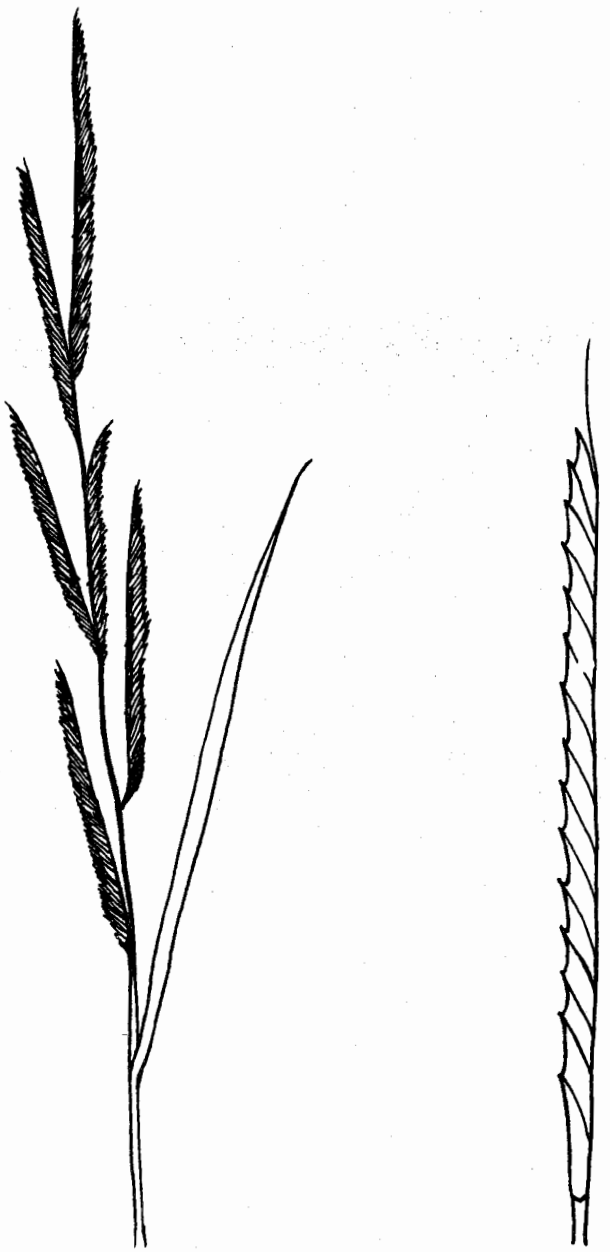


SALICORNIA VIRGINICA

FIG. 10

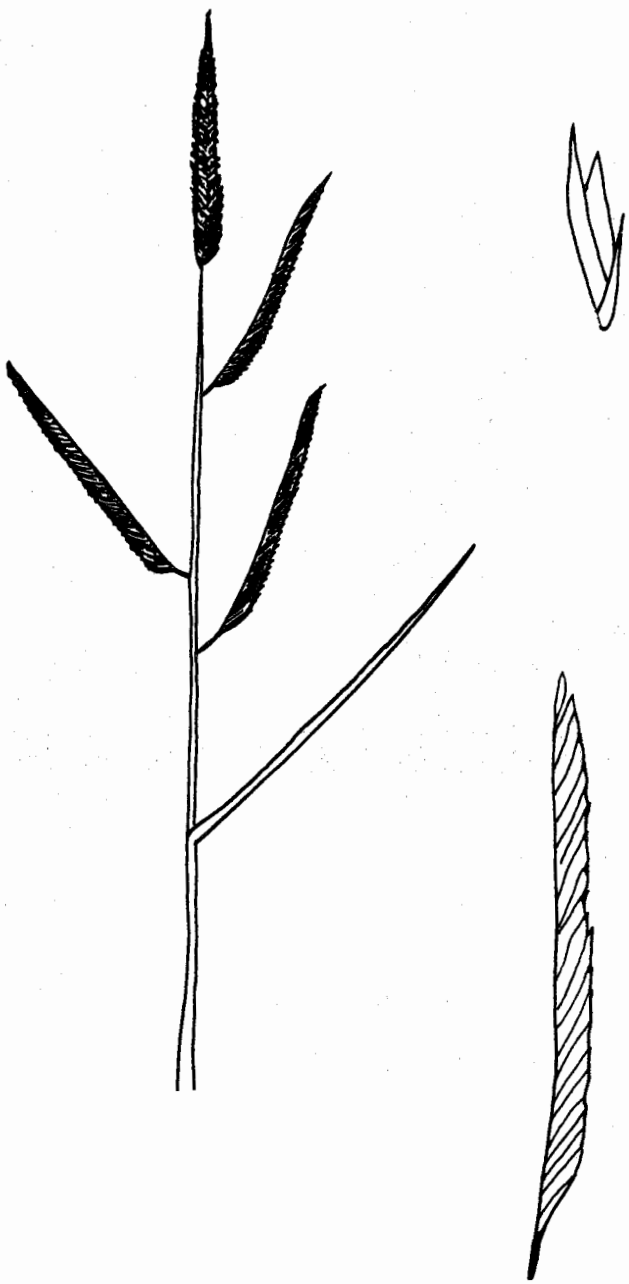
SCIRPUS ROBUSTUS

FIG. 11



SPARTINA ALTERNIFLORA

FIG. 12



SPARTINA PATENS