



Supplemental Figure S1. Locations of gillnets in which harbor porpoises included in this study (n=12) were bycaught.

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Supplemental Table S1: Criteria gained from literature review with associated references

Criteria	Criteria reported by
1: Findings likely related to the drowning process	
Hyphema	Siebert et al. 2006; Bernaldo de Quirós et al. 2013
Pulmonary edema	Birkun 1994; García-Hartmann et al. 1994; Kuiken 1994; Lipscomb et al. 1994; Siebert et al. 1994; Knieriem & García-Hartmann 2001; García-Hartmann et al. 2004; Siebert et al. 2006; Jepson et al. 2013
Pulmonary emphysema	Birkun 1994; García-Hartmann et al. 1994; Kuiken 1994; Lipscomb et al. 1994; Siebert et al. 1994; García-Hartmann et al. 2004; Siebert et al. 2006; Jepson et al. 2013
Pleural petechiae or pulmonary hemorrhage	Birkun 1994; Kuiken 1994; Lipscomb et al. 1994; Knieriem & García-Hartmann 2001; García-Hartmann et al. 2004; Siebert et al. 2006
Changes in reticulum fiber structures of lung	Knieriem & García-Hartmann 2001
Regurgitation of food	Birkun 1994
Epicardial petechiae	Birkun 1994; Kuiken 1994; García-Hartmann et al. 2004
Organ congestion	Birkun 1994; Lipscomb et al. 1994; Bernaldo de Quirós et al. 2013; Jepson et al. 2013
Disseminated congestion	Birkun 1994; Bernaldo de Quirós et al. 2013
Presence of foreign material in lungs or bones	Birkun 1994; Larsen & Holm 1994
2: Findings related to the direct contact with the gillnet	
Superficial incisions in edges of the mouth, fins or tail(stock)/fluke	Birkun 1994; García-Hartmann et al. 1994; Kuiken 1994; Tregenza 1994; Siebert et al. 2001; García-Hartmann et al. 2004; Bernaldo de Quirós et al. 2013; Jepson et al. 2013
Encircling lesions, anywhere on the body	Tregenza 1994;
Subcutaneous hemorrhage/ contusions	García-Hartmann et al. 1994; Kuiken 1994; García-Hartmann et al. 2004; Jepson et al. 2013
Intramuscular hemorrhage, myofiber degeneration or skeletal muscle contusions	García-Hartmann et al. 2004; Siebert et al. 2006; Jepson et al. 2013
Disseminated gas bubbles	Moore et al. 2009; Bernaldo de Quirós et al. 2013
Pneumothorax	García-Hartmann et al. 1994
(Acute) skull or rib fractures	García-Hartmann et al. 1994; Kuiken 1994; Jepson et al. 2013
3: Findings related to disentanglement of bycaught animals	
Amputations	Birkun 1994; García-Hartmann et al. 1994; Kuiken 1994; García-Hartmann et al. 2004; Jepson et al. 2013
Presence of fishing material (netting, rope) around body extremities	Tregenza 1994; Kuiken 1994; García-Hartmann et al. 2004; Jepson et al. 2013
Gaff marks	Tregenza 1994; Kuiken 1994; García-Hartmann et al. 2004
Penetrating incision wounds or lacerations (tissue tears) into body cavities	Birkun 1994; Kuiken 1994; Tregenza 1994; García-Hartmann et al. 2004; Jepson et al. 2013
4: General health status of bycaught animals	
Good nutritional condition	Kuiken 1994; García-Hartmann et al. 2004; Siebert et al. 2006; Jepson et al. 2013
Low incidence of parasitism	García-Hartmann et al. 1994; Siebert et al. 2006
Exclusion of other cause of death	García-Hartmann et al. 1994; Kuiken 1994; García-Hartmann et al. 2004
Recently ingested gastric content	García-Hartmann et al. 1994; Kuiken 1994; Lipscomb et al. 1994; García-Hartmann et al. 2004; Bernaldo de Quirós et al. 2013; Jepson et al. 2013

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Supplemental Table S2: Basic information of bycaught harbor porpoises

Case #	Date	DCC at retrieval	Frozen	Total length (cm)	Weight (kg)	Age class	Age (years)	Sex	DCC at necropsy	NCC
1	2008-02-13	1	Y	117	24.3	Juvenile	<1	Female	2	3
2	2011-01-31	1	N	115	31	Juvenile	<1	Male	1	1
3	2011-03-28	1	N	117	24.5	Juvenile	<1	Female	1	2
4	2013-09-04	1	N	141	38.5	Adult	10	Female	4	1
5	2013-12-10	1	N	101.5	16.2	Juvenile	<1	Male	1	6
6	2014-06-03	1	N	101.5	19	Juvenile	(<)1	Male	1	3
7	2014-10-06	1	N	93.5	13.7	Juvenile	<1	Male	1	4
8	2015-06-27	2	N	115	24.5	Juvenile	1	Male	2	2
9	2015-06-12	4	N	171	48	Adult	8	Female	4	6
10	2015-08-20	1	N	115	25.5	Juvenile	1	Female	1	3
11	2017-03-11	1	N	115	28	Juvenile	<1	Male	1	1
12	2019-05-27	2	N	115.5	24	Juvenile	1	Male	2	4

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Supplemental Table S3: Overview of scored criteria and main pathological findings

Criteria	Based on	Case #1	Case #2	Case #3	Case #4	Case #5	Case #6	Case #7	Case #8	Case #9	Case #10	Case #11	Case #12
Hyphema	Gross assessment	Unilateral (L)	Bilateral	Absent	Bilateral	Unilateral (R)	Absent	Absent	Absent	Unknown	Unilateral (R)	Absent	Absent
Amputations	Gross assessment	No	No	No	No	No	No	No	No	No	No	No	No
Presence of gear	Gross assessment	No	No	No	No	No	No	No	No	No	No	No	No
Penetrating incision/wound	Gross assessment	No	No	No	No	No	No	No	No	No	No	No	No
Gaff marks	Gross assessment	No	No	No	No	No	No	No	No	No	No	No	No
Subcutaneous hemorrhage	Gross assessment	Present, submandibular, head and on M. longissimus dorsi	Present, on skull (caudodorsally)	Present, mandible	No	No	No	No	Present, scapula	Likely not, but autolysis hampers diagnosis	No	No	No
Intramuscular hemorrhage	Gross assessment	No	No	No	No	No	No	No	No	Likely not, but autolysis hampers diagnosis	No	No	No
Acute skull fractures	Gross assessment	No	No	Yes, left mandible	No	No	No	No	No	No	No	No	No
Gas bubbles	Gross assessment	Unknown	No	No	Unknown	No	No	No	No	Unknown	No	No	No
Pneumothorax	Gross assessment	No	No	No	Unknown	No	No	No	No	Unknown	No	No	No
Recent ingested gastric content	Gross assessment	Present	Present	Present	Present	Some	Present	Present	Some	Absent	Present	Present	Present
Regurgitation of food in upper alimentary tract	Gross assessment	Absent	Absent	Present	Present	Absent	Present	Present	Absent	Absent	Absent	Absent	Absent
Pulmonary edema	Gross and histologic assessment	Present	Present	Present	Unknown	Present	Present	Present	Present	Unknown	Present	Present	Present
Pulmonary emphysema	Histologic assessment - HE	Absent	Present, associated to pneumonia	Present, associated to pneumonia and pleuritis	Unknown	Present, associated to pneumonia	Absent	Present, very little associated pneumonia	Present, associated to pneumonia	Unknown	Present, associated to pneumonia	Present, very little associated pneumonia	Present, associated to pneumonia
Presence of foreign material in lungs	Histologic assessment - HE	Unknown	No	No	Unknown	No	No	No	No	Unknown	No	No	No
Petechiae - pleural	Histologic assessment - HE	Present	Present	Present	Unknown	Absent	Absent	Absent	Absent	Unknown	Absent	Absent	Absent
Petechiae - epicardial	Histologic assessment - HE	Present	Absent	Present	Unknown	Absent	Absent	Absent	Absent	Unknown	Absent	Absent	Absent
Skeletal muscle hemorrhage	Histologic assessment - HE	Unknown	Absent	Absent	Unknown	Absent	Absent	Absent	Absent	Unknown	Absent	Absent	Absent
Skeletal muscle myofiber degeneration	Histologic assessment - PTAH	Unknown	Mild	Absent	Unknown	Absent	Unknown	Absent	Absent	Unknown	Absent	Absent	Mild
Reticulum fiber structures lung	Histologic assessment - HE and Gomori	Unknown	Unspecific	Unspecific	Unspecific	Unspecific	Unspecific	Unspecific	Unspecific	Unknown	Unspecific	Unspecific	Unspecific
Organ congestion - adrenal	Histologic assessment - HE	No	Present	Present	Unknown	Present	Present	Haemorrhage	Present	Unknown	Present	Present	No
Organ congestion - brain	Histologic assessment - HE	Unknown	Present	No	Unknown	No	Present	No	Present	Unknown	Present	Present	Present
Organ congestion - heart	Histologic assessment - HE	No	Present	No	Unknown	No	No	Present	Present	Unknown	Present	Present	No
Organ congestion - kidney	Histologic assessment - HE	No	Present	Present	Unknown	Present	No	Present	Present	Unknown	Present	Present	Present
Organ congestion - liver	Histologic assessment - HE	No	Present	No	Unknown	Present	No	Present	Present	Unknown	No	No	No
Organ congestion - lung	Histologic assessment - HE	Present	Present	Present	Unknown	Present	No	Present	Present	Unknown	Present	Present	Present
Organ congestion - spleen	Histologic assessment - HE	No	Present	No	Unknown	Present	No	Present	Unknown	Unknown	Present	Present	Present
Multiple organ congestion - 2 or more	Previous single organ assessment	Lung only	Yes, all 7	Yes 3	Unknown	Yes 5	Yes 2	Yes 5 or 6	Yes 6	Unknown	Yes 6	Yes 6	Yes 4
Inner ear	Scanning Electron Microscopy						Unilateral impaired hearing, focal hemorrhages in the cochlea				Focal hemorrhages in the cochlea		
Net marks, imprints or incisions	Histologic assessment - HE	Not conducted	Not conducted	Not conducted	Not conducted	Not conducted	Focal loss of epidermis, some hemorrhage, no infiltrates	Not conducted	Not conducted	Not conducted	Focal loss of epidermis, some hemorrhage, some infiltrates	Not conducted	Focal loss of epidermis, no hemorrhage, no inflammatory reaction
Main pathological findings	Gross and histologic assessment	Focal loss of epidermis, some hemorrhage, some infiltrates	Focal loss of epidermis, no inflammatory reaction	Focal loss of epidermis, some hemorrhage, no inflammatory reaction	Not conducted	Focal loss of epidermis, some hemorrhage, no inflammatory reaction	Focal loss of epidermis, some hemorrhage, some infiltrates	Focal loss of epidermis, some hemorrhage, no inflammatory reaction	Focal loss of epidermis, no hemorrhage, no inflammatory reaction	Not conducted	Focal loss of epidermis, some hemorrhage, some infiltrates	Not conducted	Focal loss of epidermis, no hemorrhage, no inflammatory reaction
		No other significant findings, although freezing artefacts are apparent.	Myocarditis, multifocal mild enteritis, mild pneumonia, mild cholangiohepatitis	No other significant findings	Moderate verminous pneumonia. No histology.	Chronic, multifocal, ulcerated and suppurative dermatitis, severe multifocal granulomatous bronchopneumonia with intralésional nematodes, ulcerated esophagus, chronic hepatitis and meningoencephalitis	Multifocal moderate bacterial dermatitis, subacute nephritis, multifocal severe verminous bronchopneumonia, mild diffuse enteritis, hepatitis, unilateral impaired hearing (Morell et al. 2017)	No other significant findings	Mild verminous pneumonia, mild hemochromatose	Severe parasitosis, moderate pneumonia. No histology	Focal severe proliferative dermatitis and multifocal mild viral dermatitis, moderate verminous and bacterial pneumonia	Mild encephalitis, mild verminous pneumonia	Osteomyelitis mandible (old trauma) and (bacterial) dermatitis (old trauma, most likely grey seal bites). Moderate verminous pneumonia.
Comments	All of above	No paraffin embedded tissues available for reassessment/additional staining	NA	NA	Animal temporarily left in a harbor for the purpose of another study (findings not presented here), therefore DCC4 at necropsy and no histology taken.	NA	NA	NA	NA	Decomposed and most likely bycaught post-mortem	NA	NA	NA

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Supplemental Table S4: Overview of net induced lesions and imprints observed during macroscopic assessment of bycaught harbor porpoises

	Pectoral fin(s)			Dorsal fin			Fluke			Mouth edges			Encircling imprint	
Case #	Presence	Distribution	Severity	Presence	Distribution	Severity	Presence	Distribution	Severity	Presence	Distribution	Severity	Presence	Location
1	Left and right side	Multifocal	Extensive	On trailing and leading edge	Multifocal	Mild	On trailing and leading edge	Multifocal	Extensive	Absent	NA	NA	Present	Cranial to pectoral fins around body
2				On trailing and leading edge	Focal	Moderate	On trailing and leading edge	Multifocal	Extensive	Absent	NA	NA	Absent	NA
3	Right side	Multifocal	Severe				On trailing and leading edge	Multifocal	Extensive	Present	Multifocal	Mild	Present	Around head
4	Left and right side	Focal	Severe	On leading edge	Focal	Mild	On trailing and leading edge	Multifocal	Extensive	Present	Focal	Moderate	Absent	NA
5	Left and right side	Multifocal	Extensive	On trailing and leading edge	Focal	Mild	On trailing and leading edge	Multifocal	Extensive	Present	Focal	Moderate	Absent	NA
6	Right side	Multifocal	Mild	Absent	NA	NA	Absent	NA	NA	Absent	NA	NA	Absent	NA
7	Right side	Multifocal	Mild	On trailing edge	Focal	Mild	On trailing and leading edge	Multifocal	Moderate	Present	Multifocal	Severe	Present	On rostrum
8	Left and right side	Multifocal	Mild	On trailing edge	Focal	Mild	Absent	NA	NA	Present	Focal	Moderate	Present	On rostrum
9	Left and right side	Multifocal	Mild	On trailing and leading edge	Focal	Mild	On trailing and leading edge	Multifocal	Moderate	Absent	NA	NA	Present	On rostrum
10	Left and right side	Multifocal	Extensive	On leading edge	Focal	Mild	On trailing and leading edge	Multifocal	Extensive	Absent	NA	NA	Absent	NA
11	Left and right side	Multifocal	Extensive	On trailing edge	Focal	Mild	On trailing and leading edge	Multifocal	Mild	Present	Focal	Mild	Present	On rostrum
12	Left side	Focal	Severe	On trailing and leading edge	Multifocal	Mild	On trailing and leading edge	Multifocal	Extensive	Present	Focal	Mild	Present	On rostrum
	Left and right side	Multifocal	Extensive	On trailing and leading edge	Multifocal	Extensive	On trailing and leading edge	Multifocal	Extensive	Present	Multifocal	Extensive	Present	On rostrum

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		Pelagic prey				Demersal prey								
Case #		Lesser pipefish	Herring	Sprat	Smelt	Sandeel	Goby	Whiting	Five-bearded Bib	Total	Total pelagic	Total demersal		
1	Number	0	0	0	0	24	500	0	0	0	524	0	524	
	Mass	0	0	0	0	212.58	239.4	0	0	0	451.98	0	451.98	
2	Number	0	5	3	0	86	1585	0	0	0	1679	8	1671	
	Mass	0	52.28	22.56	0	628.31	1383.77	0	0	0	2086.92	74.84	2012.08	
3	Number	0	3	0	2	47	494	0	0	0	546	5	541	
	Mass	0	34.46	0	4.29	293.37	407.76	0	0	0	739.88	38.75	701.13	
4	Number	1	0	0	0	15	0	0	0	0	16	1	15	
	Mass	0.24	0	0	0	261.14	0	0	0	0	261.38	0.24	261.14	
5	Number	0	0	0	0	0	107	0	0	0	107	0	107	
	Mass	0	0	0	0	0	132.22	0	0	0	132.22	0	132.22	
6	Number	30	0	0	0	0	0	0	0	0	30	30	0	
	Mass	14.96	0	0	0	0	0	0	0	0	14.96	14.96	0	
7	Number	0	0	0	0	0	848	0	0	0	848	0	848	
	Mass	0	0	0	0	0	958.54	0	0	0	958.54	0	958.54	
8	Number	0	0	0	0	10	2	3	0	0	15	0	15	
	Mass	0	0	0	0	89.79	0.30	222.56	0	0	312.65	0	312.65	
10	Number	45	0	0	0	0	343	7	0	4	399	45	354	
	Mass	25.04	0	0	0	0	404.39	427.03	0	112.03	968.49	25.04	943.45	
11	Number	0	0	1	0	17	0	0	0	0	18	1	17	
	Mass	0	0	23.11	0	79.28	0	0	0	0	102.39	23.11	79.28	
12	Number	0	0	1	1	15	957	9	1	109	1093	2	1091	
	Mass	0	0	10.94	15.41	52.9	2636.6	13.51	36.26	26.75	2792.37	26.35	2766.02	
											Pelagic		Demersal	
											92		5183	
											203.29		8618.49	
											1.74		98.26 %-n	
											2.30		97.70 %-M	