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APPENDIX 1

STATISTICAL RESULTS SAMPLE CENSUS I EASTERN FLOODPLAINS 30.5.73  
MORNING COUNT. FLYING TIME 3 HRS. 13 MINS. PERCENTAGE OF STRATUM SAMPLED 18,5 OBSERVERS 2. n = 13

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| LECHWE        | 4 110                         | 1 170 724                             | 6,14                                       | 1 082                             | $\pm$ 2 121                                   | 52  |
| IMPALA        | 1 434                         | 337 561                               | 2,14                                       | 581                               | $\pm$ 1 139                                   | 79  |
| BUFFALO       | 1 045                         | 481 636                               | 1,56                                       | 694                               | $\pm$ 1 360                                   | 130   |
| WARTHOG       | 662                           | 22 500                                | 0,99                                       | 150                               | $\pm$ 294                                     | 44  |
| WILDEBEEST    | 390                           | 36 481                                | 0,58                                       | 191                               | $\pm$ 374                                     | 96  |
| ZEBRA         | 322                           | 47 961                                | 0,48                                       | 219                               | $\pm$ 429                                     | 133   |
| HIPPOPOTAMUS  | 331                           | 16 384                                | 0,49                                       | 128                               | $\pm$ 251                                     | 76  |
| TSESSEBE      | 370                           | 9 216                                 | 0,55                                       | 96                                | $\pm$ 188                                     | 51  |
| WATERBUCK     | 248                           | 20 164                                | 0,37                                       | 142                               | $\pm$ 278                                     | 112   |
| WILD DOG      | 126                           | 4 489                                 | 0,19                                       | 67                                | $\pm$ 131                                     | 104   |
| KUDU          | 110                           | 3 600                                 | 0,16                                       | 60                                | $\pm$ 118                                     | 107   |
| REEDBUCK      | 66                            | 576                                   | 0,098                                      | 24                                | $\pm$ 47                                      | 71  |
| SITATUNGA     | 62                            | 361                                   | 0,092                                      | 19                                | $\pm$ 37                                      | 60  |
| BABOON TROOPS | 26                            | 169                                   | 0,039                                      | 13                                | $\pm$ 25                                      | 98  |
| GIRAFFE       | 5                             | 25                                    | 0,008                                      | 5                                 | $\pm$ 10                                      | 196   |
| STEENBOK      | 5                             | 25                                    | 0,008                                      | 5                                 | $\pm$ 10                                      | 196   |

**APPENDIX 2**

**STATISTICAL RESULTS SAMPLE CENSUS II CHIEF'S ISLAND 7.7.73**  
**AFTERNOON COUNT. FLYING TIME 3 HRS. 30 MINS. PERCENTAGE OF STRATUM SAMPLED 7,80. OBSERVERS 1. n = 16.**

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| IMPALA        | 1 920                         | 289 444                               | 2,44                                       | 538                               | ± 1 054                                       | 55  |
| BUFFALO       | 1 100                         | 1 207 801                             | 1,39                                       | 1 099                             | ± 2 154                                       | 196   |
| GIRAFFE       | 428                           | 19 881                                | 0,54                                       | 141                               | ± 276   | 64  |
| ZEBRA         | 422                           | 63 504                                | 0,54                                       | 252                               | ± 494   | 117   |
| WARTHOG       | 320                           | 11 449                                | 0,41                                       | 107                               | ± 210   | 66  |
| WILDEBEEST    | 134                           | 6 241                                 | 0,17                                       | 79                                | ± 155   | 116   |
| TSESSEBE      | 74                            | 2 704                                 | 0,09                                       | 52                                | ± 102   | 138   |
| KUDU          | 78                            | 1 600                                 | 0,10                                       | 40                                | ± 78  | 100   |
| OSTRICH       | 94                            | 3 136                                 | 0,12                                       | 56                                | ± 110   | 117   |
| BABOON TROOPS | 29                            | 400                                   | 0,04                                       | 20                                | ± 39  | 135   |
| ELEPHANT      | 14                            | 196                                   | 0,02                                       | 14                                | ± 27  | 196   |
| LECHWE        | 14                            | 196                                   | 0,02                                       | 14                                | ± 27  | 196   |
| MONKEY GROUPS | 14                            | 196                                   | 0,02                                       | 14                                | ± 27  | 196   |

APPENDIX 3

STATISTICAL RESULTS SAMPLE CENSUS III WESTERN FLOODPLAINS 30.8.73  
MORNING COUNT. FLYING TIME 3 HRS. 59 MINS. PERCENTAGE OF STRATUM SAMPLED 17,4. OBSERVERS 1. n = 27

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE di | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|---|-----------------------------------|---|---|
| BUFFALO       | 1 105                         | 1 134 225                             | 3,14                                    | 1 065                             | ± 2 087                                       | 189   |
| LECHWE        | 1 325                         | 695 556                               | 3,77                                    | 834                               | ± 1 635                                       | 123   |
| IMPALA        | 1 509                         | 248 004                               | 4,28                                    | 498                               | ± 976   | 65  |
| WILDEBEEST    | 664                           | 98 596                                | 1,89                                    | 314                               | ± 615   | 93  |
| WARTHOG       | 390                           | 7 569                                 | 1,11                                    | 87                                | ± 171   | 44  |
| TSESSEBE      | 203                           | 15 376                                | 0,58                                    | 124                               | ± 243   | 120   |
| ZEBRA         | 63                            | 2 500                                 | 0,18                                    | 50                                | ± 98  | 156   |
| KUDU          | 90                            | 4 356                                 | 0,26                                    | 66                                | ± 129   | 144   |
| BABOON TROOPS | 43                            | 256                                   | 0,12                                    | 16                                | ± 31  | 73  |
| GIRAFFE       | 45                            | 1 369                                 | 0,13                                    | 37                                | ± 72  | 161   |
| REEDBUCK      | 34                            | 625                                   | 0,10                                    | 25                                | ± 49  | 144   |
| HIPPOPOTAMUS  | 5                             | 25                                    | 0,01                                    | 5                                 | ± 10  | 196   |

APPENDIX 4

STATISTICAL RESULTS SAMPLE CENSUS IV EASTERN FLOODPLAINS 31.8.73  
AFTERNOON COUNT. FLYING TIME 4 HRS. PERCENTAGE OF STRATUM SAMPLED 10,26. OBSERVERS 1. n = 14

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF Y |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| LECHWE        | 2 500                         | 632 035                               | 3,73                                       | 795                               | ± 1 558                                       | 62  |
| TSESSEBE      | 412                           | 36 864                                | 0,62                                       | 192                               | ± 376   | 91  |
| WARTHOG       | 310                           | 22 500                                | 0,46                                       | 150                               | ± 294   | 95  |
| BUFFALO       | 221                           | 48 400                                | 0,33                                       | 220                               | ± 431   | 195   |
| WILDEBEEST    | 144                           | 8 836                                 | 0,21                                       | 94                                | ± 184   | 128   |
| HIPPOPOTAMUS  | 77                            | 2 025                                 | 0,12                                       | 45                                | ± 88  | 115   |
| BABOON TROOPS | 95                            | 625                                   | 0,14                                       | 25                                | ± 49  | 52  |
| KUDU          | 119                           | 14 400                                | 0,18                                       | 120                               | ± 235   | 198   |
| ELEPHANT      | 77                            | 3 481                                 | 0,12                                       | 59                                | ± 116   | 150   |
| IMPALA        | 68                            | 1 849                                 | 0,10                                       | 43                                | ± 84  | 124   |
| REEDBUCK      | 48                            | 1 156                                 | 0,07                                       | 34                                | ± 67  | 139   |
| SITATUNGA     | 30                            | 256                                   | 0,04                                       | 16                                | ± 31  | 105   |

**APPENDIX 5**

**STATISTICAL RESULTS SAMPLE CENSUS V – CHIEF'S ISLAND 24.11.73**  
**MORNING COUNT. FLYING TIME 3 HRS. 50 MINS. PERCENTAGE OF STRATUM SAMPLED 15,6. OBSERVERS 2. n = 18**

| MAMMAL     | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|------------|-------------------------------|--------------------------------------|--|-----------------------------------|---|---|
| IMPALA     | 1 813                         | 231 961                              | 2,29                                       | 531                               | ± 1 041                                       | 57  |
| ZEBRA      | 383                           | 26 896                               | 0,49                                       | 164                               | ± 321   | 83  |
| WILDEBEEST | 321                           | 41 209                               | 0,41                                       | 103                               | ± 398   | 124   |
| GIRAFFE    | 290                           | 7 056                                | 0,37                                       | 84                                | ± 165   | 57  |
| WARTHOG    | 136                           | 1 225                                | 0,17                                       | 35                                | ± 69  | 50  |
| KUDU       | 78                            | 2 704                                | 0,10                                       | 52                                | ± 102   | 131   |
| TSESSEBE   | 12                            | 64                                   | 0,02                                       | 8                                 | ± 16  | 131   |
| OSTRICH    | 12                            | 64                                   | 0,02                                       | 8                                 | ± 16  | 131   |
| ELEPHANT   | 6                             | 36                                   | 0,01                                       | 6                                 | ± 12  | 196   |
| BUFFALO    | 7                             | 49                                   | 0,01                                       | 7                                 | ± 14  | 196   |

**APPENDIX 6**

**STATISTICAL RESULTS SAMPLE CENSUS VI WESTERN FLOODPLAINS 1.12.73**  
**AFTERNOON COUNT. FLYING TIME 4 HRS. 20 MINS. PERCENTAGE OF STRATUM SAMPLED 34,82. OBSERVERS 2. n = 26**

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| BUFFALO       | 539                           | 274 576                               | 1,53                                       | 524                               | ± 1 027                                       | 191   |
| LECHWE        | 706                           | 61 009                                | 2,01                                       | 247                               | ± 484   | 69  |
| ZEBRA         | 309                           | 31 684                                | 0,88                                       | 178                               | ± 349   | 113   |
| IMPALA        | 291                           | 12 100                                | 0,83                                       | 110                               | ± 216   | 74  |
| WILDEBEEST    | 187                           | 7 396                                 | 0,53                                       | 86                                | ± 169   | 90  |
| WARTHOG       | 82                            | 484                                   | 0,23                                       | 22                                | ± 43  | 53  |
| GIRAFFE       | 96                            | 2 209                                 | 0,27                                       | 47                                | ± 92  | 96  |
| TSESSEBE      | 59                            | 1 089                                 | 0,17                                       | 33                                | ± 65  | 110   |
| BABOON TROOPS | 44                            | 121                                   | 0,13                                       | 11                                | ± 22  | 49  |
| KUDU          | 14                            | 196                                   | 0,04                                       | 14                                | ± 27  | 196   |
| REEDBUCK      | 10                            | 25                                    | 0,03                                       | 5                                 | ± 10  | 98  |
| OSTRICH       | 7                             | 49                                    | 0,02                                       | 7                                 | ± 14  | 196   |
| HIPPOPOOTAMUS | 5                             | 16                                    | 0,01                                       | 4                                 | ± 8   | 157   |
| SITATUNGA     | 5                             | 16                                    | 0,01                                       | 4                                 | ± 8   | 157   |

APPENDIX 7

STATISTICAL RESULTS SAMPLE CENSUS VII EASTERN FLOODPLAINS 13.12.73  
MORNING COUNT. FLYING TIME 3 HRS. 50 MINS. PERCENTAGE OF STRATUM SAMPLED 20,54. OBSERVERS 2. n = 14

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| IMPALA        | 1 994                         | 208 849                               | 2,98                                       | 457                               | ± 896   | 45  |
| LECHWE        | 1 158                         | 36 864                                | 1,73                                       | 192                               | ± 376   | 32  |
| REEDBUCK      | 95                            | 841                                   | 0,14                                       | 29                                | ± 57  | 60  |
| BUFFALO       | 56                            | 3 136                                 | 0,08                                       | 56                                | ± 110   | 196   |
| WARTHOG       | 52                            | 256                                   | 0,08                                       | 16                                | ± 31  | 60  |
| HIPPOPOTAMUS  | 23                            | 529                                   | 0,03                                       | 23                                | ± 45  | 196   |
| GIRAFFE       | 15                            | 225                                   | 0,02                                       | 15                                | ± 29  | 196   |
| BABOON TROOPS | 23                            | 169                                   | 0,03                                       | 13                                | ± 25  | 111   |
| TSESSEBE      | 18                            | 100                                   | 0,03                                       | 10                                | ± 20  | 109   |
| KUDU          | 4                             | 16                                    | 0,01                                       | 4                                 | ± 8   | 196   |
| SITATUNGA     | 4                             | 16                                    | 0,01                                       | 4                                 | ± 8   | 196   |

APPENDIX 8

STATISTICAL RESULTS SAMPLE CENSUS VIII CHIEF'S ISLAND 13.12.73  
AFTERNOON COUNT. FLYING TIME 3 HRS. 40 MINS. PERCENTAGE OF STRATUM SAMPLED 15,6. OBSERVERS 2. n = 18

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| IMPALA        | 4 320                         | 829 921                               | 5,47                                       | 911                               | ± 1 786                                       | 41  |
| BUFFALO       | 781                           | 240 100                               | 1,00                                       | 490                               | ± 960   | 123   |
| GIRAFFE       | 312                           | 7 396                                 | 0,40                                       | 86                                | ± 169   | 54  |
| WILDEBEEST    | 316                           | 40 401                                | 0,40                                       | 201                               | ± 394   | 125   |
| KUDU          | 208                           | 7 569                                 | 0,26                                       | 87                                | ± 171   | 82  |
| ZEBRA         | 172                           | 7 396                                 | 0,22                                       | 86                                | ± 169   | 98  |
| OSTRICH       | 55                            | 1 764                                 | 0,07                                       | 42                                | ± 82  | 150   |
| WARTHOG       | 32                            | 361                                   | 0,04                                       | 19                                | ± 37  | 116   |
| TSESSEBE      | 25                            | 400                                   | 0,32                                       | 20                                | ± 39  | 157   |
| LION          | 16                            | 256                                   | 0,02                                       | 16                                | ± 31  | 196   |
| REEDBUCK      | 27                            | 729                                   | 0,03                                       | 27                                | ± 53  | 196   |
| LECHWE        | 13                            | 169                                   | 0,02                                       | 13                                | ± 25  | 196   |
| BUSHBUCK      | 7                             | 49                                    | 0,01                                       | 7                                 | ± 14  | 196   |
| STEENBOK      | 6                             | 36                                    | 0,01                                       | 6                                 | ± 12  | 196   |
| BABOON TROOPS | 7                             | 49                                    | 0,01                                       | 7                                 | ± 14  | 196   |

**APPENDIX 9**

**STATISTICAL RESULTS SAMPLE CENSUS IX WESTERN FLOODPLAINS 18.4.74**  
**MORNING COUNT. FLYING TIME 3 HRS. 15 MINS. PERCENTAGE OF STRATUM SAMPLED 34,82. OBSERVERS 2. n = 27**

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) |            | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|------------|---|
|               |                               |                                       |  |                                   | CONFIDENCE LIMIT                              | PERCENTAGE |   |
| IMPALA        | 355                           | 18 310                                | 1,01                                       | 135                               | ± 265   | 75         |   |
| LECHWE        | 237                           | 4 314                                 | 0,67                                       | 66                                | ± 129   | 54         |   |
| WILDEBEEST    | 185                           | 8 936                                 | 0,53                                       | 95                                | ± 186   | 101        |   |
| BUFFALO       | 489                           | 232 953                               | 1,39                                       | 483                               | ± 947   | 194        |   |
| WARTHOG       | 143                           | 1 444                                 | 0,41                                       | 38                                | ± 74  | 52         |   |
| TSESSEBE      | 62                            | 1 119                                 | 0,18                                       | 33                                | ± 65  | 105        |   |
| GIRAFFE       | 72                            | 789                                   | 0,21                                       | 28                                | ± 55  | 76         |   |
| REEDBUCK      | 56                            | 485                                   | 0,16                                       | 22                                | ± 43  | 77         |   |
| ZEBRA         | 27                            | 708                                   | 0,08                                       | 27                                | ± 53  | 196        |   |
| KUDU          | 28                            | 191                                   | 0,08                                       | 14                                | ± 27  | 96         |   |
| BABOON TROOPS | 19                            | 78                                    | 0,05                                       | 9                                 | ± 18  | 95         |   |
| STEENBOK      | 5                             | 20                                    | 0,01                                       | 5                                 | ± 10  | 200        |   |

**APPENDIX 10**

**STATISTICAL RESULTS SAMPLE CENSUS X CHIEF'S ISLAND 18.4.74  
AFTERNOON COUNT. FLYING TIME 3 HRS. 15 MINS. PERCENTAGE OF STRATUM SAMPLES 15,60. OBSERVERS 2. n = 18**

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| IMPALA        | 2 135                         | 290 307                               | 2,70                                       | 539                               | ± 1 056                                       | 49  |
| BUFFALO       | 2 109                         | 1 048 481                             | 2,67                                       | 1 024                             | ± 2 007                                       | 95  |
| ELEPHANT      | 451                           | 179 009                               | 0,57                                       | 423                               | ± 829   | 184   |
| GIRAFFE       | 330                           | 6 261                                 | 0,39                                       | 79                                | ± 155   | 47  |
| ZEBRA         | 94                            | 2 182                                 | 0,12                                       | 47                                | ± 92  | 98  |
| WARTHOG       | 104                           | 1 427                                 | 0,12                                       | 38                                | ± 74  | 72  |
| KUDU          | 54                            | 1 611                                 | 0,07                                       | 40                                | ± 78  | 145   |
| OSTRICH       | 43                            | 1 888                                 | 0,06                                       | 43                                | ± 84  | 196   |
| LECHWE        | 49                            | 918                                   | 0,06                                       | 30                                | ± 59  | 120   |
| WILDEBEEST    | 34                            | 469                                   | 0,04                                       | 17                                | ± 33  | 98  |
| TSESSEBE      | 20                            | 404                                   | 0,03                                       | 20                                | ± 39  | 196   |
| BABOON TROOPS | 22                            | 122                                   | 0,03                                       | 11                                | ± 22  | 98  |
| STEENBOK      | 17                            | 126                                   | 0,02                                       | 12                                | ± 24  | 138   |
| HIPPOPOTAMUS  | 5                             | 19                                    | 0,01                                       | 4                                 | ± 8   | 157   |

**APPENDIX 11**

**STATISTICAL RESULTS SAMPLE CENSUS XI EASTERN FLOODPLAINS 19.4.74**  
**MORNING COUNT. FLYING TIME 3 HRS. PERCENTAGE OF STRATUM SAMPLED 20.54. OBSERVERS 2. n = 14**

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| LECHWE        | 1 044                         | 141 353                               | 1,56                                       | 376                               | ± 737   | 71  |
| IMPALA        | 689                           | 70 787                                | 1,03                                       | 266                               | ± 521   | 76  |
| BUFFALO       | 486                           | 165 648                               | 0,73                                       | 407                               | ± 798   | 164   |
| GIRAFFE       | 99                            | 1 628                                 | 0,15                                       | 40                                | ± 78  | 79  |
| WARTHOG       | 60                            | 617                                   | 0,09                                       | 25                                | ± 49  | 82  |
| REEDBUCK      | 45                            | 789                                   | 0,07                                       | 28                                | ± 55  | 122   |
| WILDEBEEST    | 34                            | 789                                   | 0,05                                       | 28                                | ± 55  | 161   |
| TSESSEBE      | 30                            | 893                                   | 0,05                                       | 30                                | ± 59  | 196   |
| BABOON TROOPS | 12                            | 64                                    | 0,02                                       | 8                                 | ± 16  | 131   |
| DUIKER        | 10                            | 42                                    | 0,01                                       | 6                                 | ± 12  | 118   |
| LION          | 5                             | 23                                    | 0,01                                       | 5                                 | ± 10  | 196   |

APPENDIX 12

STATISTICAL RESULTS SAMPLE CENSUS XII WESTERN FLOODPLAINS 28.7.74  
MORNING COUNT. FLYING TIME 3 HRS 10 MINS. PERCENTAGE OF STRATUM SAMPLED 34,82. OBSERVERS 2. n = 27

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| BUFFALO       | 1 176                         | 1 036 196                             | 3,34                                       | 1 018                             | ± 1 995                                       | 170   |
| IMPALA        | 534                           | 35 797                                | 1,52                                       | 189                               | ± 370   | 69  |
| WILDEBEEST    | 249                           | 13 027                                | 0,71                                       | 114                               | ± 223   | 90  |
| LECHWE        | 184                           | 2 983                                 | 0,52                                       | 55                                | ± 108   | 59  |
| TSESSEBE      | 179                           | 8 052                                 | 0,51                                       | 90                                | ± 176   | 99  |
| WARTHOG       | 98                            | 1 001                                 | 0,28                                       | 32                                | ± 63  | 64  |
| GIRAFFE       | 76                            | 2 196                                 | 0,22                                       | 47                                | ± 92  | 121   |
| REEDBUCK      | 94                            | 1 158                                 | 0,27                                       | 34                                | ± 67  | 71  |
| ZEBRA         | 31                            | 311                                   | 0,09                                       | 18                                | ± 35  | 114   |
| KUDU          | 42                            | 475                                   | 0,12                                       | 22                                | ± 43  | 103   |
| LION          | 38                            | 837                                   | 0,11                                       | 29                                | ± 57  | 150   |
| BABOON TROOPS | 13                            | 53                                    | 0,04                                       | 7                                 | ± 14  | 106   |

**APPENDIX 13**

**STATISTICAL RESULTS SAMPLE CENSUS XIII CHIEF'S ISLAND 28.7.74**  
**AFTERNOON COUNT. FLYING TIME 3 HRS 20 MINS. PERCENTAGE OF STRATUM SAMPLED 15,60. OBSERVERS 2. n = 18**

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| IMPALA        | 4 773                         | 1 584 026                             | 6,04                                       | 1 259                             | ± 2 468                                       | 52  |
| BUFFALO       | 2 103                         | 3 816 694                             | 2,66                                       | 1 954                             | ± 3 829                                       | 182   |
| GIRAFFE       | 169                           | 2 245                                 | 0,21                                       | 47                                | ± 92  | 55  |
| ZEBRA         | 121                           | 3 609                                 | 0,15                                       | 60                                | ± 118   | 97  |
| WILDEBEEST    | 128                           | 6 106                                 | 0,16                                       | 78                                | ± 153   | 119   |
| ELEPHANT      | 81                            | 2 014                                 | 0,10                                       | 45                                | ± 88  | 109   |
| WARTHOG       | 50                            | 336                                   | 0,06                                       | 18                                | ± 35  | 71  |
| KUDU          | 40                            | 860                                   | 0,05                                       | 29                                | ± 57  | 142   |
| TSESSEBE      | 49                            | 1 175                                 | 0,06                                       | 35                                | ± 69  | 140   |
| LECHWE        | 25                            | 357                                   | 0,03                                       | 19                                | ± 37  | 149   |
| BABOON TROOPS | 19                            | 105                                   | 0,02                                       | 10                                | ± 20  | 103   |
| REEDBUCK      | 14                            | 197                                   | 0,02                                       | 14                                | ± 27  | 196   |
| HIPPOPOTAMUS  | 9                             | 79                                    | 0,01                                       | 9                                 | ± 18  | 196   |
| OSTRICH       | 6                             | 40                                    | 0,01                                       | 6                                 | ± 12  | 196   |

APPENDIX 14

STATISTICAL RESULTS SAMPLE CENSUS XIV EASTERN FLOODPLAINS 29.7.74  
MORNING COUNT. FLYING TIME 3 HRS. 25 MINS. PERCENTAGE OF STRATUM SAMPLED 20,54. OBSERVERS 2. n = 14

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE di | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|---|-----------------------------------|---|---|
| BUFFALO       | 3 735                         | 1 567 325                             | 5,58                                    | 1 252                             | ± 2 454                                       | 65  |
| LECHWE        | 654                           | 32 014                                | 0,98                                    | 179                               | ± 351   | 54  |
| IMPALA        | 577                           | 56 161                                | 0,86                                    | 237                               | ± 465   | 81  |
| ELEPHANT      | 383                           | 41 560                                | 0,57                                    | 204                               | ± 400   | 104   |
| WARTHOG       | 154                           | 3 428                                 | 0,23                                    | 59                                | ± 116   | 75  |
| TSESSEBE      | 124                           | 9 496                                 | 0,19                                    | 97                                | ± 190   | 153   |
| KUDU          | 96                            | 2 540                                 | 0,14                                    | 50                                | ± 98  | 102   |
| GIRAFFE       | 46                            | 1 752                                 | 0,07                                    | 42                                | ± 82  | 179   |
| WILDEBEEEST   | 57                            | 1 036                                 | 0,09                                    | 32                                | ± 63  | 110   |
| WATERBUCK     | 25                            | 641                                   | 0,04                                    | 25                                | ± 49  | 196   |
| REEDBUCK      | 37                            | 148                                   | 0,06                                    | 12                                | ± 24  | 64  |
| BABOON TROOPS | 26                            | 148                                   | 0,04                                    | 12                                | ± 24  | 90  |
| OSTRICH       | 10                            | 42                                    | 0,01                                    | 6                                 | ± 12  | 118   |

APPENDIX 15

STATISTICAL RESULTS SAMPLE CENSUS XV WESTERN FLOODPLAINS 4.12.74  
MORNING COUNT. FLYING TIME 3 HRS. 30 MINS. PERCENTAGE OF STRATUM SAMPLED 34,82. OBSERVERS 2. n = 27

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| IMPALA        | 1 434                         | 257 115                               | 4,07                                       | 507                               | ± 994   | 69  |
| LECHWE        | 413                           | 36 709                                | 1,17                                       | 192                               | ± 376   | 91  |
| WILDEBEEST    | 205                           | 15 923                                | 0,58                                       | 126                               | ± 247   | 120   |
| BUFFALO       | 147                           | 15 740                                | 0,42                                       | 125                               | ± 245   | 167   |
| GIRAFFE       | 139                           | 3 855                                 | 0,39                                       | 62                                | ± 122   | 87  |
| TSESSEBE      | 105                           | 1 881                                 | 0,30                                       | 43                                | ± 84  | 80  |
| WARTHOG       | 84                            | 551                                   | 0,24                                       | 23                                | ± 45  | 54  |
| ZEBRA         | 125                           | 9 269                                 | 0,36                                       | 96                                | ± 188   | 151   |
| KUDU          | 58                            | 1 846                                 | 0,17                                       | 43                                | ± 84  | 145   |
| REEDBUCK      | 26                            | 118                                   | 0,07                                       | 11                                | ± 22  | 83  |
| BABOON TROOPS | 33                            | 130                                   | 0,09                                       | 11                                | ± 22  | 65  |

APPENDIX 16

STATISTICAL RESULTS OF SAMPLE CENSUS XVI CHIEF'S ISLAND 4.12.74  
AFTERNOON COUNT. FLYING TIME 3 HRS. 35 MINS. PERCENTAGE OF STRATUM SAMPLED 15,60. OBSERVERS 2. n = 18

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| BUFFALO       | 3 569                         | 3 846 868                             | 4,52                                       | 1 961                             | ± 3 844                                       | 108   |
| IMPALA        | 3 212                         | 719 043                               | 4,07                                       | 848                               | ± 1 662                                       | 52  |
| GIRAFFE       | 329                           | 5 078                                 | 0,42                                       | 71                                | ± 139   | 42  |
| ZEBRA         | 233                           | 24 194                                | 0,30                                       | 156                               | ± 306   | 131   |
| WARTHOG       | 183                           | 4 553                                 | 0,23                                       | 67                                | ± 131   | 72  |
| KUDU          | 72                            | 1 469                                 | 0,09                                       | 38                                | ± 74  | 103   |
| ELEPHANT      | 37                            | 713                                   | 0,05                                       | 27                                | ± 53  | 143   |
| WILDEBEEST    | 52                            | 671                                   | 0,07                                       | 26                                | ± 51  | 98  |
| TSESSEBE      | 34                            | 650                                   | 0,04                                       | 26                                | ± 51  | 150   |
| BABOON TROOPS | 38                            | 230                                   | 0,05                                       | 15                                | ± 29  | 77  |
| LECHWE        | 14                            | 208                                   | 0,02                                       | 14                                | ± 27  | 196   |
| REEDBUCK      | 9                             | 80                                    | 0,01                                       | 9                                 | ± 18  | 196   |

APPENDIX 17

STATISTICAL RESULTS SAMPLE CENSUS XVII EASTERN FLOODPLAINS 5.12.74  
MORNING COUNT. FLYING TIME 3 HRS. 20 MINS. PERCENTAGE STRATUM SAMPLED 20,54. OBSERVERS 2. n = 14

| MAMMAL        | POPULATION ESTIMATE $\hat{Y}$ | POPULATION VARIANCE VAR ( $\hat{Y}$ ) | AVERAGE DENSITY PER SQUARE KILOMETRE $d_i$ | STANDARD ERROR S.E. ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT OF ( $\hat{Y}$ ) | 95 PER CENT CONFIDENCE LIMIT AS A PERCENTAGE OF $\hat{Y}$ |
|---------------|-------------------------------|---------------------------------------|--|-----------------------------------|---|---|
| LECHWE        | 1 239                         | 65 953                                | 1,85                                       | 257                               | ± 504   | 41  |
| IMPALA        | 242                           | 19 880                                | 0,36                                       | 141                               | ± 276   | 114   |
| REEDBUCK      | 180                           | 1 727                                 | 0,27                                       | 42                                | ± 82  | 46  |
| WARTHOG       | 209                           | 5 155                                 | 0,31                                       | 72                                | ± 141   | 68  |
| GIRAFFE       | 81                            | 1 036                                 | 0,12                                       | 32                                | ± 63  | 77  |
| BABOON TROOPS | 65                            | 715                                   | 0,10                                       | 27                                | ± 53  | 81  |
| WILDEBEEST    | 49                            | 1 357                                 | 0,07                                       | 37                                | ± 73  | 148   |
| TSESSEBE      | 42                            | 1 751                                 | 0,06                                       | 42                                | ± 82  | 196   |
| LION          | 45                            | 2 096                                 | 0,07                                       | 45                                | ± 88  | 196   |
| WATERBUCK     | 23                            | 518                                   | 0,03                                       | 23                                | ± 45  | 196   |
| BUFFALO       | 9                             | 69                                    | 0,01                                       | 8                                 | ± 16  | 174   |
| HIPPOPOTAMUS  | 5                             | 23                                    | 0,01                                       | 5                                 | ± 10  | 196   |

APPENDIX 18

SUMMARY OF RESULTS OF FOUR RED LECHWE AERIAL CENSUSES ON A 2 KM<sup>2</sup> GRID IN THE MOREMI WILDLIFE RESERVE  
AND ADJACENT FLOODPLAINS 1975

| DATE  | TOTAL COUNTED IN 2 x 300 METRE TRANSECTS |                            |                            | POPULATION ESTIMATE CORRECTED $\hat{Y}$            |  |  | TOTAL                          |
|---|--|----------------------------|----------------------------|--|--|--|--------------------------------|
|   | MOANACHIRA-M'BOROGHA                     | MOGHELO-GOMOTI             | KHWAI                      | MOANACHIRA-M'BOROGHA                               | MOGHELO-GOMOTI                                     | KHWAI  |                                |
| 5 – 6 February 1975                           |  |                            |                            |  |  |  |                                |
| Area  | 461 km <sup>2</sup><br>583               | 709 km <sup>2</sup><br>777 | 302 km <sup>2</sup><br>598 | 461 km <sup>2</sup><br>1943<br>$\pm$ 243<br>(4,21) | 709 km <sup>2</sup><br>2590<br>$\pm$ 497<br>(3,65) | 302 km <sup>2</sup><br>1993<br>$\pm$ 325<br>(6,60) | 1472 km <sup>2</sup><br>6526 * |
| Standard Error<br>Density Per km <sup>2</sup> |  |                            |                            |  |  |  |                                |
| 26 – 27 April 1975                            | 521                                      | 1358                       | 348                        | 1736<br>$\pm$ 340<br>(3,77)                        | 4526<br>$\pm$ 642<br>(6,38)                        | 1160<br>$\pm$ 198<br>(3,84)                        | 7422                           |
| Standard Error<br>Density Per km <sup>2</sup> |  |                            |                            |  |  |  |                                |
| 22 – 24 July 1975                             | 473                                      | 1234                       | 501                        | 1577<br>$\pm$ 318<br>(3,42)                        | 4123<br>$\pm$ 586<br>(5,82)                        | 1670<br>$\pm$ 349<br>(5,53)                        | 7370                           |
| Standard Error<br>Density Per km <sup>2</sup> |  |                            |                            |  |  |  |                                |
| 17 – 18 October 1975                          | 347                                      | 1474                       | 455                        | 1156<br>$\pm$ 224<br>(2,51)                        | 4913<br>$\pm$ 823<br>(6,93)                        | 1517<br>$\pm$ 287<br>(5,02)                        | 7586                           |
| Standard Error<br>Density Per km <sup>2</sup> |  |                            |                            |  |  |  |                                |

\* Total estimate considered low due to missing some prime lechwe habitat because of navigational problems.

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