

**APPENDIX B**

**LSMEANS ESTIMATES FOR CHAPTER 6**

**Table B.1.** Comparison of organic soils on time of drainage.

| <b>Horizon</b>                                    | <b>Depth</b> | <b>Sand</b>     | <b>Silt</b> | <b>Clay</b> | <b>BD</b>             | <b>Porosity</b>                             | <b>PAW</b> |
|---|--------------|-----------------|-------------|-------------|-----------------------|---|------------|
|   | (cm)         | ----- (%) ----- |             |             | (g cm <sup>-3</sup> ) | --- (cm <sup>3</sup> cm <sup>-3</sup> ) --- |            |
| <b><u>0 Years of Agricultural Production</u></b>  |              |                 |             |             |                       |   |            |
| 1   | 19           | ---             | ---         | ---         | 0.17                  |   | 0.3029     |
| 2   | 48           | 40.5            | 43.7        | 16.2        | 0.29                  | 0.623                                       | 0.2896     |
| 3   | 88           | 44.4            | 41.8        | 13.6        | 0.35                  | 0.662                                       | 0.2639     |
| 4   | 122          | 55.7            | 32          | 12          | 0.64                  | 0.585                                       | 0.2679     |
| 5   | 148          | 53.5            | 33          | 12.9        | 0.74                  | 0.605                                       | 0.3167     |
| 6   | 171          | 63.8            | 24.8        | 11.2        | 0.96                  | 0.521                                       | 0.1931     |
| Error   | 5            | 11              | 7.5         | 4.7         | 0.13                  | 0.62  | 0.05       |
| <b><u>15 Years of Agricultural Production</u></b> |              |                 |             |             |                       |   |            |
| 1   | 15           | 59.6            | 41.5        | 29.3        | 0.61                  | 0.622                                       | 0.312      |
| 2   | 38           | 71.5            | 51.1        | 21.7        | 0.41                  | 0.525                                       | 0.525      |
| 3   | 67           | 78.4            | 21.5        | 15.6        | 0.6                   | 0.458                                       | 0.435      |
| 4   | 101          | 85.9            | 18.7        | 6.1         | 1.13                  | 0.445                                       | 0.277      |
| 5   | 106          | 83.9            | 14.2        | 4.5         | 1.82                  | 0.475                                       | 0.129      |
| 6   | 118          | ---             | 4.3         | ---         | ---                   | ---   | ---        |
| Error   | 9            | 30.4            | 14          | 12.5        | 0.23                  | 0.16  | 0.1        |
| <b><u>20 Years of Agricultural Production</u></b> |              |                 |             |             |                       |   |            |
| 1   | 13           | 60.1            | 31.9        | 21.2        | 0.8                   | 0.553                                       | 0.279      |
| 2   | 24           | 33.8            | 42.9        | 42.7        | 0.6                   | 0.664                                       | 0.472      |
| 3   | 47           | 36.4            | 54.1        | 43.4        | 0.4                   | 0.793                                       | 0.605      |
| 4   | 58           | 33.1            | 45.5        | 42.5        | 0.56                  | 0.747                                       | 0.533      |
| 5   | 68           | 64.9            | 19.7        | 17.2        | 0.75                  | 0.711                                       | 0.129      |
| 6   | 98           | 58.4            | 24.3        | 18.5        | 0.93                  | 0.633                                       | 0.429      |
| 7   | 115          | 70.1            | 17          | 14.9        | 0.93                  | 0.77  | 0.436      |
| 8   | 122          | ---             | ---         | ---         | ---                   | ---   | ---        |
| Error   | 10           | 24.5            | 17.7        | 9           | 0.25                  | 0.17  | 0.1        |
| <b><u>30 Years of Agricultural Production</u></b> |              |                 |             |             |                       |   |            |
| 1   | 18           | 52.7            | 17.6        | 28.7        | 0.68                  | 0.622                                       | 0.219      |
| 2   | 32           | 56.1            | 31.5        | 25.5        | 0.57                  | 0.712                                       | 0.385      |
| 3   | 47           | 56.6            | 44.1        | 43.4        | 0.44                  | 0.759                                       | 0.469      |
| 4   | 66           | 59.5            | 43.6        | 17.8        | 0.86                  | 0.681                                       | 0.464      |
| 5   | 87           | 64.5            | 23.2        | 13.8        | 1.14                  | 0.541                                       | 0.314      |
| 6   | 108          | 68.4            | 16.2        | 12.4        | 1.35                  | 0.466                                       | 0.286      |
| 7   | 123          | 60.1            | 19          | 21.1        | 1.65                  | 0.429                                       | 0.321      |
| 8   | 132          | 55.4            | 25          | 20.3        | 1.71                  | 0.406                                       | 0.322      |
| Error   | 7            | 15.9            | 10.7        | 7.3         | 0.21                  | 0.15  | 0.1        |

BD = Bulk Density and PAW = Plant Available Water

**Table B.2.** Comparison of histic soils on time of drainage.

| <b>Horizon</b>                                    | <b>Depth</b> | <b>Sand</b>     | <b>Silt</b> | <b>Clay</b> | <b>BD</b>             | <b>Porosity</b>                             | <b>PAW</b> |
|---|--------------|-----------------|-------------|-------------|-----------------------|---|------------|
|   | (cm)         | ----- (%) ----- |             |             | (g cm <sup>-3</sup> ) | --- (cm <sup>3</sup> cm <sup>-3</sup> ) --- |            |
| <b><u>0 Years of Agricultural Production</u></b>  |              |                 |             |             |                       |   |            |
| 1   | 16           | ---             | ---         | ---         | ---                   | ---   | 0.3684     |
| 2   | 32           | 72.9            | 20.01       | 7.2         | 0.6                   | 0.619                                       | 0.4385     |
| 3   | 56           | 85.9            | 10.9        | 3.2         | 0.61                  | 0.613                                       | 0.1827     |
| 4   | 83           | 91.1            | 5.72        | 2.8         | 0.47                  | 0.366                                       | 0.1871     |
| 5   | 119          | 92.9            | 4.74        | 2.8         | ---                   | ---   | 0.1753     |
| Error   |              | 5.3             | 4.89        | 3.7         | 0.11                  | 0.07  | 0.102      |
| <b><u>15 Years of Agricultural Production</u></b> |              |                 |             |             |                       |   |            |
| 1   | 17           | 70.8            | 24.3        | 5.6         | 0.88                  | 0.609                                       | 0.3358     |
| 2   | 29           | 67.6            | 15.97       | 21.2        | 0.79                  | 0.628                                       | 0.6577     |
| 3   | 50           | 70.6            | 10.77       | 21.5        | 1.42                  | 3493  | 0.4073     |
| 4   | 57           | 78.7            | 7.15        | 22          | 1.49                  | 0.468                                       | 0.3667     |
| 5   | 86           | 70.5            | 12.32       | 17.2        | 1.78                  | 0.374                                       | 0.1113     |
| 6   | 103          | 63.4            | 10.07       | 30.5        | 1.83                  | 0.445                                       | 0.2219     |
| Error   |              | 11.6            | 6.09        | 9.1         | 0.1                   | 0.07  | 0.14       |
| <b><u>20 Years of Agricultural Production</u></b> |              |                 |             |             |                       |   |            |
| 1   | 19           | 71              | 19.77       | 22.8        | 0.8                   | 0.713                                       | 0.2087     |
| 2   | 32           | 47.2            | 43.6        | 42.4        | 0.47                  | 0.605                                       | 0.4216     |
| 3   | 53           | 58.3            | 19.16       | 35.2        | 0.89                  | 0.625                                       | 0.4072     |
| 4   | 73           | 84.9            | 5.15        | 10.2        | 1.14                  | 0.5   | 0.5463     |
| 5   | 104          | 94.2            | 1.21        | 3.6         | 1.67                  | 0.271                                       | 0.3231     |
| 6   | 121          | 88.4            | 8.11        | 8.7         | 1.53                  | 0.361                                       | 0.2477     |
| Error   |              | 9.3             | 6.09        | 6.4         | 0.1                   | 0.07  | 0.14       |

BD = Bulk Density and PAW = Plant Available Water

**Table B.3.** Comparison of mineral soils on time of drainage.

| <b>Horizon</b>                                    | <b>Depth</b> | <b>Sand</b>     | <b>Silt</b> | <b>Clay</b> | <b>BD</b>             | <b>Porosity</b>                             | <b>PAW</b> |
|---|--------------|-----------------|-------------|-------------|-----------------------|---|------------|
|   | (cm)         | ----- (%) ----- |             |             | (g cm <sup>-3</sup> ) | --- (cm <sup>3</sup> cm <sup>-3</sup> ) --- |            |
| <b><u>0 Years of Agricultural Production</u></b>  |              |                 |             |             |                       |   |            |
| 1   | 10           | 82.7            | 12.4        | 4.1         | ---                   | ---   | 0.101      |
| 2   | 22           | 85.7            | 10.9        | 3.3         | ---                   | ---   | 0.1        |
| 3   | 52           | 96.4            | 2.3         | 1.2         | ---                   | ---   | 0.1        |
| 4   | 82           | 90.4            | 5.3         | 4.2         | ---                   | ---   | 0.1        |
| Error   |              | 2.6             | 3.2         | 0.8         | ---                   | ---   | 0.03       |
| <b><u>20 Years of Agricultural Production</u></b> |              |                 |             |             |                       |   |            |
| 1   | 12           | 93.6            | 10.9        | 4.3         | 1.22                  | 0.522                                       | 0.22       |
| 2   | 30           | 95.2            | 4.6         | 3.1         | 1.45                  | 0.424                                       | 0.178      |
| 3   | 49           | 95              | 2.5         | 2.8         | 1.54                  | 0.382                                       | 0.196      |
| 4   | 67           | 93              | 4.1         | 4           | 1.51                  | 0.408                                       | 0.226      |
| 5   | 85           | 94              | 1.6         | 3.9         | 1.57                  | 0.383                                       | 0.217      |
| 6   | 97           | 95.4            | 0.8         | 2.4         | 1.56                  | 0.375                                       | 0.196      |
| 7   | 120          | 95.6            | 0.9         | 2.5         | 1.56                  | 0.348                                       | 0.172      |
| Error   |              | 2.9             | 3.4         | 1.9         | 0.063                 | 0.42  | 0.02       |
| <b><u>30 Years of Agricultural Production</u></b> |              |                 |             |             |                       |   |            |
| 1   | 7            | 88.1            | 7.4         | 10.4        | 0.97                  | 0.441                                       | 0.231      |
| 2   | 23           | 91              | 6.8         | 7.2         | 1.18                  | 0.505                                       | 0.353      |
| 3   | 38           | 92.7            | 8.9         | 3.5         | 1.34                  | 0.594                                       | 0.333      |
| 4   | 57           | 93.4            | 0.9         | 3.5         | 1.45                  | 0.641                                       | 0.181      |
| 5   | 87           | 95              | 2           | 4.6         | 1.52                  | 0.603                                       | 0.238      |
| 6   | 105          | 95.9            | 1.7         | 2.6         | 1.61                  | 0.494                                       | 0.141      |
| 7   | 132          | 96.2            | 21.5        | 2.8         | 1.69                  | 0.509                                       | 0.191      |
| Error   |              | 6.1             | 3.8         | 0.9         | 0.07                  | 0.51  | 0.03       |

BD = Bulk Density and PAW = Plant Available Water

**Table B.4.** Comparison of organic soils between Juniper Bay (JB) and Reference bays RB.

| <b>Horizon</b>               | <b>Depth</b> | <b>Sand</b>     | <b>Silt</b> | <b>Clay</b> | <b>BD</b>             | <b>Porosity</b>                             | <b>PAW</b> |
|------------------------------|--------------|-----------------|-------------|-------------|-----------------------|---|------------|
|                              | (cm)         | ----- (%) ----- |             |             | (g cm <sup>-3</sup> ) | --- (cm <sup>3</sup> cm <sup>-3</sup> ) --- |            |
| <b><u>Juniper Bay</u></b>    |              |                 |             |             |                       |   |            |
| 1                            | 15           | 57.5            | 30.3        | 26.4        | 0.7                   | 0.599                                       | 0.27       |
| 2                            | 32           | 53.8            | 41.8        | 30          | 0.52                  | 0.637                                       | 0.461      |
| 3                            | 54           | 57.1            | 39.9        | 27.8        | 0.48                  | 0.67  | 0.503      |
| 4                            | 75           | 59.5            | 35.9        | 22.2        | 0.85                  | 0.625                                       | 0.425      |
| 5                            | 87           | 71.1            | 19          | 11.8        | 0.123                 | 0.576                                       | 0.296      |
| 6                            | 108          | ---             | 14.9        | ---         | ---                   | ---   | ---        |
| Error                        | 6            | 14.8            | 8.3         | 6.7         | 0.17                  | 0.14  | 0.072      |
| <b><u>Reference Bays</u></b> |              |                 |             |             |                       |   |            |
| 1                            | 19           | ---             | ---         | ---         | ---                   | ---   | 0.3029     |
| 2                            | 48           | 40.5            | 43.7        | 16.2        | 0.29                  | 0.623                                       | 0.2896     |
| 3                            | 88           | 44.4            | 41.8        | 13.6        | 0.35                  | 0.662                                       | 0.2639     |
| 4                            | 123          | 55.7            | 32          | 12          | 0.64                  | 0.585                                       | 0.2679     |
| 5                            | 148          | 53.5            | 33          | 12.9        | 0.74                  | 0.605                                       | 0.3167     |
| 6                            | 171          | 63.8            | 24.8        | 11.2        | 0.96                  | 0.521                                       | 0.1931     |
| Error                        | 5            | 10.9            | 7.5         | 4.5         | 0.15                  | 0.09  | 0.052      |

BD = Bulk Density and PAW = Plant Available Water

**Table B.5.** Comparison of histic soils between Juniper Bay (JB) and Reference bays RB.

| <b>Horizon</b>              | <b>Depth</b> | <b>Sand</b> | <b>Silt</b>     | <b>Clay</b> | <b>BD</b>             | <b>Porosity</b>                             | <b>PAW</b> |
|-----------------------------|--------------|-------------|-----------------|-------------|-----------------------|---|------------|
|                             | (cm)         |             | ----- (%) ----- |             | (g cm <sup>-3</sup> ) | --- (cm <sup>3</sup> cm <sup>-3</sup> ) --- |            |
| <b><u>Juniper Bay</u></b>   |              |             |                 |             |                       |   |            |
| 1                           | 18           | 70.9        | 22.04           | 22          | 0.84                  | 0.661                                       | 0.2722     |
| 2                           | 30           | 57.4        | 29.78           | 32          | 0.63                  | 0.617                                       | 0.5396     |
| 3                           | 51           | 64.4        | 14.96           | 28.6        | 1.16                  | 0.559                                       | 0.4073     |
| 4                           | 65           | 81.8        | 6.15            | 13.7        | 1.32                  | 0.484                                       | 0.4564     |
| 5                           | 95           | 82.4        | 6.76            | 10.4        | 1.73                  | 0.323                                       | 0.2172     |
| 6                           | 112          | 75.9        | 9.09            | 19.6        | 1.67                  | 0.403                                       | 0.2348     |
| Error                       | 4.6          | 8.5         | 5.3             | 5.6         | 0.07                  | 0.05  | 0.1257     |
| <b><u>Research Bays</u></b> |              |             |                 |             |                       |   |            |
| 1                           | 16           | ---         | ---             | ---         | ---                   | ---   | 0.3684     |
| 2                           | 32           | 72.9        | 20.01           | 7.2         | 0.6                   | 0.619                                       | 0.4385     |
| 3                           | 56           | 85.9        | 10.9            | 3.2         | 0.61                  | 0.613                                       | 0.1827     |
| 4                           | 82           | 91.1        | 5.72            | 2.8         | 0.47                  | 0.366                                       | 0.1871     |
| 5                           | 118          | 92.9        | 4.74            | 2.8         | ---                   | ---   | 0.1753     |
| Error                       | 4.4          | 5.4         | 4.9             | 3.7         | 0.11                  | 0.07  | 0.1019     |

BD = Bulk Density and PAW = Plant Available Water

**Table B.6.** Comparison of mineral soils between Juniper Bay (JB) and Reference bays RB.

| <b>Horizon</b>               | <b>Depth</b><br>(cm) | <b>Sand</b><br>----- | <b>Silt</b><br>(%) ----- | <b>Clay</b><br>----- | <b>BD</b><br>(g cm <sup>-3</sup> ) | <b>Porosity</b><br>--- (cm <sup>3</sup> cm <sup>-3</sup> ) --- | <b>PAW</b> |
|------------------------------|----------------------|----------------------|--------------------------|----------------------|------------------------------------|--|------------|
| <b><u>Juniper Bay</u></b>    |                      |                      |                          |                      |                                    |  |            |
| 1                            | 10                   | 90.9                 | 9.2                      | 7.4                  | 1.09                               | 0.481  | 0.2296     |
| 2                            | 27                   | 88.1                 | 5.7                      | 5.1                  | 1.32                               | 0.464  | 0.2615     |
| 3                            | 44                   | 93.8                 | 5.7                      | 3.1                  | 1.45                               | 0.488  | 0.265      |
| 4                            | 62                   | 93.2                 | 2.5                      | 3.7                  | 1.49                               | 0.525  | 0.2047     |
| 5                            | 85                   | 94.5                 | 1.8                      | 4.3                  | 1.55                               | 0.493  | 0.2261     |
| 6                            | 101                  | 95.7                 | 1.3                      | 2.5                  | 1.59                               | 0.435  | 0.1719     |
| 7                            | 126                  | 95.9                 | 11.2                     | 2.7                  | 1.63                               | 0.429  | 0.1795     |
| Error                        | 7                    | 3.5                  | 2.6                      | 1.1                  |                                    |  | 0.066      |
| <b><u>Reference Bays</u></b> |                      |                      |                          |                      |                                    |  |            |
| 1                            | 10                   | 82.7                 | 12.4                     | 4.1                  | ---                                | ---  | 0.01       |
| 2                            | 22                   | 85.7                 | 10.9                     | 3.3                  | ---                                | ---  | 0.2639     |
| 3                            | 52                   | 96.4                 | 2.3                      | 1.2                  | ---                                | ---  | 0.0389     |
| 4                            | 82                   | 90.4                 | 5.3                      | 4.2                  | ---                                | ---  | 0.1272     |
| Error                        | 6.8                  | 2.6                  | 3.2                      | 0.8                  | ---                                | ---  | 0.051      |

BD = Bulk Density and PAW = Plant Available Water