

Title: Supplementary Information for ‘Field measurements reveal exposure risk to microplastic ingestion by filter-feeding megafauna’

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)
<i>B. physalus</i>	Krill	CATS	3	2.83 (0.74 – 4.16)
<i>B. musculus</i>	Krill	CATS	45	12.86 (0.77 – 43.38)
<i>M. novaeangliae</i>	Fish	CATS	34	6.56 (0.48 – 31.00)
<i>M. novaeangliae</i>	Krill	CATS	13	7.33 (2.11 – 12.18)
<i>M. novaeangliae</i>	Fish	Medterm	2	10.25 (2.37 – 18.12)
<i>M. novaeangliae</i>	Krill	Medterm	1	23.53 (23.53 – 23.53)
<i>B. musculus</i>	Krill	Medterm	14	204.35 (66.68 – 771.55)
<i>B. physalus</i>	Krill	Medterm	6	75.72 (20.40 – 120.93)
<i>B. physalus</i>	Krill	DTAG	20	5.14 (0.70 – 19.52)
<i>B. musculus</i>	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 (25th – 75th 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 (25th – 75th IQR)	2.34x10 ⁴ 9.84x10 ³ - 5.06x10 ⁴	5.76x10 ⁴ (2.34x10 ⁴ – 1.01x10 ⁵)	4.77x10 ³ (2.31x10 ³ - 7.84x10 ³)	1.20x10 ⁴ (5.96x10 ³ - 2.20x10 ⁴)
Median Plastic Pieces Retained from Prey (25th – 75th IQR)	5.02x10 ⁷ (2.33x10 ⁷ - 8.81x10 ⁷)	9.83x10 ⁷ (4.62x10 ⁷ - 1.52x10 ⁸)	5.03x10 ⁵ (2.59x10 ⁵ - 7.91x10 ⁵)	3.04x10 ⁷ (1.52x10 ⁷ - 4.87x10 ⁷)
Median Total Plastic Pieces (25th – 75th IQR)	5.02x10⁷ (2.33x10⁷- 8.82x10⁷)	9.84x10⁷ (4.62x10⁷- 1.52x10⁸)	5.09x10⁵ (2.62x10⁵- 8.00x10⁵)	3.04x10⁷ (1.52x10⁷- 4.88x10⁷)
Total Plastic Pieces Retained from Water / Animal Mass (kg) (25th – 75th 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) (25th – 75th 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) (25th – 75th 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)	1.03x10 ⁵ (4.78x10 ⁴ - 1.73x10 ⁵)	1.82x10 ⁵ (8.80x10 ⁴ - 2.80x10 ⁵)	1.24x10 ⁴ (6.41x10 ³ - 2.07x10 ⁴)	5.87x10 ⁴ (3.02x10 ⁴ - 9.91x10 ⁴)
Median Total Plastic Pieces (25th – 75th IQR)	1.13x10⁵ (5.24 x10⁴- 1.89x10⁵)	2.02x10⁵ (9.66 x10⁴- 3.13x10⁵)	1.42x10⁴ (7.19x10³- 2.36x10⁴)	6.28x10⁴ (3.25x10⁴- 1.09x10⁵)
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)

(25th – 75th IQR)				
Total Plastic Pieces / Animal Mass (kg) (25th – 75th IQR)	2.86 (1.46-4.73)	3.21 (1.54-4.85)	0.66 (0.38-1.05)	2.91 (1.71-4.91)

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.

Depth Bin	Species			
	<i>B. physalus</i> , krill (count)	<i>B. musculus</i> , krill (count)	<i>M. novaeangliae</i> , krill (count)	<i>M. novaeangliae</i> , 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