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# The political biogeography of migratory marine predators

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## Supplementary Information for

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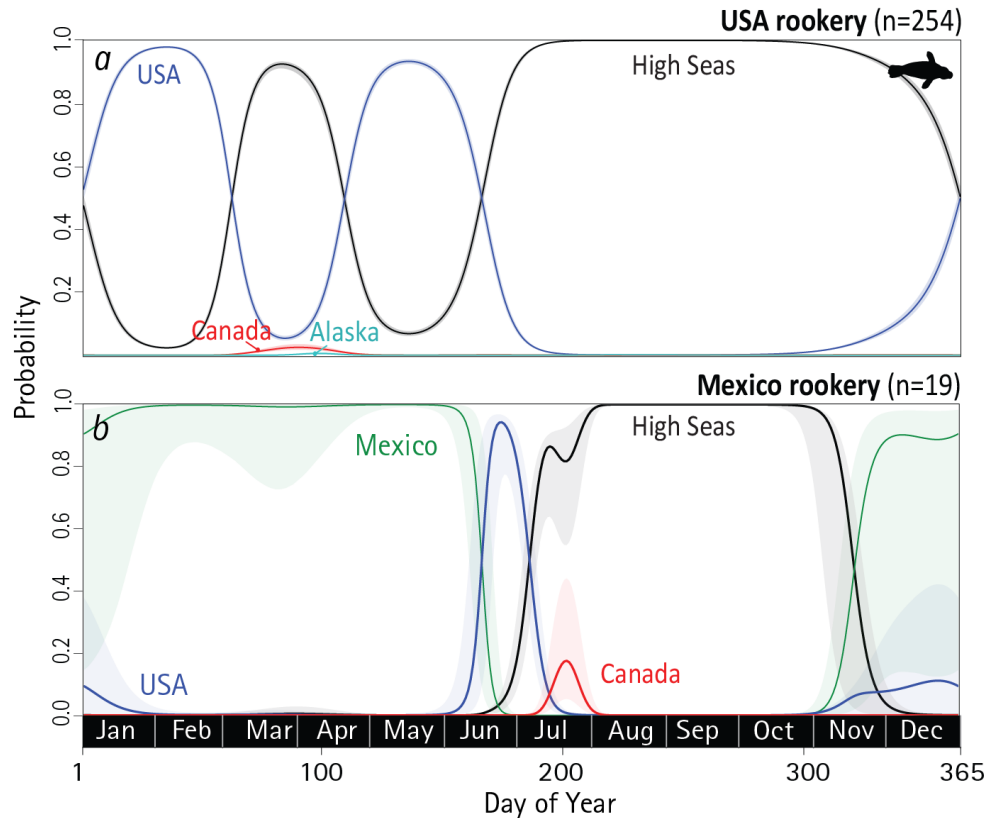
Washington, D.C. 20008, USA.

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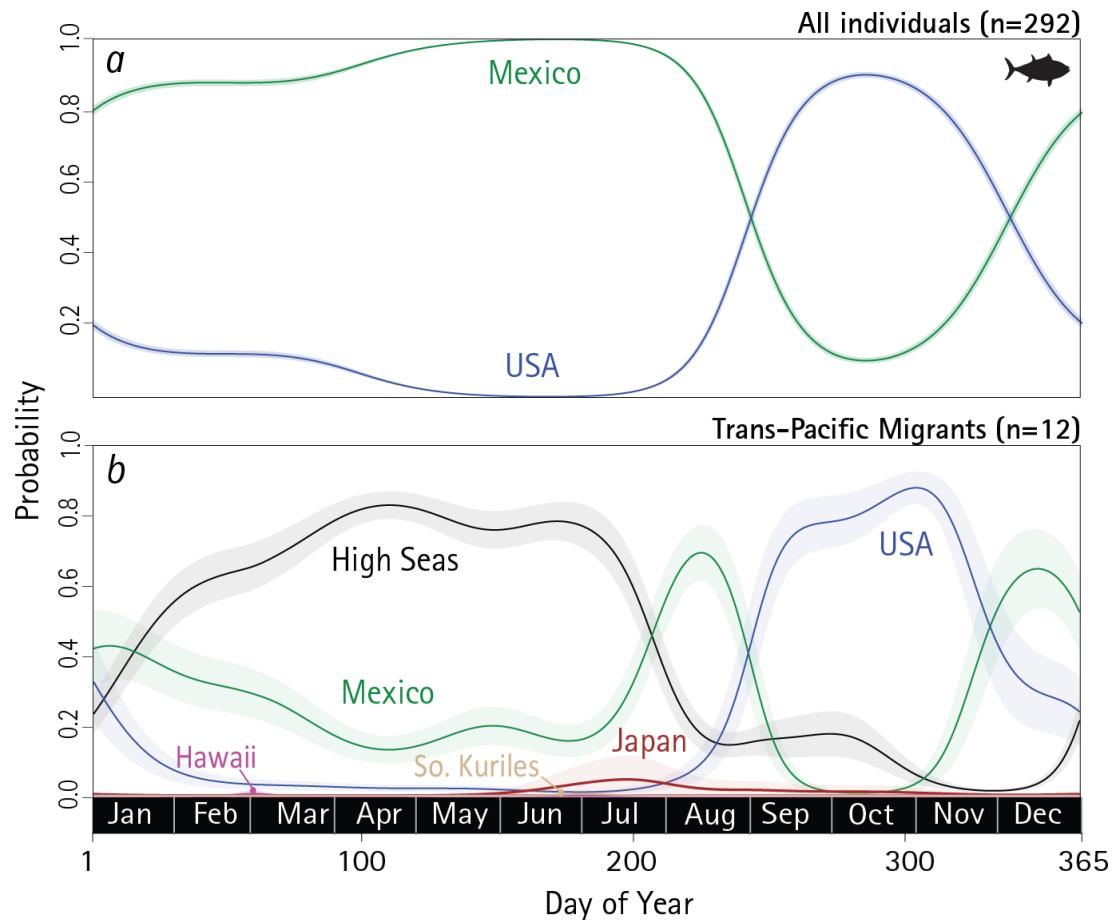
### **This PDF file includes:**

Supplementary Figures 1-10

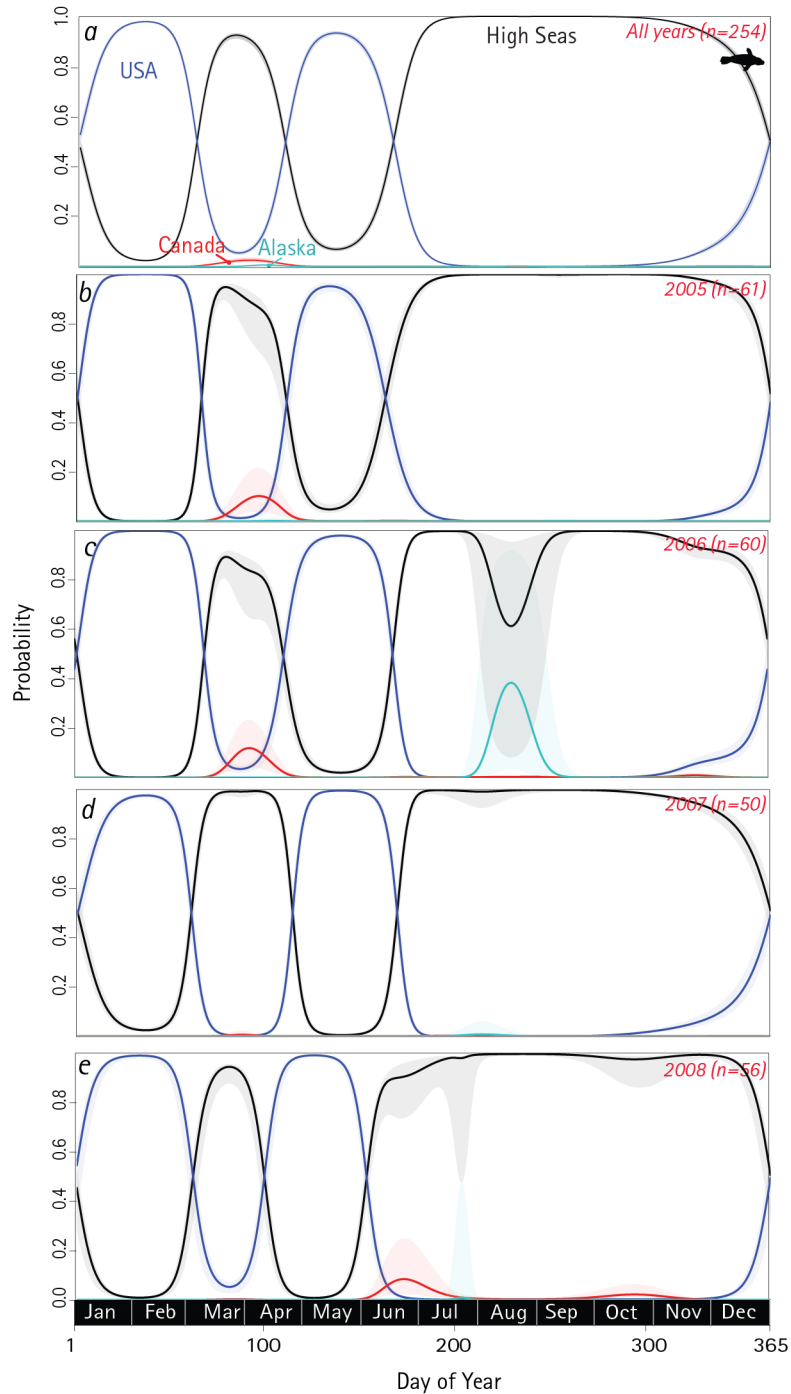
Supplementary Tables 1-5



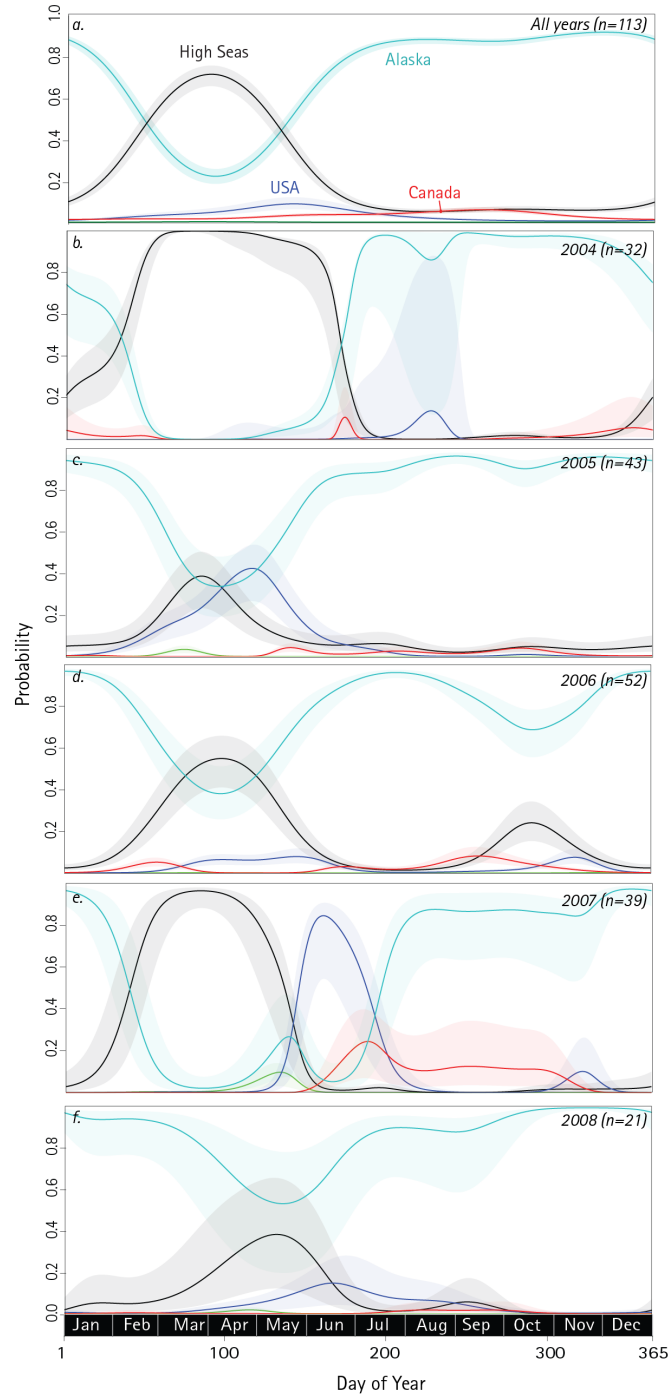
**Supplementary Figure 1. Seasonal probability of occurrence of female Northern elephant seals from two breeding populations (Mexico and USA) in Pacific Ocean EEZs and high seas from electronic tracking.** a) females from rookery at Año Nuevo State Reserve, California, USA. b) females from rookery at Islas San Benito, Baja California, Mexico. Lines represent the estimated effect of day of the year on the probability of a randomly selected individual from the tracked population occurring in each region. Shading represents the inter-quartile range of estimates simulated from the posterior distribution of the model parameters. Total sample size for each population is represented by n; typically, unique sets of individuals were tracked during the post-breeding and post-moult migrations (see Methods). Model details: Methods and Supplementary Table 4.



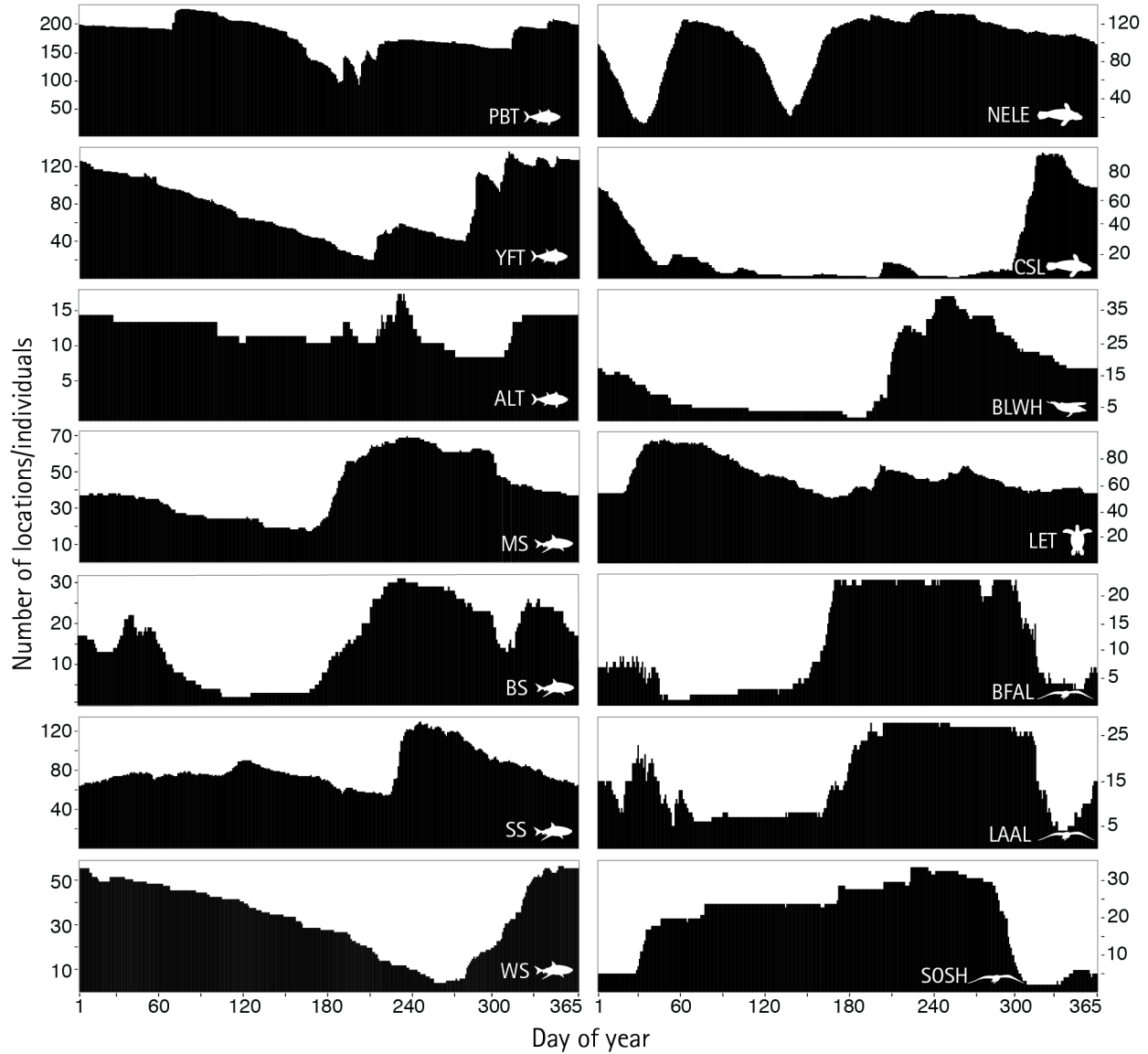
**Supplementary Figure 2. Differences in probability of occurrence of two life history stages of Pacific Bluefin tuna in Pacific Ocean EEZs and high seas on each day of year from electronic tracking.** a) all individuals b) those individuals that undertook a trans-Pacific migration (n=12). Lines represent the estimated effect of day of the year on the probability of a randomly selected individual from the tracked population occurring in each region. Shading represents the inter-quartile range of estimates simulated from the posterior distribution of the model parameters. Total sample size for each life history stage is represented by n; tracking duration varied among individuals (see Methods). Model details: Methods and Supplementary Table 4.



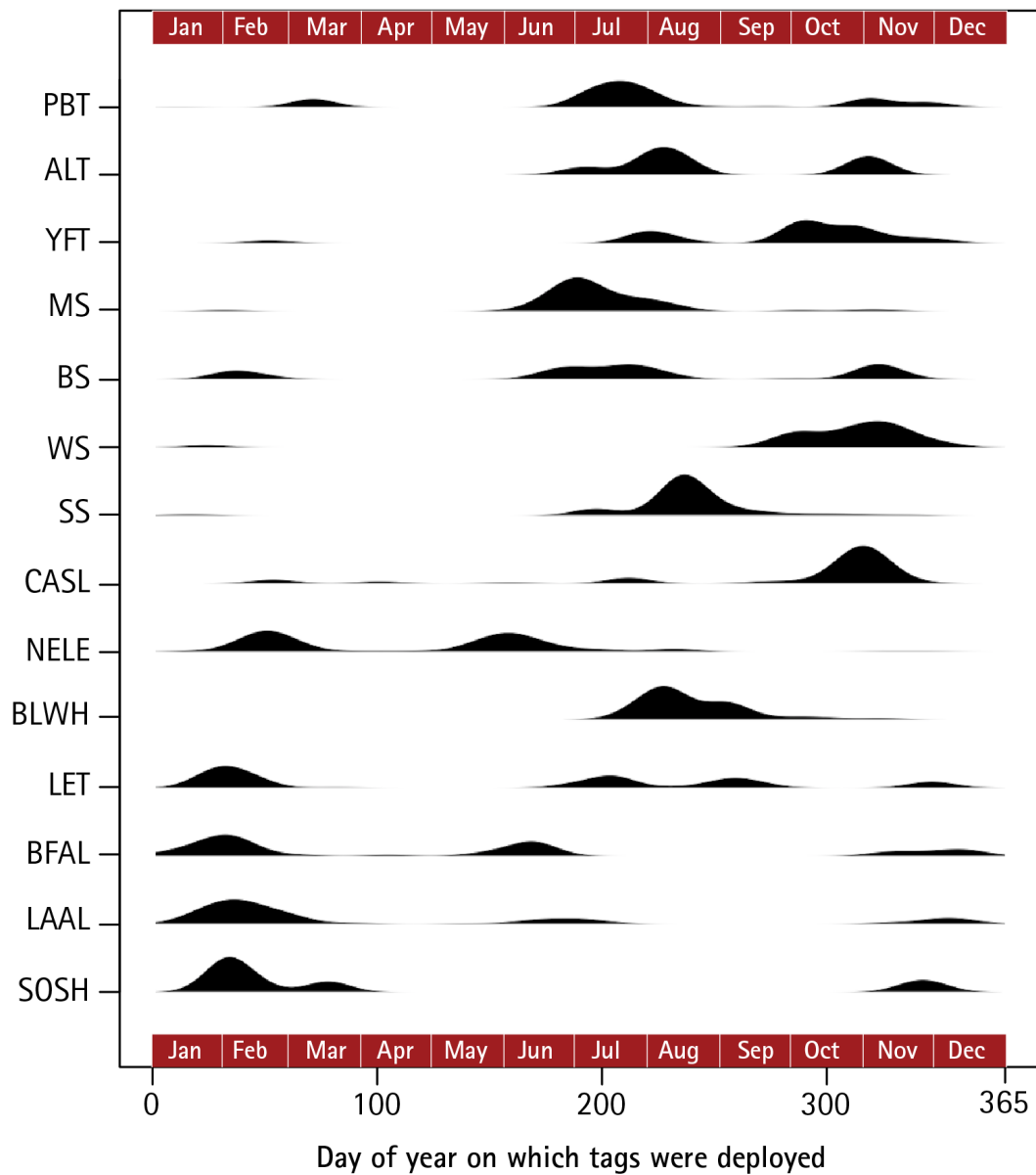
**Supplementary Figure 3. Seasonal probability of occurrence of female Northern elephant seals (tagged in USA) in Pacific Ocean EEZs and high seas from electronic tracking.** a) all years combined (2002-2009) and b-e) 2005-2008. Lines represent the estimated effect of day of the year on the probability of a randomly selected individual from the tracked population occurring in each region. Shading represents the inter-quartile range of estimates simulated from the posterior distribution of the model parameters. Total sample size for each year is represented by  $n$ ; typically, unique sets of individuals were tracked during the post-breeding and post-moult migrations (see Methods). Model details: Methods and Supplementary Table 4.



**Supplementary Figure 4. Seasonal probability of occurrence of female salmon shark in Pacific Ocean EEZs and high seas from electronic tracking.** a) all years combined (2002-2008) and b-f) 2004-2008. Lines represent the estimated effect of day of the year on the probability of a randomly selected individual from the tracked population occurring in each region. Shading represents the inter-quartile range of estimates simulated from the posterior distribution of the model parameters. Total sample size for each life history stage is represented by n; tracking duration varied among individuals (see Methods). Model details: Methods and Supplementary Table 4.

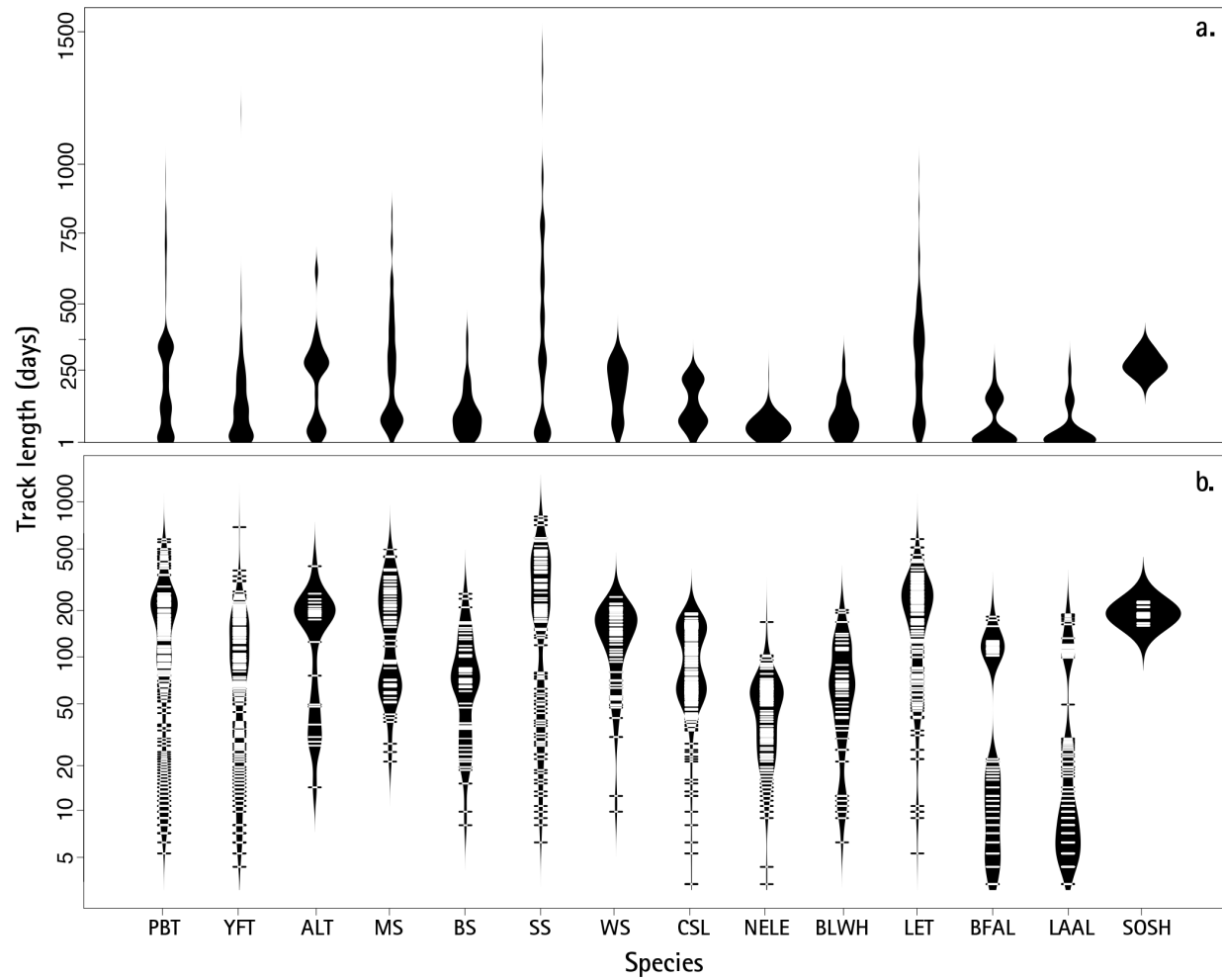


**Supplementary Figure 5. Frequency histograms of electronic tagging locations available for every day of the year during the tagging period 2000-2009.** Species codes: PBT, Pacific bluefin tuna; YFT, yellowfin tuna; ALT, albacore tuna; MS, shortfin mako shark; BS, blue shark; SS, salmon shark; WS, white shark; NELE, northern elephant seal; CASL, California sea lion; BLWH, blue whale; LET (CR/WP/CA), leatherback turtle, Costa Rica/western Pacific/California; BFAL, black-footed albatross; LAAL, Laysan albatross; SOSH, sooty shearwater.

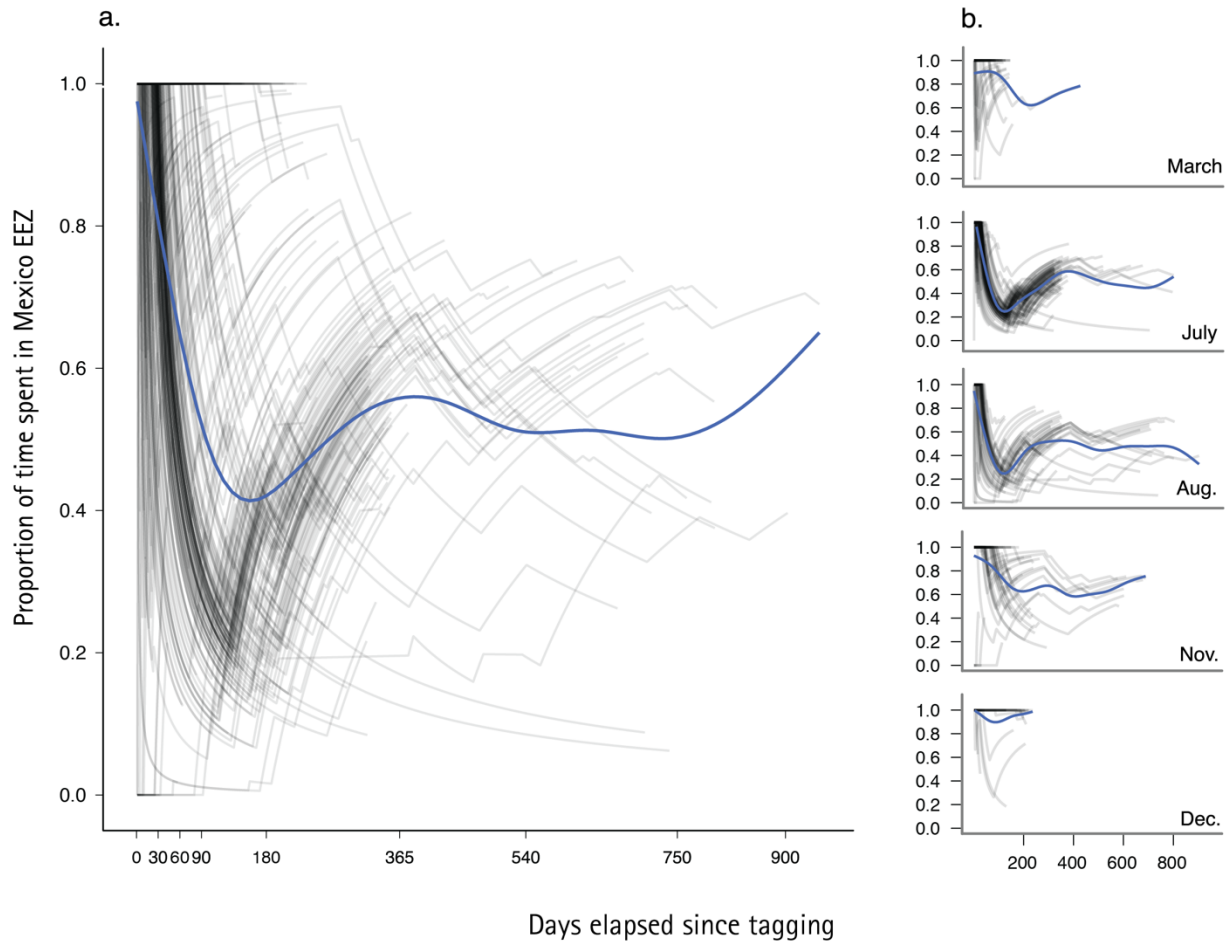


**Supplementary Figure 6. Distribution of tag deployment dates by species.** Species codes: PBT, Pacific bluefin tuna; ALT, albacore tuna; YFT, yellowfin tuna; MS, shortfin mako shark; BS, blue shark; WS, white shark; SS, salmon shark; CASL, California sea lion; NELE, northern elephant seal; BLWH, blue whale; LET, leatherback turtle; BFAL, black-footed albatross; LAAL, Laysan albatross; SOSH, sooty shearwater.

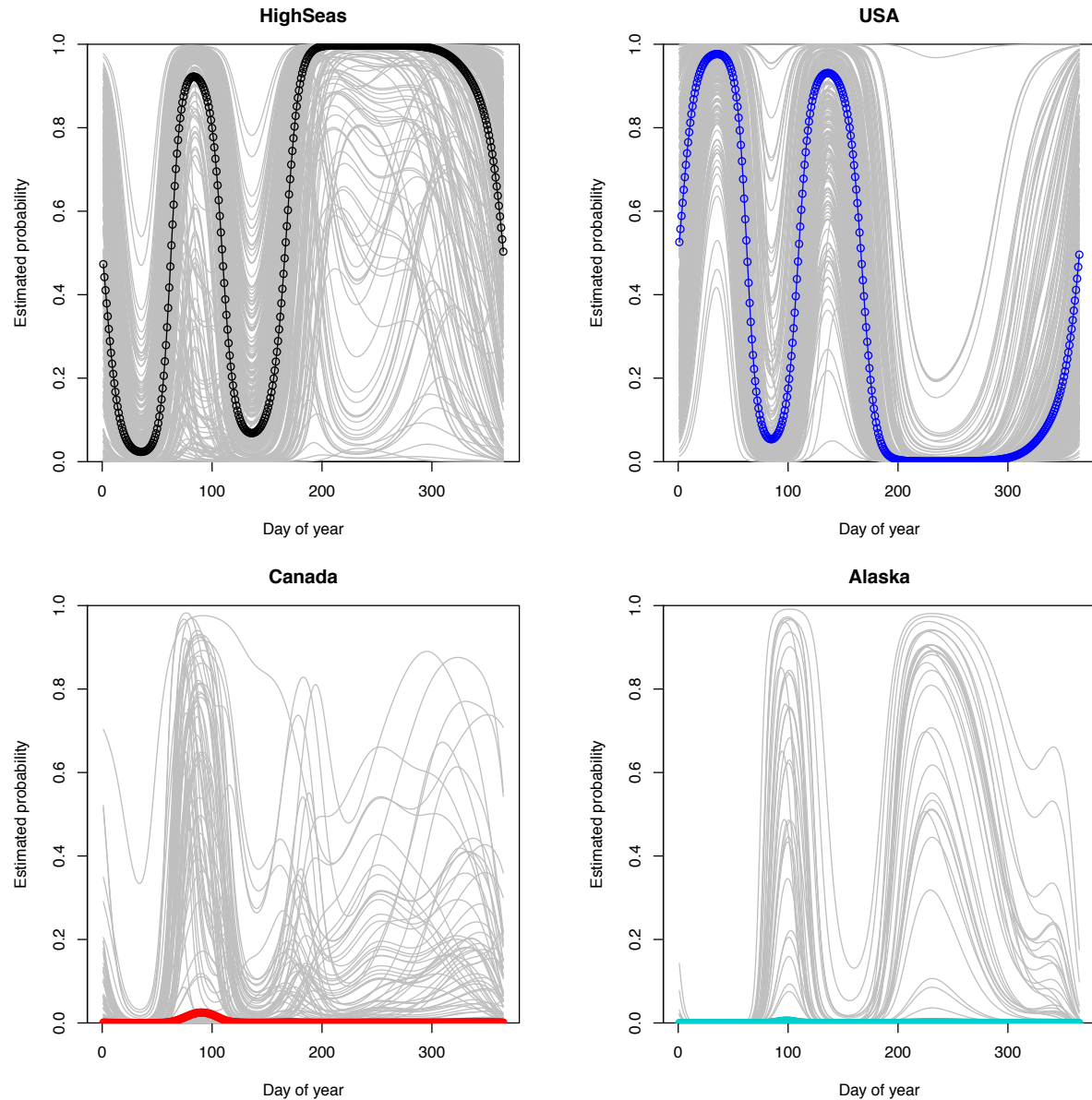




**Supplementary Figure 7. Distribution of individual tracking durations by species.** A) on a linear scale and B) on a log scale. Species codes: PBT, Pacific bluefin tuna; YFT, yellowfin tuna; ALT, albacore tuna; MS, shortfin mako shark; BS, blue shark; SS, salmon shark; WS, white shark; CSL, California sea lion; NELE, northern elephant seal; BLWH, blue whale; LET, leatherback turtle (all nesting populations); BFAL, black-footed albatross; LAAL, Laysan albatross; SOSH, sooty shearwater.

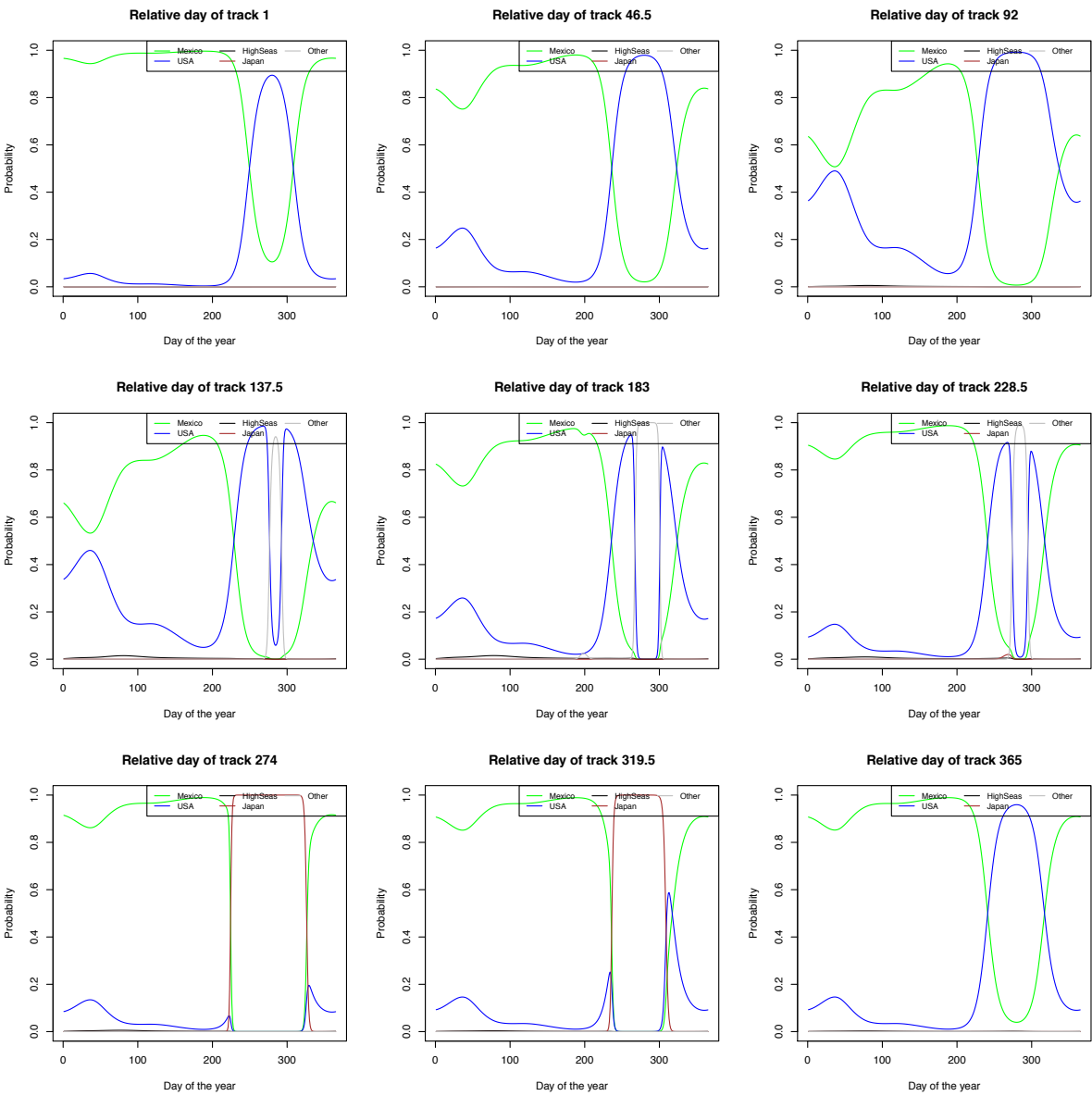


**Supplementary Figure 8. Effect of track duration and timing of tag deployment on proportion of time spent by Pacific bluefin tuna in the Mexican EEZ.** a) Running cumulative proportion of time spent in Mexican EEZ by individuals (light grey lines) and b) grouped by tag deployment month. Blue lines are loess smooths of the data representing the population mean.



**Supplementary Figure 9. Individual differences in seasonal probability of female northern elephant seal (tagged in USA) occurrence in Pacific Ocean EEZs and the high seas from electronic tagging.**

Grey lines represent the predicted probability for each unique individual. Colored solid lines represent population-level predictions derived by setting the random intercept effect of individual in the model to zero (presented in Fig. 2), and circles represent the predicted probability on each day averaged across individuals (averaged on the link scale and transformed to probabilities).



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**Supplementary Figure 10. Effect of including a relative-day-of-track term in models predicting probability of occurrence of Pacific bluefin tuna in Pacific Ocean EEZs and the high seas on each day of the year.** An expected decrease in the predicted probability of being in the Mexico EEZ (the tagging EEZ) occurred during the early part of a track, but the predicted probability increased later in the track and exhibited non-intuitive patterns for some days of the year.

**Supplementary Table 1. Number of tags deployed, number of individuals with active tags, and number of daily location estimates by year and species for the subset of the TOPP dataset analyzed and additional data for leatherback turtles from the western Pacific population.** Species codes: PBT, Pacific bluefin tuna; YFT, yellowfin tuna; ALT, albacore tuna; MS, shortfin mako shark; BS, blue shark; SS, salmon shark; WS, white shark; NELE, northern elephant seal; CASL, California sea lion; BLWH, blue whale; LET (CR/WP/CA), leatherback turtle, Costa Rica/western Pacific/California; BFAL, black-footed albatross; LAAL, Laysan albatross; SOSH, sooty shearwater. Geographic coordinates for deployment locations provided in <sup>1,2</sup>.

|                      | PBT        | YFT        | ALT       | MS        | BS        | SS         | WS        | NELE       | CASL       | BLWH      | LET<br>(CR) | LET<br>(WP) | LET<br>(CA) | BFAL      | LAAL      | SOSH      | TOTAL        |
|----------------------|------------|------------|-----------|-----------|-----------|------------|-----------|------------|------------|-----------|-------------|-------------|-------------|-----------|-----------|-----------|--------------|
| <b>Tags deployed</b> |            |            |           |           |           |            |           |            |            |           |             |             |             |           |           |           |              |
| 2000                 |            |            |           |           |           |            | 1         |            |            |           |             |             | 1           |           |           |           |              |
| 2001                 |            |            |           |           |           |            | 5         |            |            |           |             | 7           | 2           |           |           |           | 14           |
| 2002                 | 45         | 13         |           |           | 4         | 10         | 1         | 4          |            |           |             |             | 8           | 4         | 5         |           | 94           |
| 2003                 | 80         | 22         | 7         | 4         | 3         | 14         | 2         | 6          | 32         |           |             | 18          | 6           | 16        | 16        |           | 226          |
| 2004                 | 6          | 40         | 8         | 15        | 19        | 20         | 7         | 36         | 14         | 18        | 26          | 2           | 7           | 4         | 9         |           | 231          |
| 2005                 | 78         | 62         | 5         | 6         | 1         | 26         | 21        | 61         | 43         | 14        | 7           | 23          | 5           | 33        | 37        | 24        | 446          |
| 2006                 | 16         | 53         |           | 13        | 12        | 24         | 21        | 56         | 21         | 7         |             | 18          |             | 13        | 11        |           | 265          |
| 2007                 | 8          | 17         |           | 12        | 11        | 16         | 7         | 40         | 17         | 11        | 11          | 17          | 7           |           |           |           | 174          |
| 2008                 | 59         | 17         | 2         | 5         | 1         | 3          |           | 51         | 8          | 2         |             |             |             |           | 1         |           | 149          |
| 2009                 |            |            |           | 12        | 8         |            |           | 27         |            |           |             |             |             |           |           |           | 47           |
| <b>Total</b>         | <b>292</b> | <b>224</b> | <b>22</b> | <b>67</b> | <b>59</b> | <b>113</b> | <b>65</b> | <b>281</b> | <b>135</b> | <b>52</b> | <b>44</b>   | <b>85</b>   | <b>36</b>   | <b>70</b> | <b>79</b> | <b>24</b> | <b>1,648</b> |
| <b>Active tags</b>   |            |            |           |           |           |            |           |            |            |           |             |             |             |           |           |           |              |
| 2001                 |            |            |           |           |           |            | 6         |            |            |           |             | 7           | 3           |           |           |           | 16           |
| 2002                 | 45         | 13         |           |           | 4         | 10         | 5         | 4          |            |           |             | 5           | 7           | 4         | 5         |           | 102          |
| 2003                 | 120        | 28         | 7         | 4         | 3         | 24         | 3         | 7          | 32         |           |             | 18          | 10          | 18        | 21        |           | 295          |
| 2004                 | 96         | 56         | 15        | 17        | 20        | 32         | 9         | 41         | 18         | 18        | 26          | 9           | 13          | 4         | 13        |           | 387          |
| 2005                 | 89         | 92         | 10        | 19        | 13        | 43         | 28        | 82         | 47         | 18        | 20          | 25          | 11          | 37        | 42        | 24        | 600          |
| 2006                 | 47         | 88         | 3         | 16        | 12        | 52         | 42        | 85         | 52         | 10        | 4           | 28          | 4           | 13        | 11        | 5         | 472          |
| 2007                 | 25         | 33         |           | 17        | 13        | 39         | 23        | 55         | 29         | 14        | 11          | 35          | 7           |           |           |           | 301          |
| 2008                 | 65         | 29         | 2         | 17        | 4         | 21         | 4         | 66         | 17         | 8         | 4           | 17          | 6           |           | 1         |           | 261          |
| 2009                 | 4          | 11         |           | 20        | 9         | 11         |           | 39         | 8          |           |             |             |             |           | 1         |           | 103          |

Supplementary Table  
1 cont.

|                        | PBT           | YFT           | ALT          | MS            | BS           | SS            | WS            | NELE          | CASL         | BLWH         | LET<br>(CR)   | LET<br>(WP)   | LET<br>(CA)  | BFA          | LAAL         | SOSH         | TOTAL          |
|------------------------|---------------|---------------|--------------|---------------|--------------|---------------|---------------|---------------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|--------------|----------------|
| <b>Daily locations</b> |               |               |              |               |              |               |               |               |              |              |               |               |              |              |              |              |                |
| 2001                   |               |               |              |               |              |               |               |               |              |              |               | 98            | 505          |              |              |              | <b>603</b>     |
| 2002                   | 4,916         | 548           |              |               | 479          | 1,121         | 543           | 321           |              |              |               | 335           | 744          | 35           | 75           |              | <b>9,117</b>   |
| 2003                   | 22,369        | 2,833         | 338          | 613           | 452          | 2,455         | 168           | 1,034         | 1,096        |              |               | 2,019         | 1,737        | 247          | 294          |              | <b>35,655</b>  |
| 2004                   | 18,735        | 4,696         | 2,357        | 2,285         | 843          | 3,439         | 464           | 5,312         | 542          | 1,289        | 5,958         | 836           | 1,746        | 22           | 565          |              | <b>49,089</b>  |
| 2005                   | 8,685         | 8,977         | 1,653        | 2,900         | 1,142        | 5,836         | 1,696         | 9,110         | 1,910        | 1,130        | 2,208         | 4,006         | 1,676        | 1,927        | 2,426        | 5,104        | <b>60,386</b>  |
| 2006                   | 4,787         | 5,271         | 243          | 1,667         | 538          | 7,412         | 6,037         | 7,155         | 2,073        | 766          | 413           | 3,147         | 346          | 2,006        | 2,033        | 1,493        | <b>45,387</b>  |
| 2007                   | 2,411         | 3,288         |              | 2,741         | 1,222        | 4,748         | 2,489         | 4,836         | 1,023        | 1,085        | 2,296         | 6,896         | 755          |              |              |              | <b>33,790</b>  |
| 2008                   | 2,782         | 2,341         | 73           | 3,172         | 356          | 3,392         | 574           | 6,150         | 658          | 419          | 458           | 1,954         | 1,472        |              | 20           |              | <b>23,821</b>  |
| 2009                   | 774           | 1,035         |              | 1,612         | 724          | 1,399         |               | 2,275         | 203          |              |               |               |              |              | 11           |              | <b>8,033</b>   |
| <b>Total</b>           | <b>65,459</b> | <b>28,989</b> | <b>4,664</b> | <b>14,990</b> | <b>5,756</b> | <b>29,802</b> | <b>11,971</b> | <b>36,193</b> | <b>7,505</b> | <b>4,689</b> | <b>11,333</b> | <b>19,291</b> | <b>8,981</b> | <b>4,237</b> | <b>5,424</b> | <b>6,597</b> | <b>265,881</b> |

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57 **Supplementary Table 2: Percentage of tagged individuals tracked within EEZs and the high seas.** Species codes: PBT, Pacific bluefin tuna;  
58 YFT, yellowfin tuna; ALT, albacore tuna; MS, shortfin mako shark; BS, blue shark; SS, salmon shark; WS, white shark; NELE, northern elephant seal;  
59 CASL, California sea lion; BLWH, blue whale; LET (CR/WP/CA), leatherback turtle, Costa Rica/western Pacific/California; BFAL, black-footed  
60 albatross; LAAL, Laysan albatross; SOSH, sooty shearwater. Grey shading represents deployment EEZs. Last two columns correspond to the percent  
61 of total individuals tracked within each EEZ and number of species recorded within each EEZ.

|  |                          | % of individuals |     |     |    |    |     |    |      |     |      |     |      |      |      | % Tot. | Spp. |
|--|--------------------------|------------------|-----|-----|----|----|-----|----|------|-----|------|-----|------|------|------|--------|------|
| EEZ*                                     | Country†                 | PBT              | YFT | ALT | MS | BS | SS  | WS | NELE | CSL | BLWH | LET | BFAL | LAAL | SOSH |        |      |
| Alaska                                   | United States of America | 0                | 0   | 0   | 0  | 0  | 100 | 0  | 15   | 0   | 0    | 0   | 17   | 35   | 38   | 12     | 5    |
| American Samoa                           | United States of America | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 0   | 0    | 0    | 17   | <1     | 1    |
| Australia                                | Australia                | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 7   | 0    | 0    | 21   | 1      | 2    |
| Brunei                                   | Brunei                   | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 2   | 0    | 0    | 0    | <1     | 1    |
| Canada                                   | Canada                   | <1               | 0   | 0   | 0  | 8  | 58  | 0  | 27   | 0   | 6    | 0   | 23   | 6    | 25   | 11     | 8    |
| Chile                                    | Chile                    | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 1   | 0    | 0    | 17   | <1     | 2    |
| China                                    | China                    | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1     | 1    |
| Clipperton Island                        | France                   | 0                | <1  | 0   | 0  | 5  | 0   | 0  | 0    | 0   | 0    | 0   | 0    | 0    | 4    | <1     | 3    |
| Cook Islands                             | New Zealand              | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 0   | 0    | 0    | 58   | 1      | 1    |
| Costa Rica                               | Costa Rica               | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 2    | 27  | 0    | 0    | 0    | 3      | 2    |
| Desventuradas                            | Chile                    | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 4    | <1     | 2    |
| Easter Island                            | Chile                    | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 1   | 0    | 0    | 4    | <1     | 2    |
| El Salvador                              | El Salvador              | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 2   | 0    | 0    | 0    | <1     | 1    |
| Fiji                                     | Fiji                     | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 3   | 0    | 0    | 8    | <1     | 2    |
| French Polynesia                         | France                   | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 0   | 0    | 0    | 58   | 1      | 1    |
| Galapagos Islands                        | Ecuador                  | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 24  | 0    | 0    | 0    | 2      | 1    |
| Guatemala                                | Guatemala                | 0                | <1  | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 2    | 0   | 0    | 0    | 0    | <1     | 3    |
| Hawaii                                   | United States of America | <1               | 0   | 5   | 1  | 0  | 0   | 19 | <1   | 0   | 0    | 10  | 100  | 100  | 79   | 12     | 9    |
| Howland Island and Baker Island          | United States of America | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 2   | 0    | 0    | 13   | <1     | 2    |
| Indonesia                                | Indonesia                | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 36  | 0    | 0    | 0    | 3      | 1    |
| Japan                                    | Japan                    | 2                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | 4   | 0    | 5    | 58   | 2      | 4    |
| Japan-South Korea Joint Development Zone | Japan / South Korea      | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1     | 1    |
| Jarvis Island                            | United States of America | 0                | 0   | 0   | 0  | 0  | 0   | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 8    | <1     | 2    |

Supplementary

Table 2 cont.

| EEZ*                              | Country†                             | PBT | YFT | ALT | MS | BS | SS | WS | NELE | CSL | BLWH | LET | BFAL | LAAL | SOSH | % Tot. | Spp. |
|-----------------------------------|--------------------------------------|-----|-----|-----|----|----|----|----|------|-----|------|-----|------|------|------|--------|------|
| Johnston Atoll                    | United States of America             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 3   | 4    | 4    | 17   | 1      | 4    |
| Kiribati                          | Kiribati                             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 4   | 0    | 1    | 8    | 1      | 3    |
| Line Group                        | Kiribati                             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 3   | 0    | 0    | 42   | 1      | 2    |
| Macquarie Island                  | Australia                            | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | 29   | <1     | 1    |
| Malaysia                          | Malaysia                             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 6   | 0    | 0    | 0    | 1      | 1    |
| Marshall Islands                  | Marshall Islands                     | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 8   | 0    | 0    | 4    | 1      | 2    |
| Mexico                            | Mexico                               | 99  | 99  | 91  | 88 | 76 | 11 | 3  | 12   | 17  | 46   | 4   | 1    | 0    | 17   | 47     | 14   |
| Micronesia                        | Micronesia                           | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 16  | 0    | 0    | 0    | 2      | 1    |
| Nauru                             | Nauru                                | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 2   | 0    | 0    | 0    | <1     | 1    |
| New Caledonia                     | France                               | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 8   | 0    | 0    | 0    | 1      | 1    |
| New Zealand                       | New Zealand                          | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 3   | 0    | 0    | 100  | 2      | 2    |
| Nicaragua                         | Nicaragua                            | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 2    | 10  | 0    | 0    | 4    | 1      | 3    |
| Niue                              | New Zealand                          | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 17   | <1     | 2    |
| Norfolk Island                    | Australia                            | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 2   | 0    | 0    | 38   | 1      | 2    |
| Northern Mariana Islands and Guam | United States of America             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 4   | 0    | 0    | 0    | <1     | 1    |
| Palau                             | Palau                                | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 22  | 0    | 0    | 0    | 2      | 1    |
| Palmyra Atoll                     | United States of America             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 5   | 0    | 0    | 8    | 1      | 2    |
| Panama                            | Panama                               | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1     | 1    |
| Papua New Guinea                  | Papua New Guinea                     | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 17  | 0    | 0    | 0    | 2      | 1    |
| Paracel Islands                   | Disputed: China/<br>Taiwan/ Viet Nam | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1     | 1    |
| Peru                              | Peru                                 | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 4    | <1     | 2    |
| Philippines                       | Philippines                          | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 8   | 0    | 0    | 0    | 1      | 1    |
| Phoenix Group                     | Kiribati                             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 1   | 0    | 1    | 25   | 1      | 3    |
| Pitcairn                          | United Kingdom                       | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 13   | <1     | 2    |
| Russia                            | Russia                               | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 1    | 24   | 63   | 2      | 4    |
| Samoa                             | Samoa                                | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | 8    | <1     | 1    |
| Solomon Islands                   | Solomon Islands                      | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 12  | 0    | 0    | 0    | 1      | 1    |
| South Korea                       | South Korea                          | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1     | 1    |
| Southern Kuriles                  | Disputed: Russia<br>/ Japan          | <1  | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 4    | 38   | 1      | 3    |



Supplementary  
Table 2 cont.

| EEZ*   | Country†   | PBT | YFT | ALT | MS  | BS | SS  | WS  | NELE | CSL | BLWH | LET | BFAL | LAAL | SOSH | % Tot. | Spp. |
|--|--|-----|-----|-----|-----|----|-----|-----|------|-----|------|-----|------|------|------|--------|------|
| Spratly Islands  | Disputed: China / Taiwan / Viet Nam / Philippines / Brunei / Malaysia<br>Disputed: China / | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | 4   | 0    | 0    | 0    | <1     | 1    |
| Taiwan   | Taiwan   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | 1   | 0    | 0    | 0    | <1     | 1    |
| Tokelau  | New Zealand  | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | 0   | 0    | 0    | 21   | <1     | 1    |
| Tonga  | Tonga  | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | <1  | 0    | 0    | 29   | <1     | 2    |
| Tuvalu   | Tuvalu   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | <1  | 0    | 0    | 4    | <1     | 2    |
| United States of America   | United States of America   | 71  | 10  | 82  | 100 | 83 | 44  | 100 | 97   | 84  | 100  | 20  | 23   | 0    | 25   | 59     | 14   |
| Vanuatu  | Vanuatu  | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | 2   | 0    | 0    | 4    | <1     | 2    |
| Viet Nam   | Viet Nam   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | 2   | 0    | 0    | 0    | <1     | 1    |
| Wake Island  | United States of America   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1     | 1    |
| Wallis and Futuna  | France   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0    | 0   | 0    | 0   | 0    | 0    | 4    | <1     | 1    |
| High Seas  |  | 24  | 7   | 55  | 39  | 56 | 67  | 85  | 85   | 2   | 27   | 68  | 70   | 85   | 100  | 48     | 14   |
| <b>Total individuals of each species (Total individuals = 1,648, n=14 species)</b> |  | 292 | 224 | 22  | 67  | 59 | 113 | 65  | 281  | 135 | 52   | 165 | 70   | 79   | 24   |        |      |
| <b>EEZs visited by each species (Total EEZs visited by all individuals = 63)‡</b>  |  | 6   | 4   | 4   | 3   | 4  | 4   | 3   | 5    | 2   | 6    | 49  | 7    | 9    | 39   |        |      |

\* All island territories and EEZs disjunct from a mainland EEZ were considered separately. Islands territories located within a mainland EEZ (for example, Hong Kong and Macau) were considered to be part of the mainland EEZ

† Some territorial claims and/or marine boundaries are disputed

‡ Pacific Ocean EEZs not visited by tracked animals during TOPP study: Cambodia, Colombia, North Korea, Singapore, Thailand, Timor-Leste

67 **Supplementary Table 3: Percentage of daily locations within EEZs and the high seas.** Species codes: PBT, Pacific bluefin tuna; YFT, yellowfin  
68 tuna; ALT, albacore tuna; MS, shortfin mako shark; BS, blue shark; SS, salmon shark; WS, white shark; NELE, northern elephant seal; CASL, California  
69 sea lion; BLWH, blue whale; LET (CR/WP/CA), leatherback turtle, Costa Rica/western Pacific/California; BFAL, black-footed albatross; LAAL, Laysan  
70 albatross; SOSH, sooty shearwater. Grey shading represents deployment EEZs. Last column corresponds to the percent of total locations (of all  
71 species) that occurred within each EEZ.  
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|                   |                          | % of daily locations |     |     |    |    |    |    |      |     |      |     |      |      |      | % Total |
|-------------------|--------------------------|----------------------|-----|-----|----|----|----|----|------|-----|------|-----|------|------|------|---------|
| EEZ*              | Country†                 | PBT                  | YFT | ALT | MS | BS | SS | WS | NELE | CSL | BLWH | LET | BFAL | LAAL | SOSH |         |
| Alaska            | United States of America | 0                    | 0   | 0   | 0  | 0  | 51 | 0  | 5    | 0   | 0    | 0   | 9    | 12   | 3    | 7       |
| American Samoa    | United States of America | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | <1   | <1      |
| Australia         | Australia                | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 3   | 0    | 0    | 0    | <1      |
| Brunei            | Brunei                   | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | 0    | <1      |
| Canada            | Canada                   | <1                   | 0   | 0   | 0  | 1  | 7  | 0  | 6    | 0   | <1   | 0   | 8    | 1    | 1    | 1       |
| Chile             | Chile                    | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 1    | <1      |
| China             | China                    | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1      |
| Clipperton Island | France                   | 0                    | <1  | 0   | 0  | 1  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | <1   | <1      |
| Cook Islands      | New Zealand              | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | <1   | <1      |
| Costa Rica        | Costa Rica               | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | <1   | 5   | 0    | 0    | 0    | 1       |
| Desventuradas     | Chile                    | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| Easter Island     | Chile                    | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| El Salvador       | El Salvador              | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1      |
| Fiji              | Fiji                     | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| French Polynesia  | France                   | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | 1    | <1      |
| Galapagos Islands | Ecuador                  | 0                    | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 2   | 0    | 0    | 0    | <1      |
| Guatemala         | Guatemala                | 0                    | <1  | 0   | 0  | 0  | 0  | 0  | 0    | 0   | <1   | 0   | 0    | 0    | 0    | <1      |
| Hawaii            | United States of America | <1                   | 0   | <1  | <1 | 0  | 0  | 6  | <1   | 0   | 0    | 1   | 9    | 6    | 1    | 1       |

Supplementary  
Table 3 cont.

| EEZ*                                     | Country†                 | PBT | YFT | ALT | MS | BS | SS | WS | NELE | CSL | BLWH | LET | BFAL | LAAL | SOSH | % Total |
|--|--------------------------|-----|-----|-----|----|----|----|----|------|-----|------|-----|------|------|------|---------|
| Howland Island and Baker Island          | United States of America | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| Indonesia                                | Indonesia                | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 13  | 0    | 0    | 0    | 2       |
| Japan                                    | Japan                    | 1   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 1   | 0    | 1    | 11   | 1       |
| Japan-South Korea Joint Development Zone | Japan / South Korea      | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1      |
| Jarvis Island                            | United States of America | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| Johnston Atoll                           | United States of America | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | <1   | <1   | <1   | <1      |
| Kiribati                                 | Kiribati                 | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | <1   | <1   | <1      |
| Line Group                               | Kiribati                 | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| Macquarie Island                         | Australia                | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | <1   | <1      |
| Malaysia                                 | Malaysia                 | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 2   | 0    | 0    | 0    | <1      |
| Marshall Islands                         | Marshall Islands         | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 1   | 0    | 0    | <1   | <1      |
| Mexico                                   | Mexico                   | 61  | 94  | 51  | 34 | 33 | 1  | <1 | 5    | 8   | 28   | 2   | <1   | 0    | 2    | 31      |
| Micronesia                               | Micronesia               | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 3   | 0    | 0    | 0    | <1      |
| Nauru                                    | Nauru                    | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1      |
| New Caledonia                            | France                   | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 1   | 0    | 0    | 0    | <1      |
| New Zealand                              | New Zealand              | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 1   | 0    | 0    | 12   | <1      |
| Nicaragua                                | Nicaragua                | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | <1   | <1  | 0    | 0    | <1   | <1      |
| Niue                                     | New Zealand              | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| Norfolk Island                           | Australia                | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |

Supplementary  
Table 3 cont.

| EEZ*                              | Country†                          | PBT | YFT | ALT | MS | BS | SS | WS | NELE | CSL | BLWH | LET | BFAL | LAAL | SOSH | % Total |
|-----------------------------------|-----------------------------------|-----|-----|-----|----|----|----|----|------|-----|------|-----|------|------|------|---------|
| Northern Mariana Islands and Guam | United States of America          | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1      |
| Palau                             | Palau                             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 2   | 0    | 0    | 0    | <1      |
| Palmyra Atoll                     | United States of America          | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| Panama                            | Panama                            | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 1   | 0    | 0    | 0    | <1      |
| Papua New Guinea                  | Papua New Guinea                  | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 3   | 0    | 0    | 0    | <1      |
| Paracel Islands                   | Disputed: China/ Taiwan/ Viet Nam | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1      |
| Peru                              | Peru                              | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| Philippines                       | Philippines                       | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 5   | 0    | 0    | 0    | 1       |
| Phoenix Group                     | Kiribati                          | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | <1   | <1   | <1      |
| Pitcairn                          | United Kingdom                    | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | <1   | <1      |
| Russia                            | Russia                            | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | <1   | 9    | 8    | <1      |
| Samoa                             | Samoa                             | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 0    | <1   | <1      |
| Solomon Islands                   | Solomon Islands                   | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 3   | 0    | 0    | 0    | <1      |
| South Korea                       | South Korea                       | 0   | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | <1  | 0    | 0    | 0    | <1      |
| Southern Kuriles                  | Disputed: Russia / Japan          | <1  | 0   | 0   | 0  | 0  | 0  | 0  | 0    | 0   | 0    | 0   | 0    | 1    | 1    | <1      |

Supplementary  
Table 3 cont.

| EEZ*   | Country†  | PBT           | YFT           | ALT          | MS            | BS           | SS            | WS            | NELE          | CSL          | BLWH         | LET           | BFAL         | LAAL         | SOSH         | % Total |
|--|---|---------------|---------------|--------------|---------------|--------------|---------------|---------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|---------|
| Spratly Islands                                      | Disputed:<br>China /<br>Taiwan /<br>Viet Nam /<br>Philippines<br>/ Brunei /<br>Malaysia | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | <1            | 0            | 0            | 0            | <1      |
| Taiwan   | Disputed:<br>China /<br>Taiwan  | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | <1            | 0            | 0            | 0            | <1      |
| Tokelau  | New<br>Zealand  | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | 0             | 0            | 0            | <1           | <1      |
| Tonga  | Tonga   | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | <1            | 0            | 0            | 0            | <1      |
| Tuvalu   | Tuvalu  | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | <1            | 0            | 0            | <1           | <1      |
| United States<br>of America                          | United<br>States of<br>America  | 32            | 2             | 23           | 49            | 37           | 16            | 32            | 20            | 92           | 54           | 4             | 10           | 0            | 8            | 23      |
| Vanuatu  | Vanuatu   | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | <1            | 0            | 0            | <1           | <1      |
| Viet Nam   | Viet Nam  | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | <1            | 0            | 0            | 0            | <1      |
| Wake Island  | United<br>States of<br>America  | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | <1            | 0            | 0            | 0            | <1      |
| Wallis and<br>Futuna                                 | France  | 0             | 0             | 0            | 0             | 0            | 0             | 0             | 0             | 0            | 0            | 0             | 0            | 0            | <1           | <1      |
| High Seas  |   | 6             | 3             | 26           | 16            | 29           | 25            | 63            | 63            | <1           | 17           | 45            | 64           | 71           | 49           | 29      |
| <b>Number of tracking days<br/>(total = 265,881)</b> |   | <b>65,459</b> | <b>28,989</b> | <b>4,664</b> | <b>14,990</b> | <b>5,756</b> | <b>29,802</b> | <b>11,971</b> | <b>36,193</b> | <b>7,505</b> | <b>4,689</b> | <b>39,605</b> | <b>4,237</b> | <b>5,424</b> | <b>6,597</b> |         |

\* All island territories and EEZs disjunct from a mainland EEZ were considered separately. Islands territories located within a mainland EEZ (for example, Hong Kong and Macau) were considered to be part of the mainland EEZ

† Some territorial claims and/or marine boundaries are disputed

‡ Pacific Ocean EEZs not visited by tracked animals during TOPP study: Cambodia, Colombia, North Korea, Singapore, Thailand, Timor-Leste

**Supplementary Table 4: Percent deviance explained by multinomial models predicting seasonal occurrence in EEZs and the high seas from electronic tracking data.** Also listed for each model is the number of individuals, number of daily locations, and the fixed effect included in the model.

| MODELS  | PERCENT<br>DEVIANCE<br>EXPLAINED | # IND. | # LOCATIONS | FIXED EFFECT                      |
|---|----------------------------------|--------|-------------|-----------------------------------|
| <b>Pacific bluefin tuna</b> (all individuals) | 50.1%                            | 292    | 65,459      | Day of year                       |
| Trans-Pacific migrants                        | 44.0%                            | 12     | 7,002       | Day of year                       |
| <b>Albacore tuna</b>                          | 59.8%                            | 22     | 4,664       | Day of year                       |
| <b>White shark</b>                            | 68.1%                            | 65     | 11,971      | Day of year                       |
| <b>Shortfin mako shark</b>                    | 50.8%                            | 67     | 14,990      | Day of year                       |
| <b>Blue shark</b>                             | 51.8%                            | 59     | 5,756       | Day of year                       |
| <b>Salmon shark</b> (all years)               | 44.2%                            | 113    | 29,802      | Day of year                       |
| 2004  | 76.6%                            | 32     | 3,439       | Day of year                       |
| 2005  | 57.1%                            | 43     | 5,836       | Day of year                       |
| 2006  | 53.1%                            | 52     | 7,412       | Day of year                       |
| 2007  | 69.4%                            | 39     | 4,748       | Day of year                       |
| 2008  | 60.6%                            | 21     | 3,392       | Day of year                       |
| <b>Northern elephant seal</b>                 |                                  |        |             |                                   |
| Females Tagged in USA (all years)             | 61.2%                            | 231    | 29,835      | Day of year                       |
| 2005  | 68.1%                            | 61     | 6,410       | Day of year                       |
| 2006  | 71.3%                            | 60     | 5,554       | Day of year                       |
| 2007  | 65.8%                            | 50     | 4,439       | Day of year                       |
| 2008  | 66.1%                            | 56     | 5,388       | Day of year                       |
| Females Tagged in Mexico (2005-2006)          | 72.3%                            | 19     | 2,934       | Day of year                       |
| <b>Black-footed albatross</b>                 | 42.7%                            | 70     | 4,237       | Day of year                       |
| <b>Laysan albatross</b>                       | 44.1%                            | 79     | 5,424       | Day of year                       |
| <b>Sooty shearwater</b>                       | 56.3%                            | 24     | 6,597       | Day of year                       |
| <b>Leatherback turtle</b>                     |                                  |        |             |                                   |
| Eastern Pacific Costa Rica                    | 66.6%                            | 44     | 11,333      | Days elapsed after tag deployment |
| Western Pacific Jan-Feb Breeders              | 18.6%                            | 41     | 5,953       | Days elapsed after tag deployment |
| Western Pacific July-August Breeders          | 64.0%                            | 35     | 8,710       | Days elapsed after tag deployment |
| Western Pacific Calif. Foraging Grounds       | 70.3%                            | 34     | 8,620       | Days elapsed after tag deployment |
| <b>Blue whale</b>                             | 80.8%                            | 52     | 4,689       | Day of year                       |

**Supplementary Table 5: Percentage of the year marine predators are estimated to spend within Pacific Ocean EEZs and the high seas.** Uncertainty is represented by the interquartile range (25%, 75%). Percentages were estimated from results presented in Fig. 2 and Supplementary Figs. 1-2. Model details: Methods and Supplementary Table 4. Species codes: PBT, Pacific bluefin tuna (all individuals); PBT (TP), trans-Pacific migrants (see Supplementary Fig. 2); AT, albacore tuna; MS, shortfin mako shark; BS, blue shark; SS, salmon shark; WS, white shark; NELE (USA), female northern elephant seals from Año Nuevo State Reserve, California, USA rookery, NELE (MEX), females from Islas San Benito, Baja California, Mexico rookery; BLWH, blue whale; LET(CR), leatherback turtles from Costa Rica; BFAL, black-footed albatross; LAAL, Laysan albatross; SOSH, sooty shearwater. Percentages may not total 100 due to rounding. Leatherback turtles have a multi-year migratory cycle; estimates are for the first year of this cycle following breeding/tag deployment.

|                          | PBT              | PBT (TP)         | AT              | WS               | MS               | BS               | SS               | NELE<br>(USA)    | NELE<br>(MEX)    | BFAL             | LAAL             | SOSH             | LET (CR)         | BLWH             |
|--------------------------|------------------|------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <b>High Seas</b>         | 0.2<br>(0.2,0.3) | 44.9<br>(36,45)  | 12.2<br>(7,19)  | 62.5<br>(61, 64) | 3.7<br>(2, 5)    | 8.3<br>(6, 11)   | 23.7<br>(21, 27) | 66.6<br>(66, 67) | 36.5<br>(32, 38) | 66.7<br>(63, 68) | 74.5<br>(72, 76) | 65.9<br>(60, 66) | 79.2<br>(76, 80) | 30.3<br>(18, 36) |
| <b>USA</b>               | 28.7<br>(28, 30) | 25.7<br>(16, 27) | 27.6<br>(21,33) | 37.4<br>(36, 39) | 46.8<br>(42, 50) | 55.9<br>(51, 59) | 3.2<br>(2, 4)    | 33.1<br>(32, 34) | 7<br>(4, 13)     | 7.7<br>(6, 10)   |                  | <1<br>(0.1,0.1)  |                  | 55.8<br>(52, 57) |
| <b>Mexico</b>            | 71.1<br>(70, 72) | 28.3<br>(19, 29) | 60.2<br>(49,65) | <1<br>(0,0.1)    | 49.5<br>(44, 53) | 35.7<br>(31, 40) | <1<br>(0, 0.1)   |                  | 55.9<br>(35, 59) |                  |                  | <1<br>(0, 0.3)   |                  | 13.2<br>(7, 23)  |
| <b>Alaska</b>            |                  |                  |                 |                  |                  |                  | 70.0<br>(67, 72) | 0.1<br>(0, 0.1)  |                  | 1.0<br>(1, 2)    | 4.5<br>(3, 6)    | <1<br>(0.2, 1)   |                  |                  |
| <b>Canada</b>            |                  |                  |                 |                  |                  | <1<br>(0.1, 0.2) | 3.1<br>(3, 4)    | 0.3<br>(0.2,0.4) | <1<br>(0.3, 11)  | 2.7<br>(2, 4)    |                  |                  |                  |                  |
| <b>Hawaii</b>            |                  |                  | <1<br>(0,1)     | <1<br>(0.1,0.3)  |                  |                  |                  |                  |                  | 21.6<br>(20, 23) | 17.5<br>(16, 19) |                  |                  |                  |
| <b>Russia</b>            |                  |                  |                 |                  |                  |                  |                  |                  |                  |                  | 3.2<br>(3,4)     | 4.2<br>(3, 5)    |                  |                  |
| <b>Central Pac. Isl.</b> |                  |                  |                 |                  |                  |                  |                  |                  |                  |                  |                  | 3.8<br>(3.8, 4)  |                  |                  |
| <b>Japan</b>             | <1<br>(0, 0.01)  | 1.1<br>(<1,3)    |                 |                  |                  |                  |                  |                  |                  |                  |                  | 4.0<br>(2, 6)    |                  |                  |
| <b>New Zealand</b>       |                  |                  |                 |                  |                  |                  |                  |                  |                  |                  |                  | 20.7<br>(18, 22) |                  |                  |
| <b>Costa Rica</b>        |                  |                  |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  | 16.4<br>(15, 19) |                  |
| <b>Galapagos</b>         |                  |                  |                 |                  |                  |                  |                  |                  |                  |                  |                  |                  | 3.8<br>(3, 5)    |                  |
| <b>Other</b>             | <1<br>(0, 0.01)  | <1<br>(0,0.2)    |                 |                  | <1<br>(0, 0.3)   | <1<br>(0, 0.1)   |                  |                  |                  | <1<br>(0.1, 1)   | <1<br>(0.2,0.4)  | <1<br>(0.5, 2)   | <1<br>(0.2, 1)   | <1<br>(0.1, 4)   |

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