

## Supplementary Materials

**Table S1.** Research and populations by country.

| Country      | Total Population | Percentage of Total Population | Total Research Published | Percentage of Research |
|--------------|------------------|--------------------------------|--------------------------|------------------------|
| Botswana     | 131626           | 31.68                          | 49                       | 9.12                   |
| Zimbabwe     | 82630            | 19.89                          | 52                       | 9.68                   |
| Tanzania     | 50433            | 12.14                          | 46                       | 8.57                   |
| Kenya        | 22809            | 5.49                           | 109                      | 20.30                  |
| Namibia      | 22754            | 5.48                           | 23                       | 4.28                   |
| Zambia       | 21967            | 5.29                           | 13                       | 2.42                   |
| South Africa | 18841            | 4.54                           | 153                      | 28.49                  |
| Mozambique   | 10884            | 2.62                           | 8                        | 1.49                   |
| South Sudan  | 7103             | 1.71                           | 1                        | 0.19                   |
| Burkina Faso | 6850             | 1.65                           | 7                        | 1.30                   |
| Uganda       | 4923             | 1.19                           | 5                        | 0.93                   |
| Angola       | 3396             | 0.82                           | 1                        | 0.19                   |
| Benin        | 2984             | 0.72                           | 9                        | 1.68                   |
| Malawi       | 1307             | 0.31                           | 2                        | 0.37                   |
| Ethiopia     | 1017             | 0.24                           | 8                        | 1.49                   |
| Chad         | 794              | 0.19                           | 1                        | 0.19                   |
| Mali         | 253              | 0.06                           | 2                        | 0.37                   |
| Rwanda       | 88               | 0.02                           | 0                        | 0.00                   |
| Swaziland    | 42               | 0.01                           | 1                        | 0.19                   |
| Senegal      | 1                | 0.00                           | 0                        | 0.00                   |
| Eritrea      | 0                | 0.00                           | 4                        | 0.74                   |

The most research on elephants published in the last 20 years was done in South Africa [28.5%] and Kenya [20.3%] while respectively having 4.5- and 5.5% of the total population. The countries with the highest elephant population are Botswana [31.7%] and Zimbabwe [19.9%] and have published 9.1- and 9.7% of research.

**Table S2.** Areas with the most research published.

| Area                           | Total Population | Percentage of Population | Total Research Published | Percentage of Research |
|--------------------------------|------------------|--------------------------|--------------------------|------------------------|
| Kruger National Park           | 17086            | 4.11                     | 64                       | 12.21                  |
| Other Private Reserves         | 2482             | 0.60                     | 51                       | 9.73                   |
| Laikipia-Samburu Ecosystem     | 6365             | 1.53                     | 44                       | 8.40                   |
| Northern Botswana              | 129939           | 31.28                    | 44                       | 8.40                   |
| Amboseli Ecosystem             | 1656             | 0.40                     | 31                       | 5.92                   |
| Hwange National Park           | 45846            | 11.04                    | 28                       | 5.34                   |
| Addo Elephant Park             | 595              | 0.14                     | 21                       | 4.01                   |
| Tsavo National Park            | 9504             | 2.29                     | 20                       | 3.82                   |
| Serengeti Ecosystem            | 6087             | 1.47                     | 16                       | 3.05                   |
| Etosha National Park           | 2911             | 0.70                     | 14                       | 2.67                   |
| Rest of Zambezi Valley         | 8200             | 1.97                     | 14                       | 2.67                   |
| Pilanesburg Provincial Reserve | 240              | 0.06                     | 12                       | 2.29                   |
| Tembe Elephant Park            | 220              | 0.05                     | 10                       | 1.91                   |

The areas with the most research on elephants being published in the last 20 years are Kruger National Park [12.2%] and Other Private Reserves [9.7%] which are all located around Kruger National Park and both are in South Africa and have 4.5- and 0.6% of the total elephant population.

**Table S3.** Areas with the highest elephant population.

| <b>Area</b>                   | <b>Total Population</b> | <b>Percentage of Population</b> | <b>Total Research Published</b> | <b>Percentage of Research</b> |
|-------------------------------|-------------------------|---------------------------------|---------------------------------|-------------------------------|
| Northern Botswana             | 129939                  | 31.27834                        | 44                              | 8.396947                      |
| Hwange National Park          | 45846                   | 11.03585                        | 28                              | 5.343511                      |
| Kruger National Park          | 17086                   | 4.112867                        | 64                              | 12.21374                      |
| Ruaha - Runga Ecosystem       | 14284                   | 3.438382                        | 6                               | 1.145038                      |
| Selous - Mikumi Ecosystem     | 14040                   | 3.379647                        | 9                               | 1.717557                      |
| Zambezi Region                | 13116                   | 3.157226                        | 4                               | 0.763359                      |
| Gornarezhou National Park     | 11120                   | 2.676757                        | 6                               | 1.145038                      |
| Tsavo National Park           | 9504                    | 2.287761                        | 20                              | 3.816794                      |
| Laipikia-Samburu Ecosystem    | 6365                    | 1.532155                        | 44                              | 8.396947                      |
| Serengeti Ecosystem           | 6087                    | 1.465236                        | 16                              | 3.053435                      |
| Luangwa Game Management Areas | 5869                    | 1.41276                         | 1                               | 0.19084                       |
| Jonglei National Park         | 5644                    | 1.358599                        | 0                               | 0                             |

The areas with the highest elephant population are Northern Botswana [31.3%] and Hwange National Park in Zimbabwe [11%] and have produced 8.4- and 5.3% of elephant research in the last 20 years.

**Table S4.** Fencing status of included areas.

| <b>Fencing Status</b> | <b>Total Population</b> | <b>Percentage of Population</b> | <b>Total Research Published</b> | <b>Percentage of Research</b> |
|-----------------------|-------------------------|---------------------------------|---------------------------------|-------------------------------|
| Fenced                | 31096                   | 7.5                             | 132                             | 26.08695652                   |
| Partially fenced      | 268510                  | 64.4                            | 155                             | 30.63241107                   |
| Unfenced              | 117529                  | 28.2                            | 219                             | 43.28063241                   |

The areas with the highest elephant population are partially fenced [64.4%] followed by unfenced [28.2%] and fenced [7.5%] have produced 30.6-, 43.3- and 26% of elephant research in the last 20 years.

**Table S5.** Management/ownership status of included areas.

| <b>Management Status</b>    | <b>Total Population</b> | <b>Percentage of Population</b> | <b>Total Research Published</b> | <b>Percentage of Research</b> |
|-----------------------------|-------------------------|---------------------------------|---------------------------------|-------------------------------|
| Publicly [government/state] | 120563                  | 28.9                            | 266                             | 52.56916996                   |
| Privately                   | 25226                   | 6                               | 86                              | 16.99604743                   |
| Joint                       | 271346                  | 65                              | 154                             | 30.43478261                   |

The areas with the highest elephant population are jointly managed [65%] followed by publically managed [28.9%] and privately [6%] have produced 30.4-, 52.6- and 16.9% of elephant research in the last 20 years.

**Table S6.** Proportion of each country's elephant population that has not been researched in the last 20 years.

| Country            | Total Number of Areas | Total Places without Research | Percent of Places without Research |
|--------------------|-----------------------|-------------------------------|------------------------------------|
| Namibia            | 6                     | 1                             | 16.66666667                        |
| South Africa       | 24                    | 7                             | 29.16666667                        |
| Botswana           | 3                     | 1                             | 33.33333333                        |
| Kenya              | 24                    | 8                             | 33.33333333                        |
| Tanzania           | 25                    | 12                            | 48                                 |
| Malawi             | 8                     | 4                             | 50                                 |
| Rwanda             | 2                     | 1                             | 50                                 |
| Zambia             | 16                    | 8                             | 50                                 |
| Benin              | 5                     | 3                             | 60                                 |
| Swaziland/Eswatini | 3                     | 2                             | 66.66666667                        |
| Uganda             | 12                    | 8                             | 66.66666667                        |
| Ethiopia           | 10                    | 7                             | 70                                 |
| Zimbabwe           | 36                    | 26                            | 72.22222222                        |
| Angola             | 4                     | 3                             | 75                                 |
| Mozambique         | 16                    | 12                            | 75                                 |
| South Sudan        | 5                     | 4                             | 80                                 |
| Burkina Faso       | 9                     | 8                             | 88.88888889                        |
| Chad               | 14                    | 13                            | 92.85714286                        |
| Eritrea            | 1                     | 1                             | 100                                |
| Senegal            | 1                     | 1                             | 100                                |

The areas with the highest elephant population are jointly managed [65%] followed by publically managed [28.9%] and privately [6%] have produced 30.4-, 52.6- and 16.9% of elephant research in the last 20 years.

**Table S7.** Count of the topic of research papers for the countries with the highest elephant populations.

|            |                      |    |
|------------|----------------------|----|
| Botswana   | Behaviour            | 11 |
|            | Climate Interactions | 2  |
|            | Ecology              | 25 |
|            | HEC                  | 8  |
|            | Poaching             | 1  |
| Kenya      | Behaviour            | 27 |
|            | Climate Interactions | 5  |
|            | Ecology              | 27 |
|            | HEC                  | 32 |
| Mozambique | Poaching             | 11 |
|            | Behaviour            | 3  |
|            | Climate Interactions | 0  |
|            | Ecology              | 1  |
|            | HEC                  | 2  |
| Namibia    | Poaching             | 1  |
|            | Behaviour            | 12 |
|            | Climate Interactions | 4  |
|            | Ecology              | 3  |
|            | HEC                  | 3  |
|            | Poaching             | 0  |

|              |                      |    |
|--------------|----------------------|----|
| South Africa | Behaviour            | 64 |
|              | Climate Interactions | 6  |
|              | Ecology              | 66 |
|              | HEC                  | 3  |
|              | Poaching             | 1  |
| Tanzania     | Behaviour            | 10 |
|              | Climate Interactions | 2  |
|              | Ecology              | 15 |
|              | HEC                  | 12 |
|              | Poaching             | 4  |
| Zambia       | Behaviour            | 1  |
|              | Climate Interactions | 2  |
|              | Ecology              | 3  |
|              | HEC                  | 4  |
|              | Poaching             | 3  |
| Zimbabwe     | Behaviour            | 7  |
|              | Climate Interactions | 11 |
|              | Ecology              | 24 |
|              | HEC                  | 7  |
|              | Poaching             | 3  |