

Supplementary materials S1

Ecological effects of anthropogenic litter on marine mammals: A global review with a ‘black-list’ of impacted taxa

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Taxa (Orders, Sub-Orders, Families) of marine mammals (species with scientific and common names; for each Family the number of total species and n. of species extinct or probably extinct has been reported). In grey, species with at least one evidence of impact (Ingestion, entanglement) and pressure (macro-, meso-, micro-litter) by anthropogenic marine litter. Both the number of citations and of Scholar recurrences have been reported.

	Impact		Pressure				
taxa (in grey: at least of occurrence of impact and/or pressure)	Ingestion	Entanglement	Micro-litter	Meso-litter	Macro-litter	N. species citations	n. Scholar recurrences
Order Carnivora							
Family Otariidae (eared seals and sea lions; 15 species, of which 1 extinct)=14							
<i>Arctocephalus australis</i> (Zimmermann, 1783). South American fur seal		1			1	2	2450
<i>Arctocephalus forsteri</i> (Lesson, 1828). Long-nosed fur seal, New Zealand fur seal	1	1			1	5	1900
<i>Arctocephalus galapagoensis</i> Heller, 1904. Galapagos fur seal						0	787
<i>Arctocephalus gazella</i> (Peters, 1876). Antarctic fur seal	1	1	1		1	7	4020
<i>Arctocephalus philippii</i> (Peters, 1866). Juan Fernandez fur seal		1			1	3	415
<i>Arctocephalus pusillus</i> (Schreber, 1775). Cape fur seal	1	1			1	5	3280
<i>Arctocephalus tropicalis</i> (Gray, 1872). Subantarctic fur seal	1	1	1		1	3	1670
<i>Callorhinus ursinus</i> (Linnaeus, 1758). Northern fur seal		1		1	1	11	6820
<i>Eumetopias jubatus</i> (Schreber, 1776). Steller sea lion, northern sea lion	1	1		1	1	6	6730
<i>Neophoca cinerea</i> (Peron, 1816). Australian sea lion		1			1	2	1770
<i>Otaria byronia</i> (Blainville, 1820). South American sea lion		1			1	2	1360
<i>Phocartos hookeri</i> (Gray, 1844). New Zealand sea lion, Hooker’s sea lion	1	1	1		1	2	1680
<i>Zalophus californianus</i> (Lesson, 1828). California sea lion		1		1	1	8	9030
<i>Zalophus wollebaeki</i> Sivertsen, 1953. Galapagos sea lion						0	620
Family Odobenidae 1 sp							
<i>Odobenus rosmarus</i> (Linnaeus, 1758). Walrus						0	4930
Family Phocidae (earless seals; 19 species, of which 1 extinct)							
<i>Cystophora cristata</i> (Erleben, 1777). Hooded seal		1			1	2	3500

taxa (in grey: at least of occurrence of impact and/or pressure)	Impact		Pressure			citations N. species	n. Scholar recurrences
	Ingestion	Entanglement	Microlitter	Mesolitter	Macrolitter		
<i>Erignathus barbatus</i> (Erxleben, 1777). Bearded seal		1			1	1	3060
<i>Halichoerus grypus</i> (Fabricius, 1791). Gray seal		1			1	4	11200
<i>Histiophoca fasciata</i> (Zimmerman, 1783). Ribbon seal		1			1	1	487
<i>Hydrurga leptonyx</i> (Blainville, 1820). Leopard seal		1			1	3	2010
<i>Leptonychotes weddellii</i> (Lesson, 1826). Weddell seal						0	2610
<i>Lobodon carcinophaga</i> (Hombron and Jacquinot, 1842). Crabeater seal						0	441
<i>Mirounga leonina</i> (Linnaeus, 1758). Southern elephant seal		1			1	5	6210
<i>Mirounga angustirostris</i> (Gill, 1866). Northern elephant seal	1	1		1	1	6	5340
<i>Monachus monachus</i> (Hermann, 1779). Mediterranean monk seal		1			1	1	3060
<i>Neomonachus schauinslandi</i> (Matschie, 1905). Hawaiian monk seal		1			1	5	34
<i>Ommatophoca rossii</i> Gray, 1844. Ross seal							451
<i>Pagophilus groenlandicus</i> (Erxleben, 1777). Harp seal		1			1	2	2970
<i>Phoca vitulina</i> (Linnaeus, 1758). Harbor seal, common seal	1	1		1	1	8	20500
<i>Phoca largha</i> (Pallas, 1811). Spotted seal, largha seal		1			1	1	1580
<i>Pusa hispida</i> (Schreber, 1775). Ringed seal		1			1	2	2460
<i>Pusa caspica</i> (Gmelin, 1788). Caspian seal		1			1	1	386
<i>Pusa sibirica</i> (Gmelin, 1788). Baikal seal						0	690
Family Ursidae 1 sp.							
<i>Ursus maritimus</i> Phipps, 1774. Polar bear						0	10500
Family Mustelidae 2 sp.							
<i>Enhydra lutris</i> (Linnaeus, 1758). Sea otter		1			1	2	7630
<i>Lontra felina</i> (Molina, 1782). Chungungo, marine otter						0	513
Order Cetartiodactyla (artiodactyls and cetaceans)							
Cetacea (cetaceans; 89 species, of which 1 possibly extinct)							
Mysticeti (baleen whales, 14 species)							
Family Balaenidae (right whales, 4 species)							
<i>Balaena mysticetus</i> Linnaeus, 1758. Bowhead whale, Greenland whale	1	1			1	2	6230
<i>Eubalaena glacialis</i> (Müller, 1776). North Atlantic right whale	1	1			1	11	4650
<i>Eubalaena japonica</i> (Lacépède, 1818). North Pacific right whale						0	702
<i>Eubalaena australis</i> (Desmoulins, 1822). Southern right whale	1	1			1	3	3220
Family Neobalaenidae 1 sp.							
<i>Caperea marginata</i> (Gray, 1846). Pygmy right whale		1			1	2	633
Family Eschrichtiidae 1 sp.							
<i>Eschrichtius robustus</i> (Lilljeborg, 1861). Gray whale	1	1			1	6	5090
Family Balaenopteridae (rorquals, 8 species)							
<i>Balaenoptera acutorostrata</i> Lacépède, 1804. Common minke whale	1	1		1	1	20	7670
<i>Balaenoptera bonaerensis</i> Burmeister, 1867. Antarctic minke whale						0	1160
<i>Balaenoptera borealis</i> Lesson, 1828. Sei whale		1			1	2	3610
<i>Balaenoptera edeni</i> Anderson, 1879. Bryde's whale	1	1			1	5	2200
<i>Balaenoptera musculus</i> (Linnaeus, 1758). Blue whale	1	1			1	2	6190
<i>Balaenoptera omurai</i> Wada, Oishi and Yamada, 2003. Omura's whale						0	224
<i>Balaenoptera physalus</i> (Linnaeus, 1758). Fin whale	1	1	1		1	7	9190
<i>Megaptera novaeangliae</i> (Borowski, 1781). Humpback whale	1	1	1	1	1	22	12300
Odontoceti (toothed whales, dolphins and porpoises: 75 species, of which one possibly extinct)							
Family Physeteridae 1 sp.							
<i>Physeter macrocephalus</i> Linnaeus, 1758. Sperm whale, cachalot	1	1	1	1	1	30	9300
Family Kogiidae 2 sp.							

taxa (in grey: at least of occurrence of impact and/or pressure)	Impact		Pressure			citations N. species	n. Scholar recurrences
	Ingestion	Entanglement	Microlitter	Mesolitter	Macrolitter		
<i>Kogia breviceps</i> (Blainville, 1838). Pygmy sperm whale	1	1		1	1	11	2640
<i>Kogia sima</i> (Owen, 1866). Dwarf sperm whale	1	1			1	3	923
Family Ziphiidae (beaked whales, 22 species)							
<i>Berardius armuxii</i> Duvernoy, 1851. Arnoux's beaked whale						0	371
<i>Berardius bairdii</i> Stejneger, 1883. Baird's beaked whale	1			1	1	2	955
<i>Hyperoodon ampullatus</i> (Forster, 1770). Northern bottlenose whale	1	1		1	1	3	1866
<i>Hyperoodon planifrons</i> Flower, 1882. Southern bottlenose whale						0	566
<i>Indopacetus pacificus</i> (Longman, 1926). Longman's beaked whale, tropical bottlenose whale	1	1			1	2	367
<i>Mesoplodon bidens</i> (Sowerby, 1804). Sowerby's beaked whale	1			1	1	1	953
<i>Mesoplodon bowdoini</i> Andrews, 1908. Andrews' beaked whale							230
<i>Mesoplodon carlhubbsi</i> Moore, 1963. Hubbs' beaked whale	1	1			1	2	342
<i>Mesoplodon europaeus</i> (Gervais, 1855). Gervais' beaked whale	1				1	5	794
<i>Mesoplodon ginkgodens</i> Nishiwaki and Kamiya, 1958. Ginkgo-toothed beaked whale	1					1	323
<i>Mesoplodon grayi</i> von Haast, 876. Gray's beaked whale	1	1			1	2	9
<i>Mesoplodon hectori</i> (Gray, 1871). Hector's beaked whale						0	319
<i>Mesoplodon hotaula</i> Deraniyagala, 1963. Deraniyagala's beaked whale.						0	51
<i>Mesoplodon layardii</i> (Gray, 1865). Strap-toothed beaked whale, Layard's beaked whale						0	390
<i>Mesoplodon mirus</i> True, 1913. True's beaked whale	1		1		1	2	643
<i>Mesoplodon perrini</i> Dalebout, Mead, Baker, Baker and van Helden, 2002. Perrin's beaked whale						0	191
<i>Mesoplodon peruvianus</i> Reyes, Mead and Van Waerebeek, 1991. Pygmy beaked whale		1			1	1	274
<i>Mesoplodon stejnegeri</i> True, 1885. Stejneger's beaked whale	1	1		1	1	3	400
<i>Mesoplodon traversii</i> (Gray, 1874). Spade-toothed whale						0	106
<i>Mesoplodon densirostris</i> (Blainville, 1817). Blainville's beaked whale	1			1	1	4	2190
<i>Tasmacetus shepherdi</i> Oliver, 1937. Shepherd's beaked whale, Tasman beaked whale	1			1		2	293
<i>Ziphius cavirostris</i> G. Cuvier, 1823. Cuvier's beaked whale, goose-beaked whale	1	1			1	13	3870
Family Platanistidae 1 sp.							
<i>Platanista gangetica</i> (Lebeck, 1801). South Asian river dolphin, Indian river dolphin						0	1660
Family Iniidae 1 sp.							
<i>Inia geoffrensis</i> (Blainville, 1817). Amazon river dolphin		1			1	1	2830
Family Pontoporiidae 1 sp.							
<i>Pontoporia blainvillei</i> (Gervais and d'Orbigny, 1844). Franciscana, toninha.	1		1	1	1	6	2600
Family Monodontidae 2 sp.							
<i>Delphinapterus leucas</i> (Pallas, 1776). Beluga, white whale						0	10400
<i>Monodon monoceros</i> Linnaeus, 1758. Narwhal						0	3410
Family Delphinidae (37 species)							
<i>Cephalorhynchus commersonii</i> (Lacépède, 1804). Commerson's dolphin		1			1	2	998
<i>Cephalorhynchus eutropia</i> (Gray, 1846). Chilean dolphin		1			1	1	453
<i>Cephalorhynchus heavisidii</i> (Gray, 1828). Heaviside's dolphin, Haviside's dolphin		1			1	2	382
<i>Cephalorhynchus hectori</i> (Van Beneden, 1881). Hector's dolphin							1300
<i>Delphinus delphis</i> Linnaeus, 1758. Common dolphin, saddleback dolphin	1	1		1	1	5	10100

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	Ingestion	Entanglement	Microlitter	Mesolitter	Macrolitter		
<i>Feresa attenuata</i> Gray, 1874. Pygmy killer whale		1			1	1	1220
<i>Globicephala macrorhynchus</i> Gray, 1846. Short-finned pilot whale	1	1			1	6	2900
<i>Globicephala melas</i> (Traill, 1809). Long-finned pilot whale	1	1		1	1	6	4000
<i>Grampus griseus</i> (G. Cuvier, 1812). Risso's dolphin, grampus	1	1			1	7	5030
<i>Lagenodelphis hosei</i> Fraser, 1956. Fraser's dolphin	1	1		1	1	3	1280
<i>Lagenorhynchus acutus</i> (Gray, 1828). Atlantic white-sided dolphin		1			1	1	2170
<i>Lagenorhynchus albirostris</i> (Gray, 1846). White-beaked dolphin	1	1			1	2	1940
<i>Lagenorhynchus australis</i> (Peale, 1848). Peale's dolphin		1			1	1	474
<i>Lagenorhynchus cruciger</i> (Quoy and Gaimard, 1824). Hourglass dolphin						0	365
<i>Lagenorhynchus obliquidens</i> Gill, 1865. Pacific white-sided dolphin	1	1		1	1	5	2040
<i>Lagenorhynchus obscurus</i> (Gray, 1828). Dusky dolphin		1			1	1	2050
<i>Lissodelphis borealis</i> (Peale, 1848). Northern right-whale dolphin	1	1		1	1	2	788
<i>Lissodelphis peronii</i> (Lacépède, 1804). Southern right-whale dolphin		1			1	1	413
<i>Orcaella brevirostris</i> (Owen in Gray, 1866). Irrawaddy dolphin, pesut	1	1			1	2	1300
<i>Orcaella heinsohni</i> Beasley, Robertson and Arnold, 2005. Australian snubfin dolphin		1			1	1	275
<i>Orcinus orca</i> (Linnaeus, 1758). Killer whale, orca	1	1			1	7	14800
<i>Peponocephala electra</i> (Gray, 1846). Melon-headed whale, Electra dolphin		1			1	1	1540
<i>Pseudorca crassidens</i> (Owen, 1846). False killer whale	1	1		1	1	2	4140
<i>Sousa teuszii</i> (Kükenthal, 1892). Atlantic humpback dolphin		1			1	1	424
<i>Sousa chinensis</i> (Osbeck, 1765). Indo-Pacific humpback dolphin		1			1	2	2940
<i>Sousa plumbea</i> (G. Cuvier, 1829). Indian Ocean humpback dolphin						0	411
<i>Sousa sahalensis</i> Jefferson and Rosenbaum, 2014. Australian humpback dolphin						0	56
<i>Sotalia fluviatilis</i> (Gervais and Deville in Gervais, 1853). Tucuxi	1			1	1	2	2440
<i>Sotalia guianensis</i> (Van Bénédén, 1864). Guiana dolphin, costero	1	1	1	1	1	4	2010
<i>Stenella attenuata</i> (Gray, 1846). Pantropical spotted dolphin	1	1			1	3	3640
<i>Stenella clymene</i> (Gray, 1850). Clymene dolphin		1			1	2	647
<i>Stenella coeruleoalba</i> (Meyen, 1833). Striped dolphin	1	1			1	8	6780
<i>Stenella frontalis</i> (G. Cuvier, 1829). Atlantic spotted dolphin	1	1			1	3	2290
<i>Stenella longirostris</i> (Gray, 1828). Spinner dolphin		1			1	4	4260
<i>Steno bredanensis</i> (G. Cuvier in Lesson, 1828). Rough-toothed dolphin	1	1		1	1	5	2420
<i>Tursiops aduncus</i> (Ehrenberg, 1833). Indo-Pacific bottlenose dolphin		1			1	3	3080
<i>Tursiops truncatus</i> (Montagu, 1821). Common bottlenose dolphin	1	1		1	1	25	27900
Family Phocoenidae (porpoises, 7 species)							
<i>Neophocaena phocaenoides</i> (G. Cuvier, 1829). Indo-Pacific finless porpoise	1	1		1	1	2	2970
<i>Neophocaena asiaorientalis</i> (Pilleri and Gühr, 1972). Narrow-ridged finless porpoise						0	385
<i>Phocoena dioptrica</i> Lahille, 1912. Spectacled porpoise		1			1	1	283
<i>Phocoena phocoena</i> (Linnaeus, 1758). Harbor porpoise	1	1		1	1	11	13100
<i>Phocoena sinus</i> Norris and McFarland, 1958. Vaquita, Gulf of California harbor porpoise		1			1	1	1290
<i>Phocoena spinipinnis</i> Burmeister, 1865. Burmeister's porpoise	1	1			1	4	731
<i>Phocoenoides dalli</i> (True, 1885). Dall's porpoise, Dall porpoise	1	1		1	1	5	2700
Order Sirenia (sirenians, 5 species, of which 1 extinct)							

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	Ingestion	Entanglement	Microlitter	Mesolitter	Macrolitter			
Family Trichechidae 3 sp.								
<i>Trichechus inunguis</i> (Natterer, 1883). Amazonian manatee	1	1			1	2		1670
<i>Trichechus manatus</i> Linnaeus, 1758. West Indian manatee	1	1		1	1	5		6860
<i>Trichechus senegalensis</i> Link, 1795. West African manatee, African manatee		1			1	1		712
Family Dugongidae 1 sp.								
<i>Dugong dugon</i> (Müller, 1776). Dugong	1	1			1	2		384