Supplementary Table 1. Summary of rorquals species tagged, deployment duration, tag type, along with prey type. Source data are provided as a Source Data file.

| Species          | Prey type | Tag type | Num. deployments | Tag time (hours) |
|------------------|-----------|----------|------------------|------------------|
| *B. physalus*    | Krill     | CATS     | 3                | 2.83 (0.74 – 4.16) |
| *B. musculus*    | Krill     | CATS     | 45               | 12.86 (0.77 – 43.38) |
| *M. novaeangliae*| Fish      | CATS     | 34               | 6.56 (0.48 – 31.00)  |
| *M. novaeangliae*| Krill     | CATS     | 13               | 7.33 (2.11 – 12.18)   |
| *M. novaeangliae*| Fish      | Medterm  | 2                | 10.25 (2.37 – 18.12)  |
| *M. novaeangliae*| Krill     | Medterm  | 1                | 23.53 (23.53 – 23.53) |
| *B. musculus*    | Krill     | Medterm  | 14               | 204.35 (66.68 – 771.55) |
| *B. physalus*    | Krill     | Medterm  | 6                | 75.72 (20.40 – 120.93) |
| *B. physalus*    | Krill     | DTAG     | 20               | 5.14 (0.70 – 19.52)   |
| *B. musculus*    | Krill     | DTAG     | 53               | 5.87 (0.51 – 34.37)   |
Supplementary Table 2. The results of the high-risk scenario, per species and prey type. Each row contains the median and interquartile range for the modeled result. Source data are provided as a Source Data file.

| Species | B. physalus | B. musculus | M. novaeangliae (fish feeders) | M. novaeangliae (krill feeders) |
|---------|------------|-------------|--------------------------------|---------------------------------|
| Median Lunge Count (25<sup>th</sup> – 75<sup>th</sup> IQR) | 185.49 (89.60-303.36) | 200.05 (93.22- 308.69) | 108.62 (62.79- 158.46) | 260.63 (152.85- 449.46) |
| Median Plastic Pieces Retained from Water (25<sup>th</sup> – 75<sup>th</sup> IQR) | 2.34x10<sup>4</sup> (9.84x10<sup>3</sup>- 5.06x10<sup>4</sup>) | 5.76x10<sup>4</sup> (2.34x10<sup>4</sup> – 1.01x10<sup>5</sup>) | 4.77x10<sup>3</sup> (2.31x10<sup>3</sup>- 7.84x10<sup>3</sup>) | 1.20x10<sup>4</sup> (5.96x10<sup>3</sup>- 2.20x10<sup>4</sup>) |
| Median Plastic Pieces Retained from Prey (25<sup>th</sup> – 75<sup>th</sup> IQR) | 5.02x10<sup>7</sup> (2.33x10<sup>7</sup>- 8.81x10<sup>7</sup>) | 9.83x10<sup>7</sup> (4.62x10<sup>7</sup>- 1.52x10<sup>8</sup>) | 5.03x10<sup>5</sup> (2.59x10<sup>5</sup>- 7.91x10<sup>5</sup>) | 3.04x10<sup>7</sup> (1.52x10<sup>7</sup>- 4.87x10<sup>7</sup>) |
| Median Total Plastic Pieces (25<sup>th</sup> – 75<sup>th</sup> IQR) | 5.02x10<sup>7</sup> (2.33x10<sup>7</sup>- 8.82x10<sup>7</sup>) | 9.84x10<sup>7</sup> (4.62x10<sup>7</sup>- 1.52x10<sup>8</sup>) | 5.09x10<sup>5</sup> (2.62x10<sup>5</sup>- 8.00x10<sup>5</sup>) | 3.04x10<sup>7</sup> (1.52x10<sup>7</sup>- 4.88x10<sup>7</sup>) |
| Total Plastic Pieces Retained from Water / Animal Mass (kg) (25<sup>th</sup> – 75<sup>th</sup> IQR) | 0.61 (0.27- 1.27) | 0.91 (0.36- 1.51) | 0.22 (0.12- 0.36) | 0.55 (0.31-0.95) |
| Total Plastic Pieces Retained from Prey / Animal Mass (kg) (25<sup>th</sup> – 75<sup>th</sup> IQR) | 1317.13 (632.09- 2159.29) | 1518.55 (713.60- 2355.65) | 23.49 (13.44- 34.27) | 1449.16 (774.24- 2304.37) |
| Total Plastic Pieces / Animal Mass (kg) (25<sup>th</sup> – 75<sup>th</sup> IQR) | 1317.97 (632.51- 2161.18) | 1519.70 (713.87- 2357.35) | 23.77 (13.64- 34.61) | 1449.51 (774.54- 2305.66) |
Footnote: Bolded rows are those that combine the plastic ingested from both water and prey.

Supplementary Table 3. The results of the low-risk scenario, per species and prey type. Each row contains the median and interquartile range for the modeled result. Source data are provided as a Source Data file.

| Species                      | B. physalus                        | B. musculus                        | M. novaeangliae (fish feeders) | M. novaeangliae (krill feeders) |
|------------------------------|------------------------------------|------------------------------------|--------------------------------|--------------------------------|
| Median Lunge Count (25th – 75th IQR) | 193.37 (95.97-305.11) | 188.09 (89.31-278.33) | 103.83 (59.23-161.58) | 256.18 (153.95-427.78) |
| Median Plastic Pieces Retained from Water (25th – 75th IQR) | 7793.55 (3402.24 - 16651.93) | 18166.10 (7484.87-32463.51) | 1583.78 (710.76-2803.72) | 4313.48 (2214.55-7469.13) |
| Median Plastic Pieces Retained from Prey (25th – 75th IQR) | $1.03 \times 10^5$ (4.78 $\times 10^4$ - 1.73$x10^5$) | $1.82 \times 10^5$ (8.80$x10^4$ - 2.80$x10^5$) | $1.24 \times 10^4$ (6.41 $\times 10^3$ - 2.07$x10^4$) | $5.87 \times 10^4$ (3.02$x10^4$ - 9.91$x10^4$) |
| Median Total Plastic Pieces (25th – 75th IQR) | $1.13 \times 10^5$ (5.24 $\times 10^4$ - 1.89$x10^5$) | $2.02 \times 10^5$ (9.66$x10^4$ - 3.13$x10^5$) | $1.42 \times 10^4$ (7.19$x10^3$ - 2.36$x10^4$) | $6.28 \times 10^4$ (3.25$x10^4$ - 1.09$x10^5$) |
| Total Plastic Pieces Retained from Water / Animal Mass (kg) (25th – 75th IQR) | 0.2 (0.09-0.42) | 0.29 (0.12-0.49) | 0.07 (0.04-0.12) | 0.2 (0.11-0.32) |
| Total Plastic Pieces Retained from Prey / Animal Mass (kg) | 2.65 (1.31-4.27) | 2.84 (1.39-4.31) | 0.57 (0.34-0.93) | 2.66 (1.60-4.53) |
| Depth Bin          | B. physalus, krill (count) | B. musculus, krill (count) | M. novaeangliae, krill (count) | M. novaeangliae, fish (count) |
|-------------------|----------------------------|----------------------------|--------------------------------|-------------------------------|
| Surface (0-0.5m)  | 27                         | 74                         | 12                             | 30                            |
| Sub-Surface (0.5-5m) | 378                       | 707                        | 24                             | 82                            |
| Shallow (5-50m)   | 1267                       | 3495                       | 1438                           | 1548                          |
| Moderate (50-150m)| 1331                       | 9476                       | 1756                           | 1766                          |
| Deep (>150m)      | 3070                       | 12559                      | 1532                           | 18                            |

Footnote: Bolded rows are those that combine the plastic ingested from both water and prey.

Supplementary Table 4. Lunge counts divided by depth bin, species, and prey type. Source data are provided as a Source Data file.