

Annual Report 2016

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for Marine Scotland, Scottish Government

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Section 1: Executive Summary

From the 1st January to 31st December 2016, 668 reports of 669 marine animals were reported to the Scottish Marine Animal Stranding Scheme (SMASS), comprising 404 seals, 263 cetaceans, one basking shark and one marine turtle. Of these, 63 cases (9.4%), comprising 50 cetaceans, 12 seals and one turtle were necropsied to establish a cause of death. A further 52 (7.7%) animals comprising 41 cetaceans, 10 seals and one basking shark were sampled by trained volunteers. In those cases not necropsied, advanced autolysis or carcass accessibility were the most common reasons precluding further examination. The increase in the number of seals reported from Orkney first observed in 2014 was continued this year, most likely due to increased reporting effort following several SMASS training events on the islands, but also due to the presence of SMRU researchers working with harbour seals (*Phoca vitulina*). There was a single mass stranding event (MSE) in January involving two Risso's dolphins (*Grampus griseus*). Seals exhibiting lesions consistent with grey seal predation continue to be reported with 75 cases, mostly from Orkney however we have had nearly as many reported from the Western Isles. This area previously had few cases. Other areas of higher incidence include Fife and Highland. The majority were grey seal weaners (*Halichoerus grypus*) reported in the winter months, although harbour seals were also reported. Grey seal attacks on harbour porpoise (*Phocoena phocoena*) continue to be reported. This year we recognised two forms of interaction; animals acutely attacked and preyed, and animals that appeared to escape the initial attack but later developed chronic sepsis originating from infected bite wounds. There were 10 cases reported of the predation and four cases of chronic lesions reported. The volunteer network has continued to expand with three courses being run in 2016 two in Shetland and one in Inverness targeting Skye and the west coast. The number of trained volunteers had increased to 141 by the end of 2016. The volunteer network is proving a significant asset to SMASS, through provision of both photographic and accurate morphometric data and the safe collection of tissues for genetic and toxicological analysis. Several strandings attracted significant media attention; particularly the stranding of Lulu, one of the few remaining members of the west coast community of killer whales (*Orcinus orca*). Other cases attracting attention was "Spirtle" one of the Moray Firth bottlenose dolphin (*Tursiops truncatus*) population live stranded and refloated at Nigg Bay on 30th May. The stranding of a Sowerby's beaked whale (*Mesoplodon bidens*) and a pygmy sperm whale (*Kogia breviceps*) on the north coast of Scotland within a week of each other were also picked up by the media. Several publications also attracted media attention; the publication of a paper by the CSIP and involving SMASS entitled "PCB pollution continues to impact populations of killer whales and other dolphins in European waters". In Nature Scientific Reports, The publication of Zuzana Gajdosechova's paper "Possible link between Hg and Cd accumulation in the brain of long-finned pilot whales (*Globicephala melas*)" generated significant media interest, coming close to the news release by IOZ of the PCB paper and the grey seal infanticide and cannibalism cases in Scotland made it into the New Scientist.

1.1 Project overview

This work is delivered under the Scottish Marine Animal Strandings Research Programme issued on 12 March, 2015 by Scottish Ministers, with work running for 36 months and contract expiry on 7th June 2018.

The principal requirement of this project is to provide a coordinated approach to the surveillance of seal and cetacean strandings, and to investigate major causes of death of stranded animals in Scotland. In addition, the contract specifies procedures are set in place for increasing awareness of the research in order to improve reporting and investigations of strandings in Scotland, with the ultimate purpose of implementing a Scotland wide strandings network. The project also has a requirement to manage a sample and data archive on behalf of Marine Scotland. Details about the Scottish Scheme can be found at strandings.org

This work builds on the work undertaken in Scotland by the UK Cetacean Strandings Investigation Programme (CSIP). Detailed information about the CSIP, including access to stranding records, can be found at ukstrandings.org

1.2 Contract specification

- 1) To collate, analyse and report data for all seal and cetacean strandings found around the Scottish coast. The approach should optimise the information recovered from stranded cases and include, but not be limited to sample and morphometric collection, necropsy and ancillary testing.
- 2) A relevant subset of these strandings should be necropsied to determine the major causes of death in stranded animals, including by-catch, physical trauma and the incidence of disease. Any cetacean necropsy will be in addition to those currently undertaken within Scotland as part of the UK Cetacean Strandings Investigation Programme.
- 3) Continue to support relevant research organisations (e.g., SMRU, SAMS, University of Aberdeen) and ongoing research to investigate the occurrence of seals exhibiting spiral seal lacerations. This will involve, but not be limited to, undertaking necropsies (in accordance with established criteria), working with SMRU on field trials, and scrutinising the current scheme in terms of its ability to effectively locate, monitor and respond to strandings of seals exhibiting spiral lesions across Scotland.
- 4) Development and maintenance of a Scotland-wide volunteer network to assist with identification triage and possible measurement and sampling of cases reported to the stranding scheme. This should allow for improved depth, accuracy and efficiency in the information recoverable from strandings.
- 5) Continue to improve public awareness and engagement with the scheme to improve the reporting and investigation of strandings in Scotland, with the ultimate purpose of supporting the implementation of a Scotland-wide volunteer network (point 2.4).
- 6) Continue to develop partnership arrangements with a range of organisations and individuals, with particular focus on increasing reporting effort in areas of less than optimal coverage such as Orkney, North coast of Scotland, Western Isles (in particular, the Uists), Dumfries and Galloway and the Scottish Borders.
- 7) Exploration and development of active collaborations/partnerships with organisations able to provide staff to improve public awareness. This could include NGO's (similar to current arrangements with HWDT, WDC) and the scientific community.
- 8) Continue efforts to increase awareness and reporting of the scheme through a range of activities. These should include at least, but not be limited to, two poster

distribution campaigns, continuation of social media, talks and demonstration events.

- 9) Maintain a public-facing website to provide relevant information about reported cases back to the public to maintain interest.
- 10) Provide a minimum of four training courses and post mortem demonstrations to teach volunteers how to accurately and safely collect skin and blubber tissue samples from cases otherwise unsuitable for recovery. In addition to samples, volunteers will be trained to collect morphometric and locational data and a series of digital photographs. Efforts should be made to expand the volunteer network to cover all areas of the Scottish coast (particularly those of less than optimal coverage) and include a range of individuals and organizations.
- 11) Develop an enhanced monitoring protocol/ effort based surveillance of relevance to areas where there is a particular need to identify change in the incidence of strandings (e.g in the vicinity of marine renewable installations).
- 12) To maintain a standard Scottish database for seal strandings which brings together accurate and geo-reference data on both strandings and necropsy data. Any cetacean data should be fed into the cetacean database for the “UK Cetacean Strandings Investigation Programme” which is held by the Institute of Zoology (IoZ).
- 13) To maintain a standard Scottish sample archive (frozen and fixed samples) for seal and cetacean strandings which links case samples to both strandings and necropsy data. Where possible, efforts should be made to develop an online, secure searchable archive for data derived from the necropsies and ancillary tests
- 14) To provide scientific advice to the Scottish Government as necessary about major causes of death in stranded marine mammals, including any trends or unusual events. Where required, to contribute to the production of strandings training material and workshop events.

Section 2: Strandings

2.1 Strandings overview

From the 1st January to 31st December 2016, 668 reports of 669 marine animals were reported to the Scottish Marine Animal Stranding Scheme (SMASS), comprising 404 seals, 263 cetaceans, one basking shark and one marine turtle (Table 1). Of these, 63 cases (9.4%), 50 cetaceans, 12 seals and one turtle were necropsied to establish a cause of death. A further 52 (7.7%) animals comprising 41 cetaceans, 10 seals and one basking shark were sampled by trained volunteers. In the cases not necropsied, advanced autolysis or carcase accessibility were the most common reasons precluding further examination. Figure 1 presents the total number of strandings reported to SMASS since 2007 and shows the year on year increase in strandings reports is continuing and 2016 came close the number reported in 2002 which was a phocine distemper virus epidemic (PDV) year. Figure 2 shows the breakdown of strandings by subclass for 2016. Figure 3 shows the cumulative number of strandings by month for each individual year since 2012.

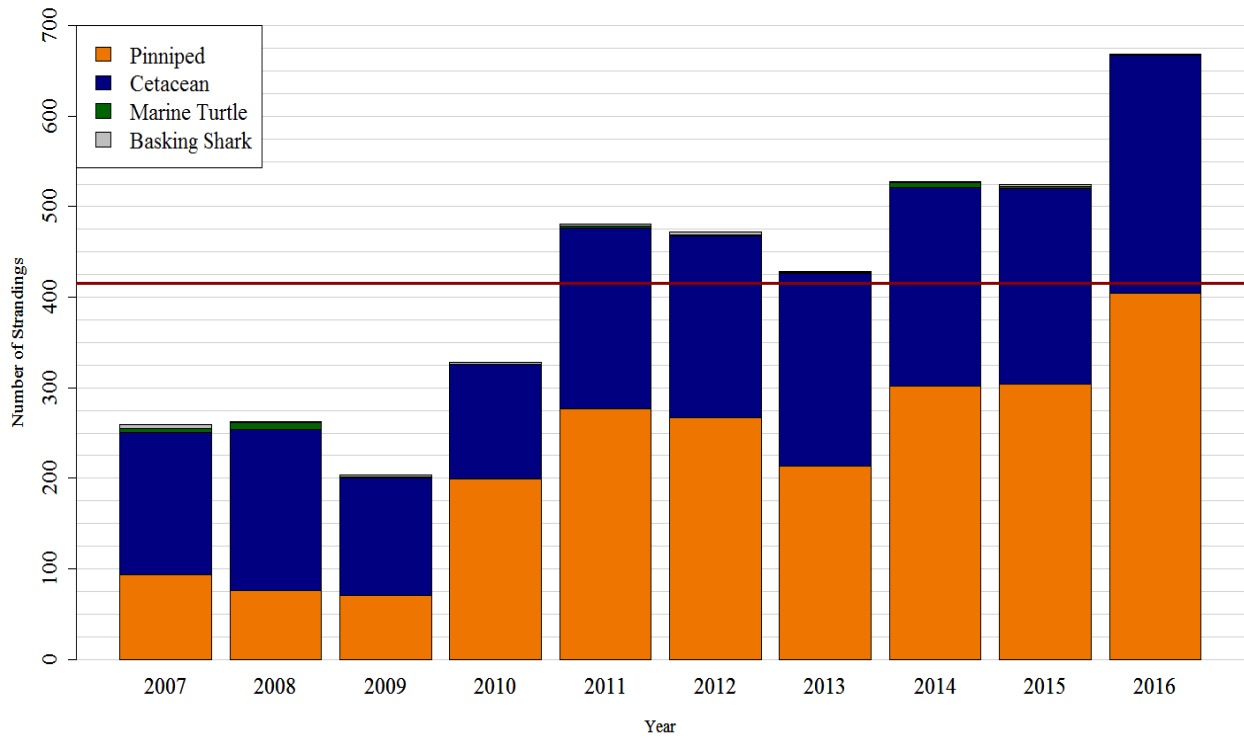


Figure 1: Total number of strandings reported 2007-2016. Red line shows the mean number of strandings over this 10-year period (415.7)

Table 1: Summary of stranded animals 2016

Species	Sent for Necropsy	Sampled	Not Examined	Total
Cetaceans				263
Harbour porpoise (<i>Phocoena phocoena</i>)	28	25	84	137
Cetacean (indeterminate species)			29	29
Short-beaked common dolphin (<i>Delphinus delphis</i>)	5	5	15	25
Minke whale (<i>Balaenoptera acutorostrata</i>)	1	2	12	15
White-beaked dolphin (<i>Lagenorhynchus albirostris</i>)	5	1	9	15
Long-finned pilot whale (<i>Globicephala melas</i>)		1	10	11
Risso's dolphin (<i>Grampus griseus</i>)	3	3	2	8
Striped dolphin (<i>Stenella coeruleoalba</i>)	3		3	6
Humpback whale (<i>Megaptera novaeangliae</i>)		2	2	4
Sperm whale (<i>Physeter macrocephalus</i>)			3	3
Atlantic white-sided dolphin (<i>Lagenorhynchus acutus</i>)	1		1	2
Bottlenose dolphin (<i>Tursiops truncatus</i>)		1	1	2
Fin whale (<i>Balaenoptera physalus</i>)	1	1		2
Cuvier's beaked whale (<i>Ziphius cavirostris</i>)			1	1
Killer whale (<i>Orcinus orca</i>)	1			1
Pygmy sperm whale (<i>Kogia breviceps</i>)	1			1
Sowerby's beaked whale (<i>Mesoplodon bidens</i>)	1			1
Pinnipeds				404
Grey seal (<i>Halichoerus grypus</i>)	2	4	247	253
Harbour seal (<i>Phoca vitulina</i>)	9	6	58	73
Seal (indeterminate species)			78	78
Marine Turtle & Basking Shark				2
Basking shark (<i>Cetorhinus maximus</i>)		1		1
Leatherback turtle (<i>Dermochelys coriacea</i>)	1			1
GRAND TOTAL	62	52	555	669

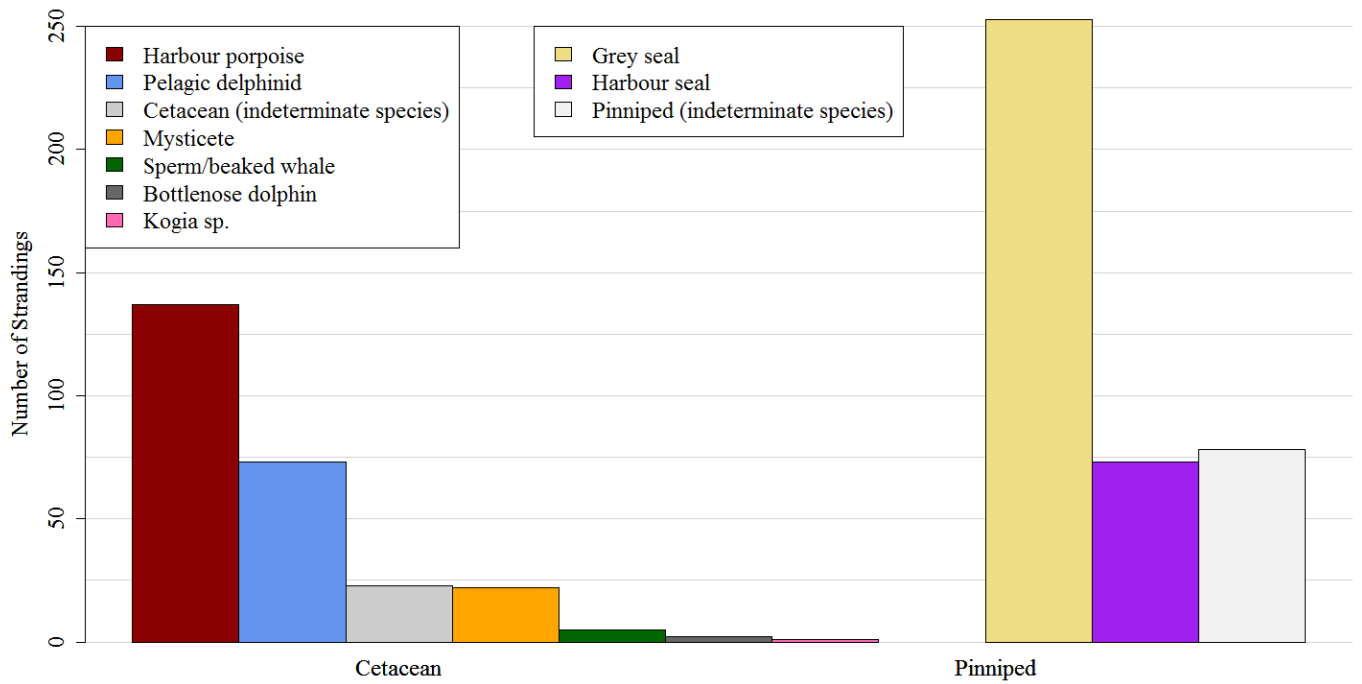


Figure 2: Total number of species reported in 2016, by subclass

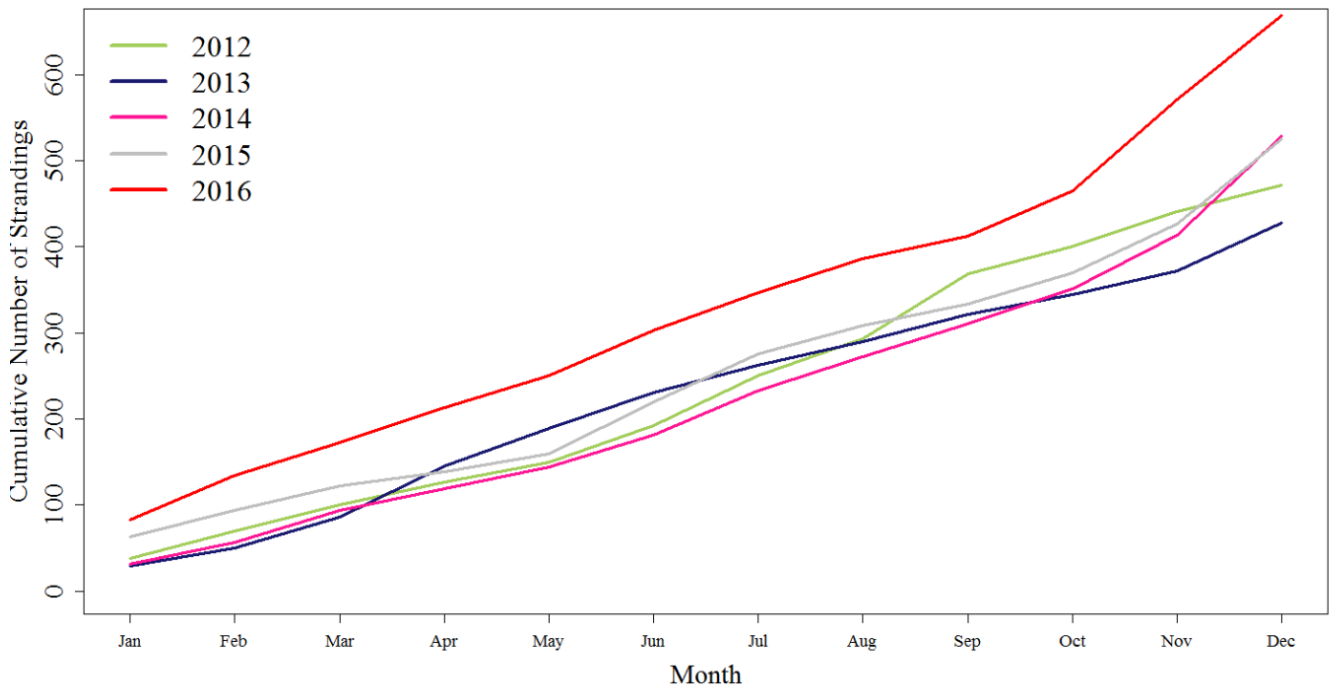


Figure 3: Cumulative number of cases all species by month for 2012 - 2016

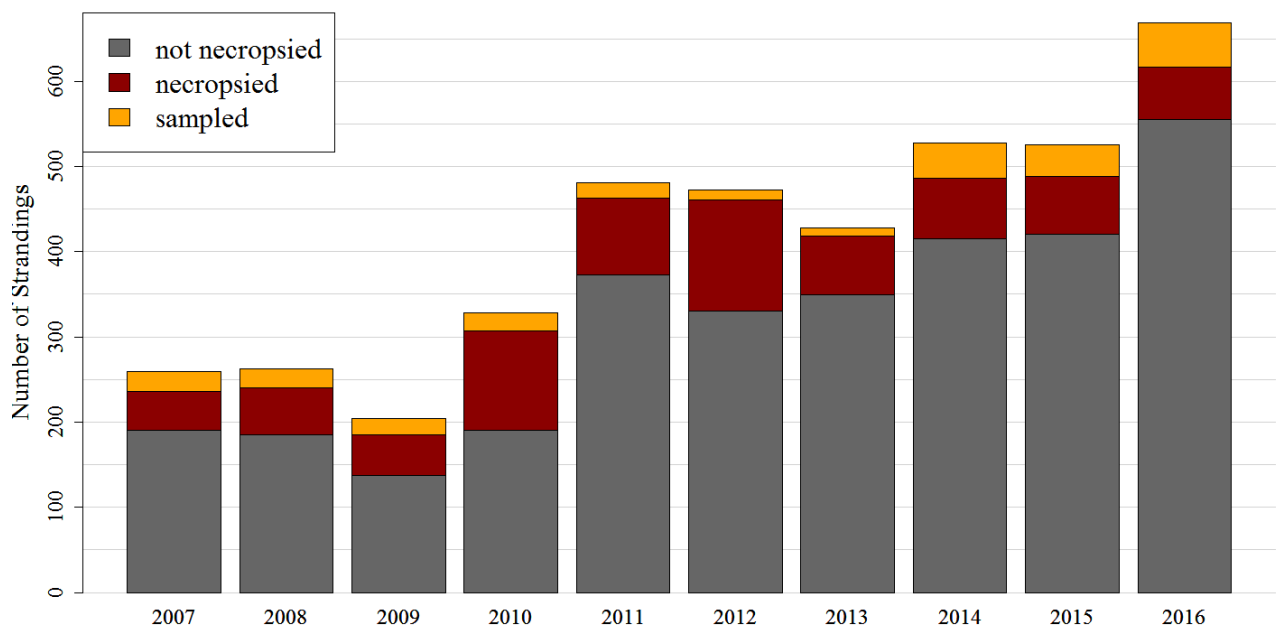


Figure 4: Cases necropsied and sampled 2007-2016

Figure 4 shows the number of cases necropsied, sampled, and not necropsied respectively during 2016 compared to other years. Cases may be unsuitable for collection for a number of factors, with autolysis being the most common reason, though travel and logistical reasons also played a part. A more detailed overview of this as well as findings at necropsy can be found in Section 3 of this report.

2.2 Spatial maps of strandings

There were cases reported in all coastal regions yet as with previous years there was a bias towards eastern Scotland and Orkney. Notable clusters of strandings were seen around Fife, the Forth, Tay and Moray Firths and the Uists. Similar to 2015, there was a cluster of strandings on the small isles (Coll and Tiree), likely representing increased effort rather than increased mortality. There is improving, but still less than optimal, surveillance and animal recovery in the Western Isles. Recovery of carcasses and obtaining data from animals stranded in the west of Scotland was largely constrained by logistical difficulties or poor information about the stranding, whereas the cluster of not recovered animals from the eastern coast from Fife to Aberdeen was usually due to animal condition rather than the capacity for recovery. Continued and hugely valued assistance from the Sea Mammal Research Unit (SMRU) in Fife and Scottish Natural Heritage (SNH) in Shetland has enabled many animals suitable for necropsy to be recovered, or stranding morphometrics to be recorded. The maps below show the spatial distribution of strandings necropsied (Figure 5) and not necropsied (Figure 6) during 2016. Figure 7 is a density map showing areas, in red, of high stranding reports. A density plot is a surface calculated from individual stranding points using a kernel function to fit a smoothly tapered surface, and is a way of visualising areas of high stranding density.

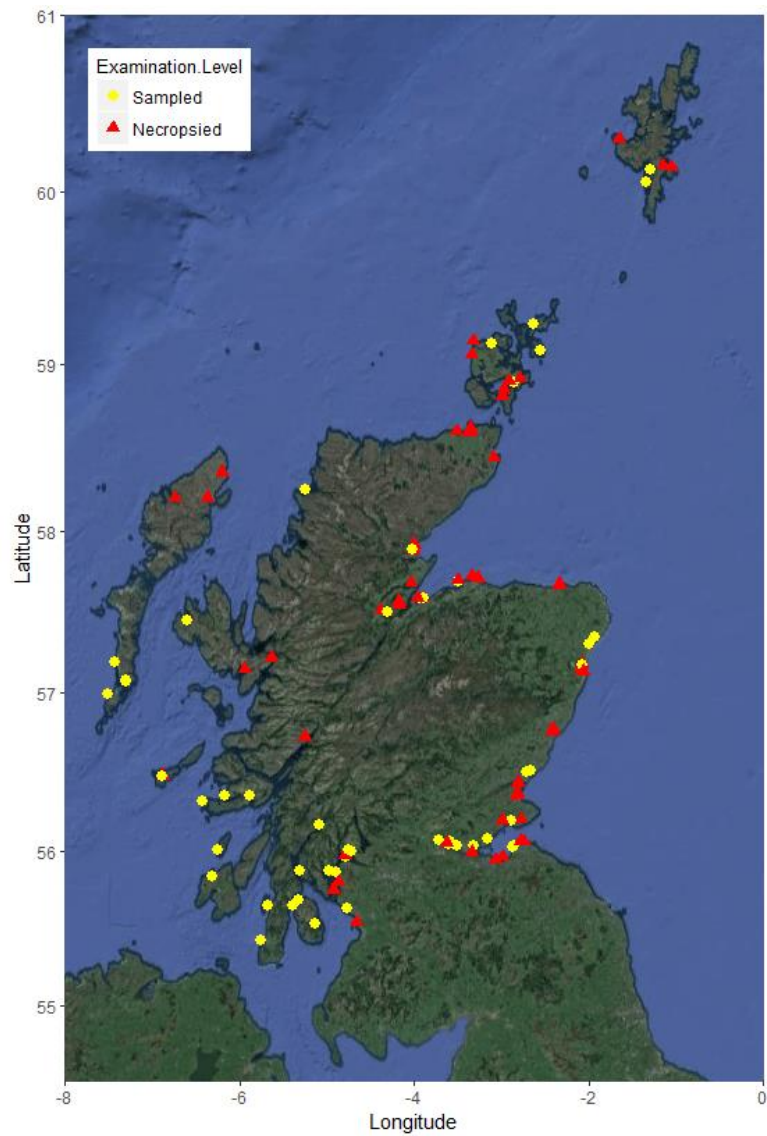


Figure 5: Strandings necropsied or sampled

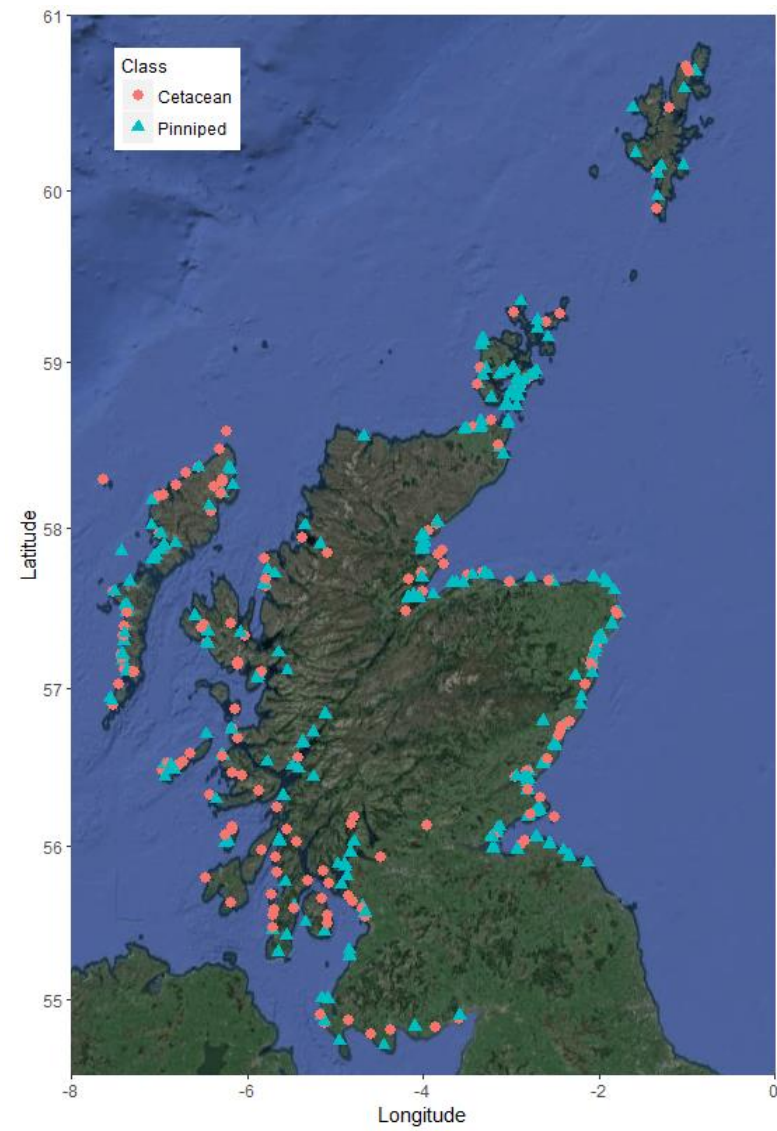


Figure 6: Strandings not necropsied or sampled

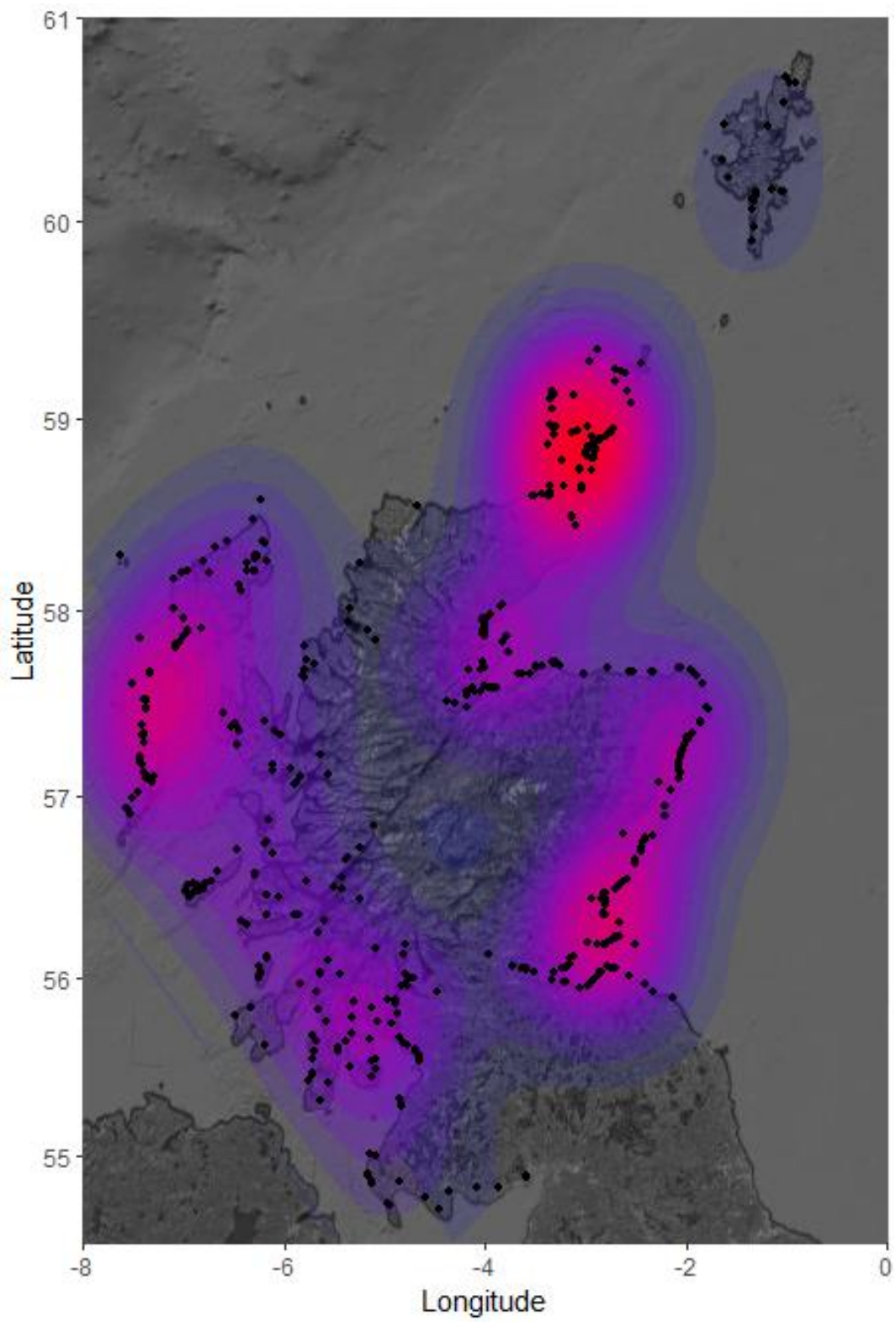


Figure 7: Kernel density plot of all strandings 2016. Colour spectrum from blue (low) to red (high)

2.3 Pinniped strandings

Four hundred and four seals were reported to SMASS in 2016 comprising of 253 grey seals, 73 harbour seals and 78 pinnipeds were too autolysed or data deficient for accurate speciation (Figure 8, Table 2). Of those reported, a large proportion (94.5%) was not recovered for necropsy. This is due to a variety of reasons but the main constraint was an advanced state of autolysis of the carcass or poor information attainable about the case. Despite increased reporting of cases, it is very seldom a pinniped carcass is discovered fresh enough to make it justifiable to recover for necropsy, although ten cases were sampled by volunteers.

Eleven animals (2.7%) were recovered for necropsy. Physical trauma was the most common finding in pinnipeds, both anthropogenic and attributable to grey seal predation (n=6). Three other animals were found to have a parasitic pneumonia.

This report does not include the detail on cases reported as shot under seal management licences. Information regarding these cases is available from Marine Scotland or online at:

<http://www.scotland.gov.uk/topics/marine/licensing/seallicensing>.

2.3.1 *'Corkscrew' or spiral trauma cases*

Four (two grey and two harbour seals) were found to be definite or possible spiral trauma cases, at necropsy. An additional 74 cases (62 grey, nine harbour, and three unidentified species of seal) were diagnosed from photographs or assessments made on the beach. More detail can be found on these in Section 6.

2.3.2 *Other trauma cases*

Three animals were reported by marksmen as being shot. They consisted of one harbour and two grey seals none of these animals were examined at necropsy. A further unidentified seal was reported as suspected as being shot.

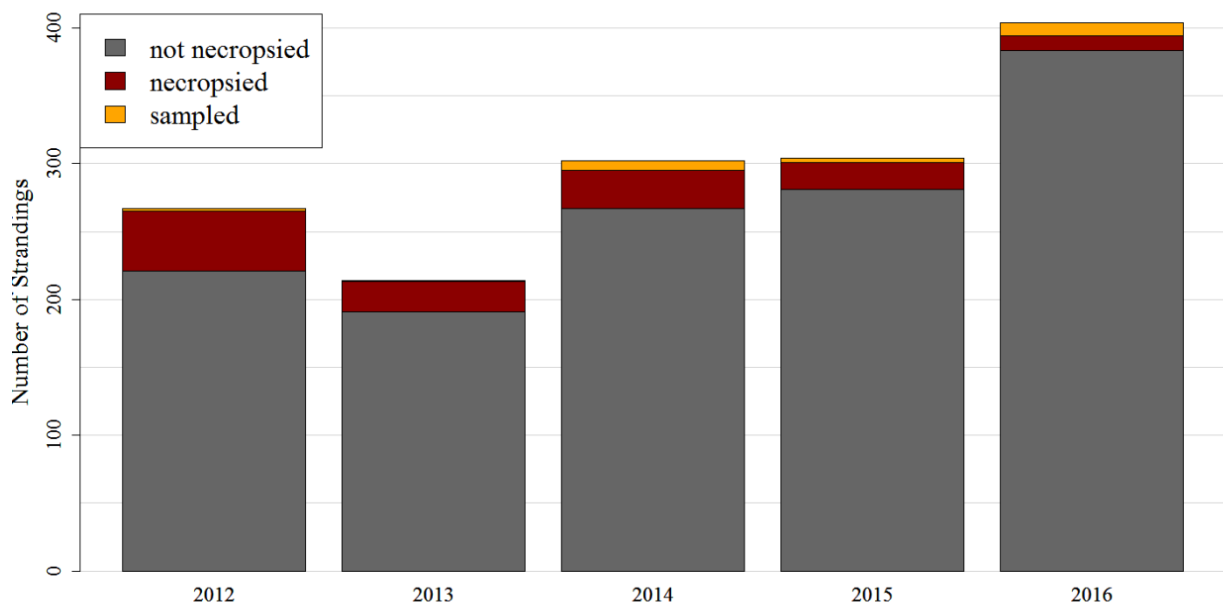


Figure 8: Pinniped strandings (all species) 2012 – 2016, separated by level of examination

2.4 Pinniped age structure

Table 2 shows the age structure of pinnipeds reported to SMASS for a 5 year period from January 2012 to December 2016. Figure 9 graphs the structure for 2016 only.

Between 2012 and 2016, there were 1491 strandings of seals, of which the age could not reliably be established in 65.9% of cases. Of those where the age could be determined, 22.8% were juveniles or younger and 11% were adult animals. By species, adults made up 14.1% of grey seals and 16.5% of harbour seal strandings.

In 2016 this pattern was slightly better as the age could not be established for only 41% of the 404 reported strandings. Of those where the age could be determined, 42% were juveniles or younger and 16.5% adults. By species, adults made up 19.7% of grey seals and 15% of harbour seal strandings, figure 9. Figure 10 shows the spatial distribution of pinniped strandings.

Table 2: Age structure of pinniped strandings 2012-16

	Pup	Juvenile	Adult	Unknown	Grand Total
Grey seal	99	156	116	448	821
Harbour seal (Common seal)	24	40	42	147	254
Bearded seal		1			1
Hooded seal				2	2
Seal (indeterminate species)	14	6	7	386	413
Grand Total	137	203	165	983	1491

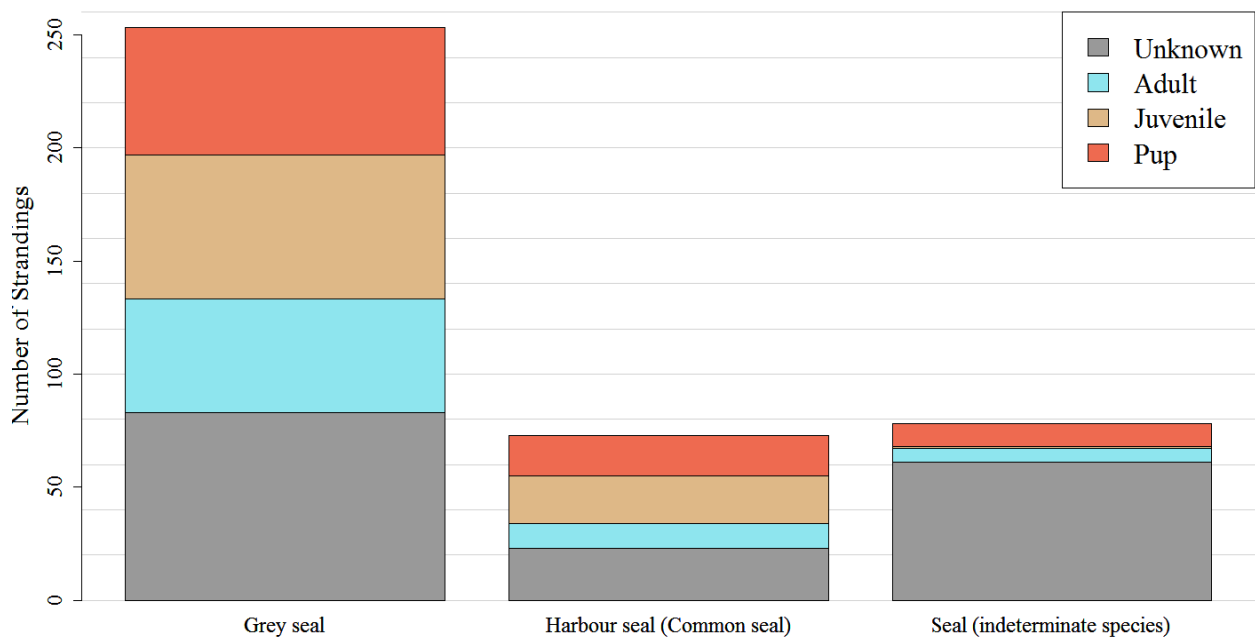


Figure 9:- Age structure of pinniped strandings 2016, by age group and species

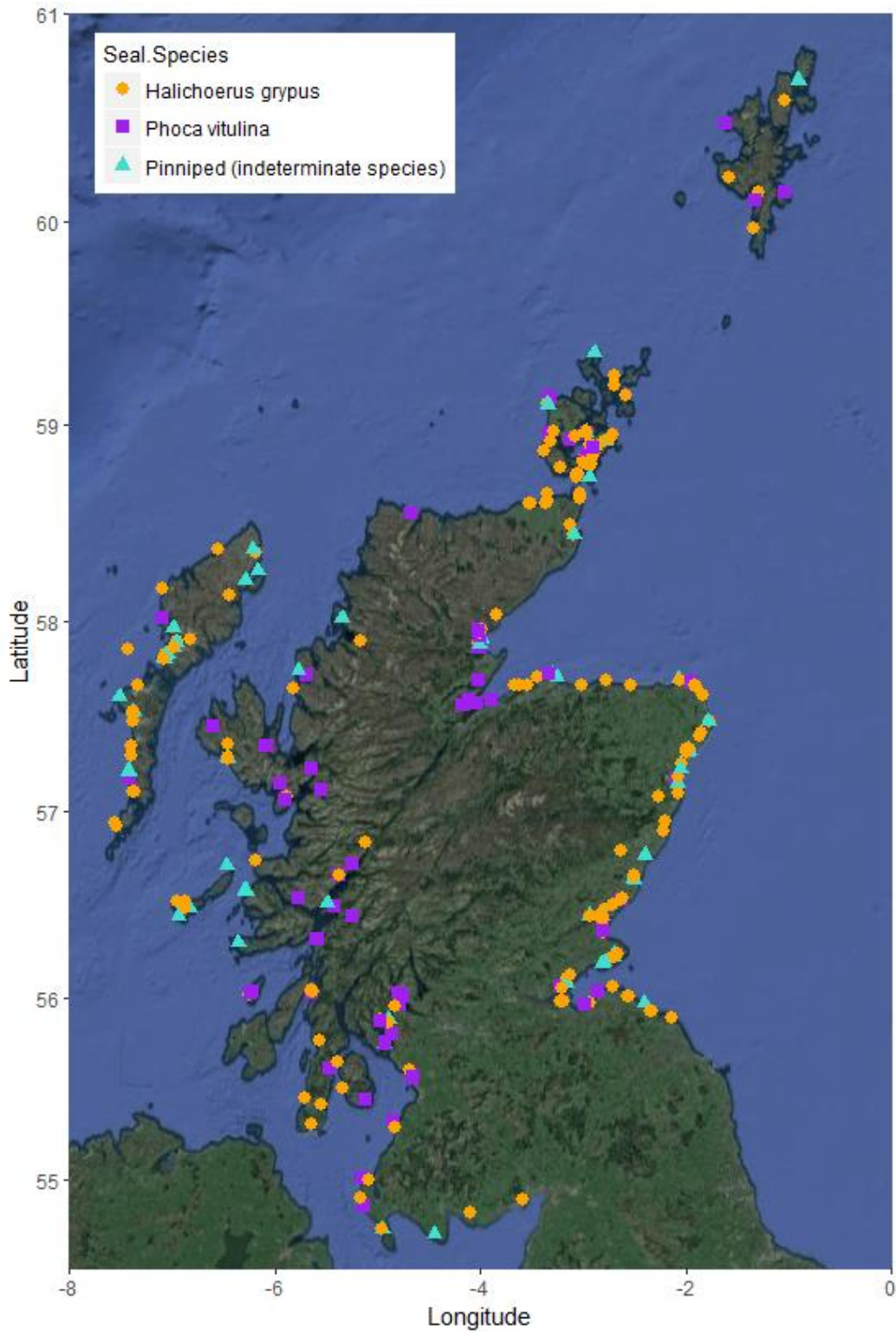


Figure 10: Pinniped strandings 2016

2.5 Cetacean strandings

Two hundred and sixty-three cetaceans comprising of 16 different species were reported to SMASS in 2016. The most frequently reported species was the harbour porpoise (n=137, 52%) this is 55.3% on the number reported last year. There was no specific geographical bias unlike the large number reported 2013. Short-beaked common dolphins (*Delphinus delphis*)

(n=25, 9.5%) were the second most commonly reported. White-beaked dolphins (*Lagenorhynchus albirostris*) and minke whales (*Balaenoptera acutorostrata*) both accounted for 15 cases (5.7%). Only 29 (11%) animals were reported that could not be identified to a species level. Of those 7 (24%) were animals that were either common or striped but the photos weren't of suitable quality to allow differentiation. This is an improvement on previous years and is due to increased use of mobile phone images in submissions and the gratefully received assistance from the vertebrate department at the National Museum of Scotland (NMS). Of the remaining 12 species all of which, with the exception of long-finned pilot whale (n=11, 4.1%) were single figure strandings, Risso's dolphin (n=8, 3%), striped dolphin (*Stenella coeruleoalba*) (n=6, 2.2%), humpback whale (*Megaptera novaeangliae*) (n=4, 1.5%), sperm whale (*Physeter macrocephalus*) (n=3, 1.1%), were the most common. The remaining species were in descending order: Atlantic white-sided dolphin (*Lagenorhynchus acutus*) (n=2, 0.7%), bottlenose dolphin (n=2, 0.2%), fin whale (*Balaenoptera physalus*) (n=2, 0.7%) Cuvier's beaked whale (*Ziphius cavirostris*) (n=1, 0.3%), killer whale (n=1, 0.3%), pygmy sperm whale (n=1, 0.3%) and Sowerby's beaked whale (n=1, 0.3%).

Of the 263 animals, 50 (19%) cases were necropsied. This was a slight decrease in numbers compared to 2015 (Figure 11). Of those animals that were not necropsied 41 (19.2%) were sampled by volunteers this is a slight increase on 2015. Figure 12 shows the spatial distribution (excluding harbour porpoise) of cetaceans for 2016.

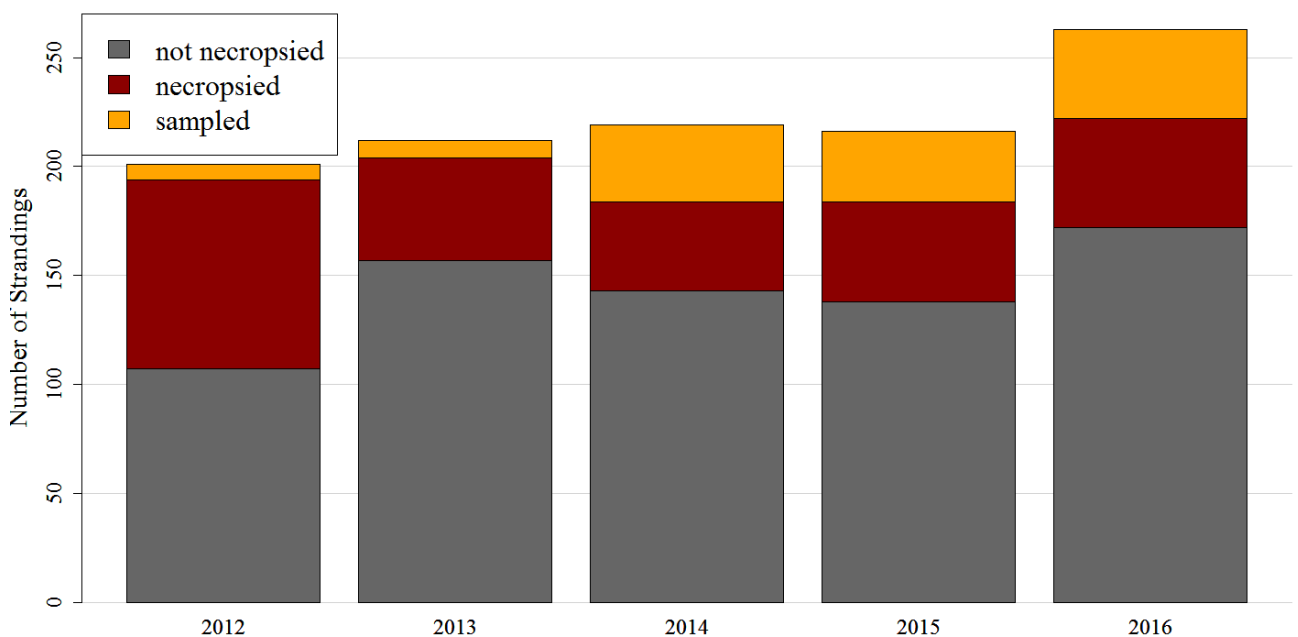


Figure 11: Cetacean strandings 2012-2016, all species

Twenty-eight (20%) harbour porpoise were subjected to necropsy and the most common cause of death was found to be bottlenose dolphin attack (28.5%), a slight increase than in 2015. As in previous years, the most common cause of death for other cetaceans was live stranding (45.4%). This is defined as morbidity and eventual mortality as a result of the cascade of physical processes invoked by becoming stranded. This diagnosis is attributed to

cases where there is good clinical or pathological evidence of live stranding and no other cause can be identified which would otherwise explain the stranding, for example trauma, poor body condition or concurrent infectious disease. Also of note is the prevalence of meningoencephalitis identified in pelagic delphinids, in some cases attributed to *Brucella ceti* infection. It appears meningoencephalitis due to *Brucella ceti* infection is overrepresented in this group of cetaceans. Figure 12 shows the subclasses of cetaceans (excluding harbour porpoise) found stranded around Scottish coasts in 2016. An overview of the findings/cause of death of all cetaceans necropsied, sampled and not necropsied in 2016 can be found in tables 3 and 4 in Section 3 of this report.

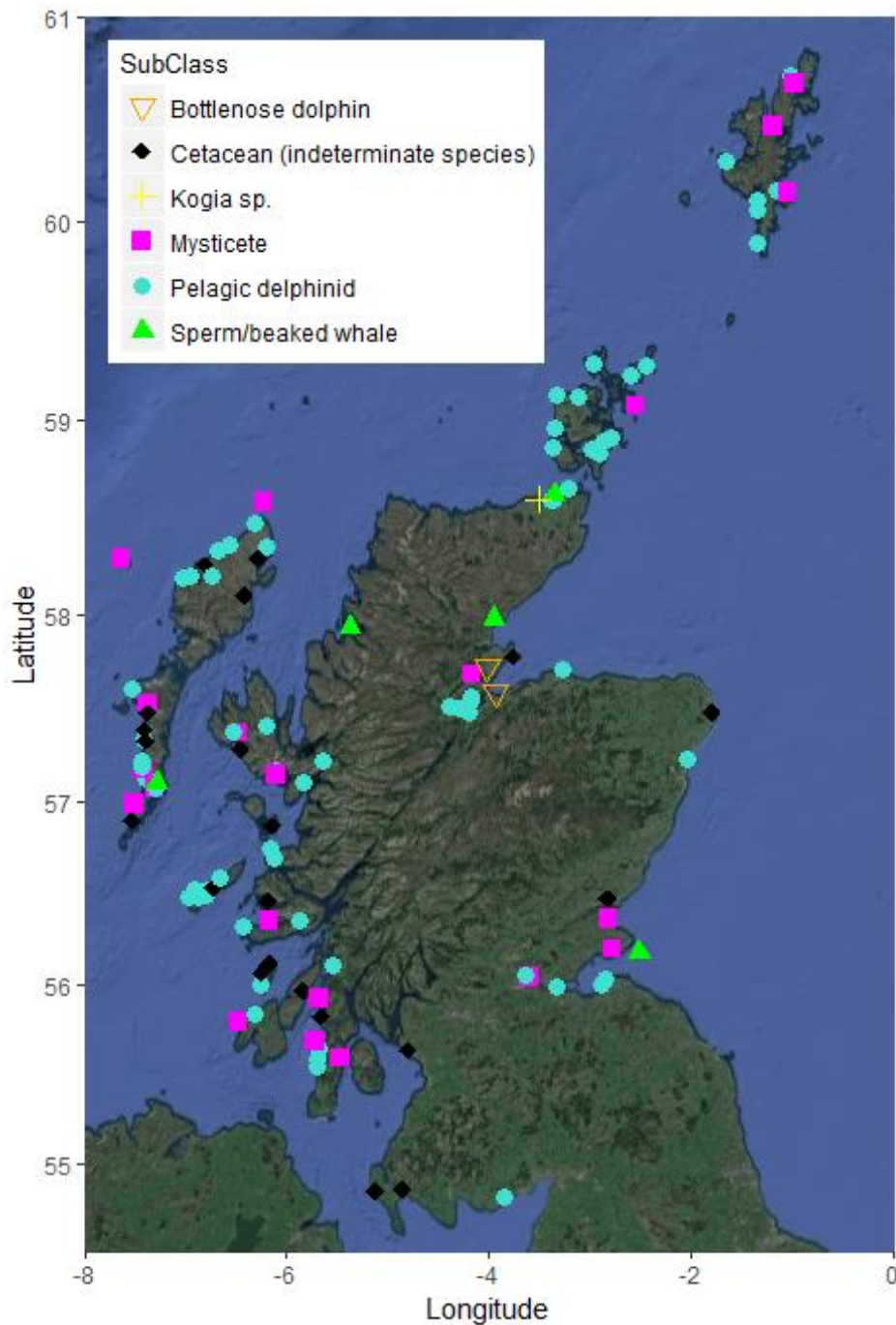


Figure 12: All cetacean strandings excluding harbour porpoise 2016

2.6 Harbour porpoise strandings 2016

The number of harbour porpoise strandings (n=137) showed a 55.3% increase in 2016. This comprises of 52% of the total cetacean strandings in 2016, compared to 28% of the reported strandings in 2015. Figure 13 shows the spatial distribution of harbour porpoise cases. As in previous years, the age make up of harbour porpoise strandings differs depending on time of year with more juveniles and sub-adults stranding between January and June, most likely as a consequence of loss of condition through the winter months. Neonates are only found between June and September, coinciding with the calving season. Adults strand regularly throughout the year with the highest numbers occurring in June and July. The majority are females and this may be attributable to extra stress during the calving season. Fewer animals are reported in the last three months of the year.

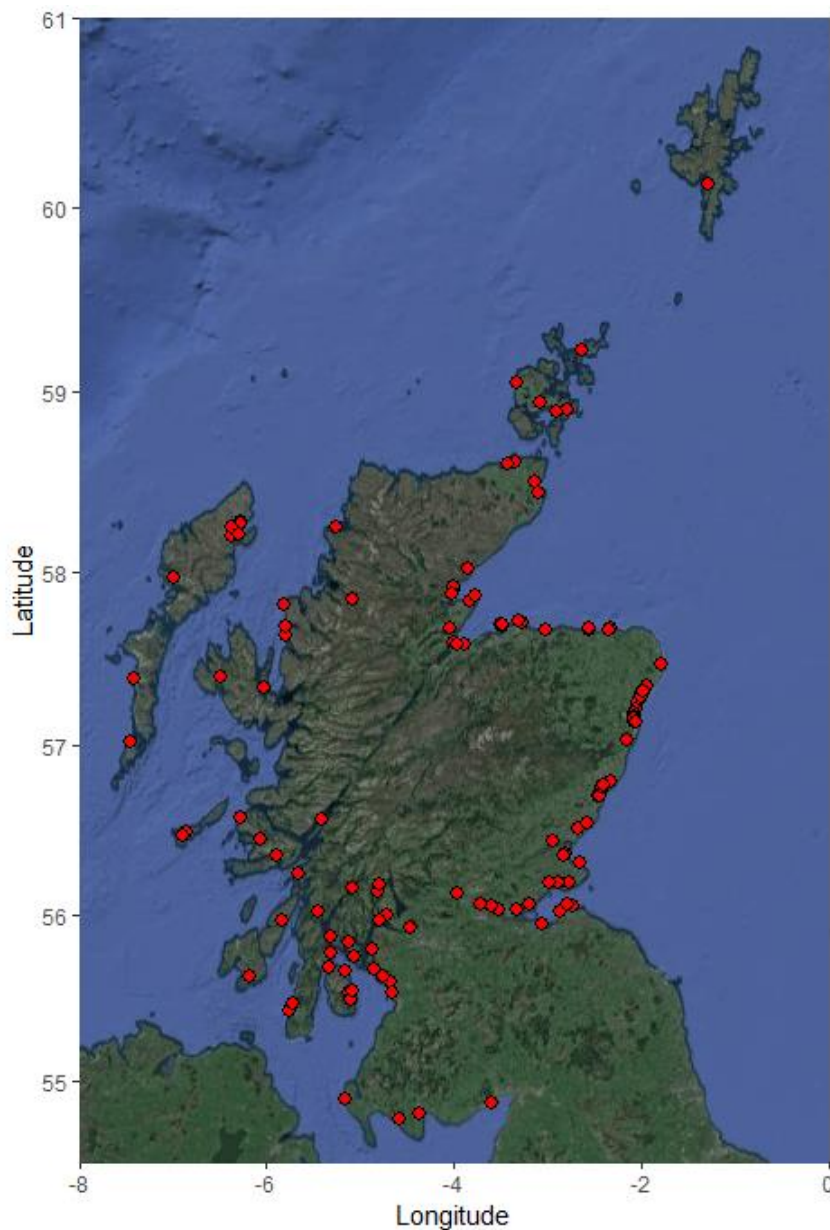


Figure 13: Spatial distribution of Harbour porpoise strandings 2015

Section 3: Cause of death/findings summary tables

Table 3: Cetaceans examined and sampled 2016

		Grand Total	Developmental abnormality	Gastritis and/or Enteritis	Generalised Bacterial Infection	Generalised Chronic debilitation	Live Stranding	Live Stranding: Successful refloat	Maternal Separation/Starvation	Meningoencephalitis	Physical Trauma: Entanglement	Physical Trauma: Bottlenose Dolphin Attack	Physical Trauma: Other	Physical Trauma: Possible grey seal predation	Pneumonia: Bacterial	Pneumonia: Parasitic	Starvation/Hypothermia	Pending	Samples Taken	Grand Total			
Bottlenose dolphin		1					1												1	2			
Harbour porpoise		37	2	1	1	4	1	3		11	3	4	2	1	3	1			25	62			
Pygmy sperm whale		1				1														1			
Mysticete	Fin whale	1				1													1	2			
	Minke whale	2							1	1									2	4			
	Humpback whale	1								1									1	2			
Pelagic delphinid	Atlantic white-sided dolphin	2				1	1													2			
	Killer whale	1								1										1			
	Long-finned pilot whale	0																	1	1			
	Risso's dolphin	3	1			2													3	6			
	Short-beaked common dolphin	5			1	3			1										5	10			
	Striped dolphin	3				2			1											3			
sperm/beaked whale	White-beaked dolphin	6				2	1				1			1		1			1	7			
	Cuvier's beaked whale	0																		0			
	Sowerby's beaked whale	1				1														1			
Sperm whale		0																		0			
Grand Total		64	1	2	2	1	17	4	3	2	1	11	3	3	1	4	2	1	1	4	1	40	104

Table 4: Cetaceans not examined 2016

		Advanced Autolysis	At Sea	Carcase Incomplete/Scavenger Damage	Carcase Not Found	Delay in Reporting	Insufficient Data	Morphometrics Taken	Not Priority	Removed by Council	Removed by Tide	Weather/travel difficulties	Grand Total
Harbour porpoise		41		6	2	9	2		1	1	9	4	75
Pygmy sperm whale													0
Mysticete	Fin whale												0
	Minke whale	6	4								1		11
	Humpback whale		2										2
Pelagic delphinid	Atlantic white-sided dolphin												0
	Killer whale												0
	Long-finned pilot whale	7		1				2					10
	Risso's dolphin	2											2
	Short-beaked common dolphin	12		1						1	1		15
	Striped dolphin	3											3
sperm/beaked whale	White-beaked dolphin	6		2									8
	Cuvier's beaked whale			1									1
	Sowerby's beaked whale												0
Indeterminate Species	Sperm whale	2	1										3
	Baleen whale	2	1										3
	Cetacean	7	2	1		1	2			1			14
	Dolphin	3		1			1						5
Common/striped dolphin		5		2									7
GrandTotal		96	10	15	2	10	5	2	1	1	11	6	159

Table 5: Cause of death/findings for pinnipeds, basking sharks and marine turtles reported 2016

	Grey seal	Harbour seal (Common seal)	Seal (indeterminate species)	Leatherback turtle	Basking shark	Grand Total
Necropsied	63	23	7	1		94
Physical Trauma: Entanglement	2	2				4
Physical Trauma: Likely Grey seal predation	2	2				4
Physical Trauma: Possible Grey seal predation	4	2				6
Physical Trauma: Possible spiral "Corkscrew" Lesions	53	9	6			68
Physical Trauma: Shot (Known)	2	1				3
Physical Trauma: Shot (suspected)			1			1
Physical Trauma: Other		1				1
Pneumonia: Parasitic		3				3
Pending		2				2
Not Established		1		1		2
Sampled by Volunteer	4	6			1	11
Not Examined:	186	44	71			301
Advanced Autolysis	141	29	22			192
Carcase Incomplete/Scavenger Damage	3		4			7
Delay in reporting	3	4	4			11
Insufficient Data	5	3	38			46
Not Priority	29	2	1			32
Other		1				1
Reason Unknown		1				1
Removed by Tide	2	2	2			6
Weather/travel difficulties	3	2				5
Grand Total	253	73	78	1	1	406

Section 4: Mass stranding events (MSE's)

4.1 Mass stranding events (MSE's) multiple strandings and unusual mortality events

Note: A mass stranding event (MSE) is defined as two or more animals that are not a cow/calf pair. There were six MSE's in 2015, including a large pilot whale mass stranding event on Staffin. In contrast, there was only one small MSE event reported in 2016.

4.1 M25.1- M25.2/16 Risso's dolphin (*Grampus griseus*)

Two female Risso's dolphins were found live stranded on the Beaully Firth on the 8th of January. By the time rescuers arrived at the scene one animal was already dead. This animal was recovered for necropsy. The second animal, a similar sized female Risso's dolphin pictured below was refloated on the incoming tide after several hours, but turned up dead a month later at Munlochy on the Moray Firth and not in a suitable condition for necropsy. The animal necropsied had evidence for agonal water aspiration and successive strandings based on the bruising to the rib cage and scapula and mud/silt present throughout the entire respiratory system. It was debilitated, likely due to an active peritonitis originating from a large, 12-15 cm in diameter invasive mass containing friable, dry, yellow/green plicated tissue, characteristic of a neoplastic or fungal mass. Similar tissue invasion was seen in the spleen and throughout the liver. The lesions were chronic but could have caused a more acute colic, possibly causing the live stranding. Cultures did not reveal any fungal isolates; however *Brucella ceti* was isolated in mixed culture from the hepatic mass. Histology on the fibrous tissue (hepatic and splenic mass) contained relatively large amounts of acellular tissue which was bi-refringent with polarised light (suggestive of amyloid deposition). Large numbers of macrophages were present with large amounts of cytoplasm containing yellow/green pigment. Variable numbers of lymphocytes and plasma cells were present, sometimes with haemorrhage and notably very small numbers of neutrophils. This animal had a severe, chronic, bacterial peritonitis with systemic effects. The hepatic mass was a chronic lesion due to *Brucella ceti* which may have caused an acute colic leading to the live stranding of this individual. We believe this to be the first isolation of this organism from this species.



Figure 14: M25.1/16 adult Risso's dolphin (*Grampus griseus*) from the Beauty Firth.



Figure 15: M25.2/16 female Risso's dolphins (*Grampus griseus*) live stranding Beauty Firth.



Figure 16: M25.2/16 female Risso's dolphin (*Grampus griseus*) the same animals as above, a month later at Munloch, Moray Firth.

Section 5: Entanglement cases

The term entanglement usually only applies to large whales (particularly minke and other mysticetes) and leatherback turtles. Animals are sometimes seen with gear attached, usually flukes and fins but occasionally through baleen plates in the mouth. Over 70% of dead stranded cases are discovered with no material remaining on the animals and diagnosis is made by lesion pattern. Acute cases similar to bycatch, sub-acute cases result in exhaustion and impaired feeding and evidence of water aspiration or drowning. Chronic cases are often very thin and debilitated and show chronic wounds caused by abrasion and pressure from entangled equipment.

5.1 M4/16 – Killer whale (*Orcinus orca*)

This adult female killer whale was found dead stranded on the rocky foreshore of Tiree. It was approximately four days post stranding before it was possible for us to necropsy and as a result most of the internal organs were in a moderate to severe state of autolysis. The animal was in moderate body condition; however the tissues indicating moderate dehydration. Back muscle mass was good. There was evidence of reasonably chronic entanglement, characterised by an encircling lesion over the tailstock and twin linear abrasions on the ventral surface of the tailstock consistent with entanglement with 10-15mm rope, e.g. a creel (crab pot) line. The epidermis around the tailstock was thickened on the left side with irregular structure to the skin in cross section and there appeared to be areas of pressure necrosis over the tailstock, although interpretation of this is hampered by subsequent autolysis. There were areas of abrasion possibly due to entanglement on leading edge of pectoral fins at junction with axilla; however the possibility that these are post-mortem trauma cannot be wholly excluded. Visceral organs were autolysed beyond the

state of useful interpretation but there was no gross evidence of a significant co-existing disease process. The liver was congested and the lungs were symmetrical and also congested, although no clear indication of water aspiration could be detected. The stomach contained an excess of fluid, most likely sea water. No other contents were seen, no food, otoliths or other ingesta. The intestines were also largely empty with scant faeces in the rectum. A small area of the tailstock appeared to show bruising, however it is interesting there was no clear indication of other sub cuticular bruising or haemorrhage which would support ante mortem rope trauma. Nonetheless the chronicity of the epidermal lesions on the tailstock and the fluid in the stomach strongly supported a diagnosis of entanglement. Histology revealed a moderate, sub-acute, multifocal suppurative dermatitis. These findings are suggestive of a localised bacterial infection and would not be inconsistent with a relatively recent rope entanglement with subsequent dermal abrasion. It is possible this animal suffered a two-stage entanglement, with a chronic, but non-fatal original entanglement responsible for the chronic tailstock lesions followed several days later by a terminal event which resulted in the ingestion of significant volumes of seawater.

5.1.1 Additional tests

Analysis of the teeth would suggest that the animal was at least 20 years old and examination of the ovaries suggests that she's never been pregnant. Additionally, genotyping of Lulu using microsatellites showed she was homozygote for the seven markers used so far. This is unprecedented in any other killer whale population, and suggests this individual was highly inbred.

Toxicological analysis for PCB's on the blubber, conducted by CEFAS according to standardised protocols, showed this animal to have a level of 957 ppm lipid weight of sum 25 congeners. This the highest ever level found in this species in the Eastern Atlantic and raises significant questions about the potential viability of this population. We will be undertaking additional work to better understand the potential distribution of contaminants in these apex populations.



Figure 17: M4/16 killer whale (*Orcinus orca*) "Lulu" Tiree.

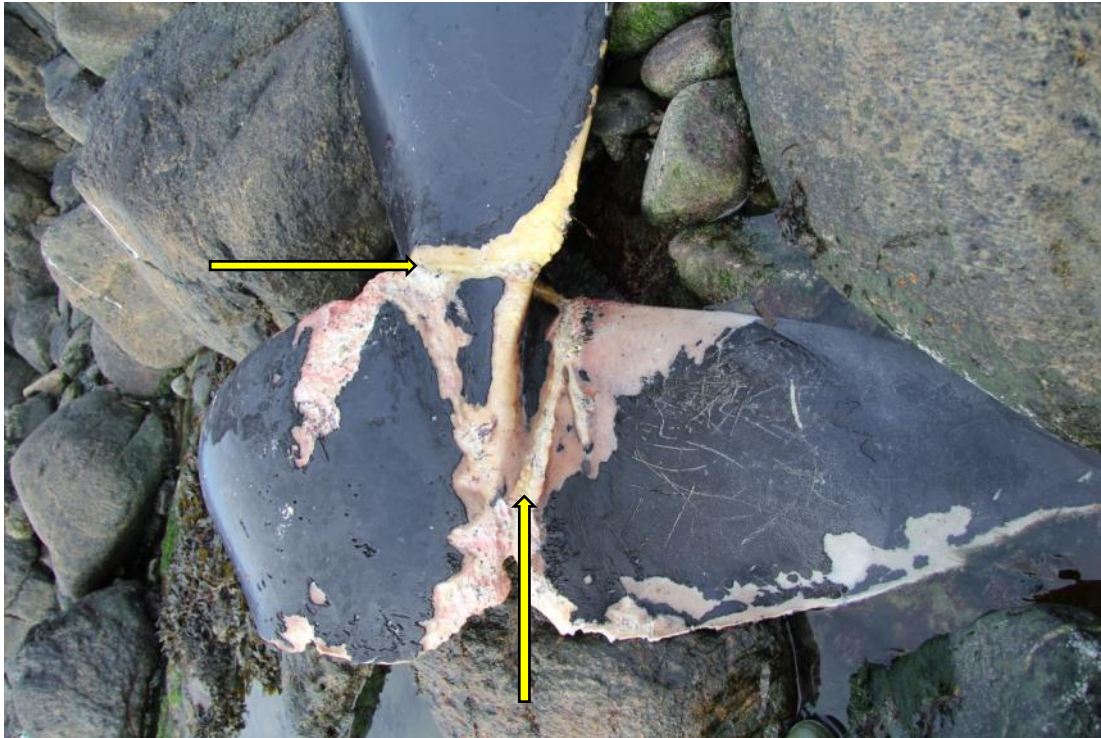


Figure 18: Close up of tailstock of M4/16 showing entanglement lesion (arrows).

5.2 M251/16 – minke whale (*Balaenoptera acutorostrata*)

This sub-adult male Minke whale was found dead stranded on West Sands beach, St. Andrews. It was necropsied on site and showed linear abrasions on the fluke, and tailstock. There was linear bruising over the thorax. The thoracic cavity was filled with fluid and both lungs were congested and fluid filled, with no asymmetry. The animal was moderately autolysed but appeared otherwise in good condition with recent fish digesta and bones in the cardiac stomach. Bacteriological cultures of lung, liver and spleen did not reveal any significant isolates. These findings are consistent with entanglement and subsequent drowning. There was an anecdotal report of fisherman reporting an entangled whale approximately 20 miles off Fife coast on Kilrenny bank, 36 hours before first seen at West Sands St Andrews.



Figure 19: M251/16 minke whale (*Balaenoptera acutorostrata*) St. Andrews.



Figure 20: M251/16 minke whale (*Balaenoptera acutorostrata*) showing entanglement lesions "arrows"

Section 6: Grey seal predation (cetaceans).

This newly described phenomenon has so far only been seen on harbour porpoise from regions with sympatric grey seal populations. It is characterised by extensive trauma to blubber and underlying musculature, tissue loss and puncture marks around the head and around wound margins. Often large sections of tissue (both blubber and muscle) are removed, particularly the back muscle either side of the spine. Puncture marks through blubber often around the head and throat area. Blubber and skin commonly stripped of resulting in missing tissue and flaps of blubber. Internal organs and skeleton are normally intact in very fresh cases. This year has also seen a second category of attack where the porpoise initially escapes the seal only to die of sepsis at a later date due to infection arising from bite wounds. We had a total of 14 animals either reported as seal predation cases or diagnosed at necropsy. Of these 14, seven were possible or probably primary trauma cases and four were diagnosed with lesions that indicated past grey seal attack and infection with pathogens consistent with seal bites.

- *Primary trauma cases suspected to be seal predation on harbour porpoise*

2. M237/16, 04/04/16 Ardesier, Highland. Photographs would suggest that this was a **probable grey seal predation** case.
3. M250/16, 16/05/16, Skipness, Argyll & Bute. Photographs provided would suggest that this was a **possible grey seal predation case**.
4. M252/16, 01/06/16, West sands, Fife. Photographs provided would suggest that this was a **possible grey seal predation case**.
5. M277/16, 5/01/16, Lossiemouth, Moray. Photographs provided would suggest that this was a **possible grey seal predation case**.
6. M419/16 06/10/16, Leven, Fife. Although reported as a possible grey seal predation case at necropsy this was diagnosed as a **starvation case** with possible avian/seal scavenger damage; however the possibility of grey seal predation cannot be ruled out.
7. M424/16 14/10/16, Grey hope, Aberdeen. Although reported as a possible grey seal predation case at necropsy it would appear to be due to **enteritis/peritonitis** with possible avian/seal scavenger damage.
8. M557/16 26/11/16, Macrihanish, Argyll & Bute Photographs would suggest that this was a **probable grey seal predation case**.
9. M608/16, 10/12/2016, Saltcoats, North Ayrshire. Photographs would suggest that this was a **possibly grey seal predation case**.
10. M647/16, 27/12/16, Broadsea Bay, Dumfries and Galloway. Photographs provided would suggest that this was a **possible grey seal predation case**.



Figure 21: M557/16 harbour porpoise (*Phocoena phocoena*) showing grey predation lesions.

■ *Secondary infection possibly due to seal bite lesions on harbour porpoise*

1. M369/16, 16/08/16 Dornoch, Highland. Photographs would suggest that this was a probable grey seal predation case. This neonatal harbour porpoise was reported as live stranded and died soon after it was found. There was a severe chronic tailstock injury comprising bilateral lacerations with some evidence of healing/granulation yet there was a deep infection into the lumbosacral spine. Necrotic foul-smelling tissue and osteomyelitis suggest >2 week chronicity. A similar foul-smelling abscess was noted in bullae in the right lung, which likely seeded from the tailstock. Several puncture wounds around the throat also showed evidence of necrotic foci within the blubber. The animal was generally toxic in appearance, with dilated microvasculature and severe fatty change and jaundice in the liver. Bacteriology produced a collection of organisms more commonly associated with the oral cavity and bite wound infections of seals. So it is likely the original insult was a predation attempt, most likely due to a grey seal.
2. M559/16, 26/11/16, St Andrews, Fife. This aged female harbour porpoise was live stranded but died soon after. There was an area of skin and blubber loss on the right side of the head between the eye and pectoral flipper. There were four parallel rake marks over the melon near the blow hole. Granulation and necrosis would indicate both lesions were chronic and very consistent with grey seal attack. Subsequent infection/sepsis was evident, both local to the defects and systematically characterised by neovascularisation and vaso dilated purple red-red regions around blood vessels. Sand was present in the stomach with scant food remains. Bacteriology on various tissues including head wound lesion did not reveal any significant isolates. The porpoise was in good condition and it is likely live stranded, probably due to a failed seal predation attempt.

3. M561/16, 28/11/16, This juvenile female harbour porpoise was found dead stranded in fresh condition at St. Mary's Holm, Orkney. The animal was in excellent body condition with good blubber deposits; however, the blubber itself had a slightly jaundiced appearance. There were several granulating lacerations/ bite marks present around the head area with accompanying areas of necrosis in the blubber. There was a severe bite/lesion to the left pectoral fin accompanied by severe necrosis and a foul smell. This had extensive tissue reaction, necrosis, and foul-smelling liquifactive necrosis, particularly sub-lingual and in the left pectoral fin. The latter also had been physically crushed, with a fracture to the radius and restriction in viable blood supply distal to carpal bones. There was also liquifactive necrosis in blubber around the head and in regions over the flank. There were food remains in the form of squid beaks and lenses in the cardiac section of the stomach. There were no parasites noted in the GI tract. The trachea and bronchi contained stable foam and the lungs were bilaterally congested. There was no focal abscessation noted or any parasites. There was excess fluid/ exudate present in the pleural cavity. The carcass was generally septic in appearance, with diffuse vascular dilation, but also moderately autolysed. The animal had a severe sepsis, likely originating from a number of puncture wounds and tears on the head and, most notably, left pectoral fin. The isolation of *Streptococcus phocae*, *Actinomyces marimammalium*, *Arcanobacterium phocae*, *Streptococcus halichoeri*, and most notably *Mycoplasma phocicerebrale* which is the recognised cause of seal finger in humans from various sites including the pectoral fin would confirm this as a sepsis due to bite wounds inflicted by a grey seal. Histology is pending.
4. M616/16, 13/12/16, St Cyrus, Aberdeenshire. This juvenile female harbour porpoise was in thin condition, with evidence of sand and water aspiration consistent with live stranding. Muscle loss was notable and the liver was significantly fatty, orange/tan in colour, and friable; suggesting a period of recent catabolism (lipidosis). This could be a sequel to the traumatic and chronic/granulating injuries on the tailstock. These were possibly the result of a bite, however predation/scavenging whilst the animal was live stranded and subsequently naturally refloated cannot be ruled out. No recent feeding was evident; the animal was dehydrated and had a moderate nematode burden in the lungs (bronchi and pulmonary vasculature) and stomach. Overall the animal was debilitated, most plausibly as a result of a traumatic tissue loss. Grey seal attack is a possibility.



Figure 22: M369/16 harbour porpoise (*Phocoena phocoena*) showing bite wound to tail stock.



Figure 23: M561/16 harbour porpoise (*Phocoena phocoena*) showing bite wound to pectoral flipper

Section 7: Brucellosis cases

This term is applied to any cases where gross pathology of the brain would suggest this condition and or where *Brucella ceti* was isolated from the central nervous system (CNS) of an animal. The diagnosis is backed up through histopathology. The condition is often associated with live stranding; these animals often exhibit erratic and unusual swimming behaviours. The disease seems to affect predominantly the families Delphinidae and Ziphiidae. There were 2 confirmed cases reported during this period.

7.1 M299/16– Atlantic white-sided dolphin (*Lagenorhynchus acutus*)

This adult male Atlantic white-sided dolphin was observed live stranding rolling onto its side in the surf at Dunnet Bay and was relocated to Scrabster for refloating by SSPCA and BDMLR. Several attempts were made but animal kept swimming erratically and rolling onto its side and stranding again. The animal was euthanased by a local vet with 100ml of Pentobarbitone into the tail fluke vein.

The animal was in a good nutritional condition and showed signs of being an aged animal with worn and some missing teeth. There was evidence of live stranding present with bruising over scapula, lung asymmetry, and sand in the mouth and oesophagus. There was no evidence of recent feeding with all stomach compartments empty. The spleen was swollen and there was blood stained fluid in the peritoneal cavity assumed due to euthanasia with barbiturate. There appeared to be a chronic arthritis present at C1 which was fused together with the atlanto-occipital joint. This had been longstanding. Histology showed no evidence of *Brucella*-associated pathology in the brain of this animal. However the osteoarthritis of occipital condyles and C1 are highly likely to be an age related osteoarthritis, which is not uncommon in this species whether or not the isolation of *B.ceti* from the CSF is related to this lesion is uncertain. It has always been heavily debated if *Brucella* spp. bacteria cause these lesions or just colonise them easily. I believe they colonise lesions already present and make them much more severe than if they were sterile. This lesion almost certainly would have impacted on the animal's ability to dive/ swim and forage effectively enough to catch prey and the pain associated with the osteoarthritis would be significant. Live stranding and euthanasia are the proximal cause of death.



Figure 24: M299/16 Atlantic white-sided dolphin (*Lagenorhynchus acutus*).

7.2 M485/16– Striped dolphin (*Stenella coeruleoalba*)

This juvenile male striped dolphin was found dead stranded at Triagh Mhor Isles of Lewis. It was in moderate body condition but did not show signs of recent feeding and the stomach and entire gastro-intestinal tract were largely empty apart from some scant faeces, nematodes and ingested water. The lungs and upper respiratory tract contained fluid and sand, respectively consistent with live stranding. Of most significance were notably dilated cerebral ventricles containing an excess of pink, turbid cerebral spinal fluid (CSF), the choroid plexus also appeared inflamed. *Brucella ceti* was isolated in pure culture from both CSF and from the parasitic cyst abscess from around the reproductive tract. This latter isolation may have been a source of infection. Histology showed a very severe, sub-acute to chronic, generalised lymphocytic meningitis and ventriculitis. This would be consistent with a meningoencephalitis due to *Brucella ceti* infection.



Figure 25: M485/16 striped dolphin (*Stenella coeruleoalba*).

Section 8: Other notable single strandings

8.1 M102/16 – Harbour porpoise (*Phocoena phocoena*)

This juvenile male harbour porpoise was in thin condition. There were extensive disseminated yellow lesions/ abscesses throughout the blubber subcutaneous tissue. There was brown purulent fluid/discharge in both trachea and bronchi this was accompanied by congestion in the lung parenchyma and disseminated abscessation in the mediastinum and emphysemas around the great vessels and rete mirabilis. There was notable dilation of the right ventricle of the heart indicating chronic pulmonary hypertension. There was severe diffuse lymphadenopathy particularly in the pulmonic lymphatics. No large focal abscesses were found and all other organs appeared grossly normal. A haemolytic *Staphylococcus* sp. was isolated from the lung, lung fluid, subcutaneous lesion and the choroid plexus suggesting a metastatic spread. Histology showed a very severe, sub-acute, generalised granulomatous broncho-pneumonia. Severe, sub-acute to chronic, generalised bi-lateral adrenal cortical hyperplasia. Severe, sub-acute to chronic, generalised fat necrosis.

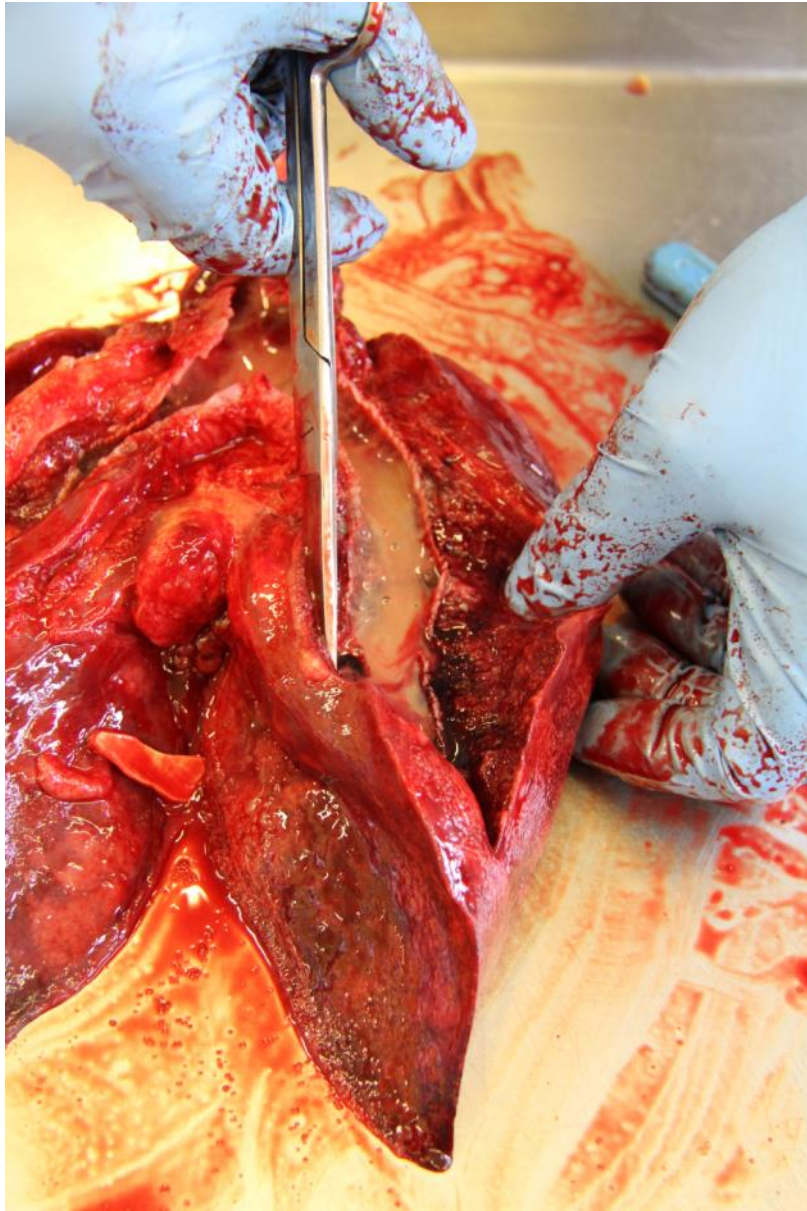


Figure 26: M102/16 harbour porpoise (*Phocoena phocoena*) showing was brown purulent fluid/discharge in both trachea and bronchi

8.2 M267/16 – White-beaked dolphin (*Lagenorhynchus albirostris*)

This aged adult male white-beaked dolphin was found dead stranded on Dunnet bay. The animal was in good condition with good muscle mass but thin blubber which appears normal for this species. There were several “tattoo” like lesion around the left eye. The animal had numerous missing teeth and those that were present were extremely worn. There were areas of hyper pigmented skin on both pectoral fins and tail flukes. All this would suggest quite an aged animal. The animal had mature and active testes, with sperm present in the epididymis. Both the cardiac and fundic stomachs were distended and full of fish bones and otoliths possibly to the point of impaction. No digesta was present in the pyloric stomach, duodenum or proximal SI. The enteric vasculature appeared distended. The lungs were asymmetric with the right lung hyper inflated, both trachea and bronchi contained stable foam, suggesting live stranding and agonal water aspiration. The brain had

slightly dilated cerebral vessels and dry meninges. There was a normal amount of CSF and the cerebral ventricles were not dilated. The bacteriology did not reveal any significant isolates, though a group C Streptococci isolated in pure growth from the RPLN Cyst and in mixed growth from the lung does have a profile similar to other group C streptococci isolated from this species. Histology showed a severe, sub-acute to chronic-active, focally extensive and multi-focal, primarily lymphocytic meningitis and necro-suppurative thrombotic vasculitis. The lesions in the brain would have severely compromised this animal and probably led to the live-stranding.



Figure 27: M267/16 white-beaked dolphin (*Lagenorhynchus albirostris*) from Dunnet Bay

8.3 M273/16 – Harbour porpoise (*Phocoena phocoena*)

This adult sexually active male harbour porpoise was found dead stranded in thin body condition and exhibiting multiple chronic, open and necropurulent lacerations over the flank 1-5cm in length. Associated blubber tissue showed indication of liquifactive necrosis with some tissue remodelling occurring around the periphery of the lesions. In addition several tattoo lesions were noted. In addition there were areas of deep tissue bruising around the thoracic rete (T9-L1) and bruising and associated contusions over the left lung. No typical BND or Hg rake marks were seen. The liver was very friable and exhibited a large *Campula oblonga* burden, with notable dilatation, fibrosis and calcification of the bile ducts. There was a heavy verminous pneumonia with associated fluid in main airways, possible agonal aspirated water. The stomach was empty of recent digesta and was dry with scant nematodes and several otoliths 7-13mm in length indicating no recent feeding but a history of catching large fish. No significant digesta in intestines. The animal appeared to have been sexually active with mature testes, each around 700g.

This picture is consistent with an animal which had survived a traumatic insult, possibly BND or grey seal attack which had led to significant compromise and debilitation in an animal

already in poor body condition due to energies expended during the breeding season. Lung contusions in addition the verminous pneumonia would have impaired respiratory function, the liver appeared to manifest a diffuse hepatopathy and the widespread cutaneous infection probably may have led to a generalised sepsis, however bacteriology did not reveal any significant isolates. Histopathology showed severe, chronic-active, generalised verminous pneumonia with thrombosis and secondary bacterial involvement. Severe, variably acute to chronic-active, multi-focal, granulo-suppurative dermatitis. Severe, sub acute to chronic, generalised hepatic fatty change. Severe, chronic-active, focally extensive, trematode cholangitis. This animal had a multitude of chronic-active pathologies. The lung and liver parasitic lesions would have resulted in severe compromise, especially the thrombosis of blood vessels which may have induced the cardiac lesions. The skin lesions range from chronic-active (granulation tissue present) to acute (fresh haemorrhages) suggesting there may have been inflicted over time including relatively recently.



Figure 28: M273/16 harbour porpoise (*Phocoena phocoena*) exhibiting multiple chronic, open and necropurulent lacerations/lesions over the flank 1-5cm in length.

8.4 M396/16– Risso’s dolphin (*Grampus griseus*)

This juvenile male Risso’s dolphin showed severe, chronic, spinal deformities with pronounced thoracic kyphosis and corresponding lumbar lordosis to the extent of a 30-31cm dorso-ventral deviation in the vertical plane. A degree of scoliosis was also present, with severe remodelling and deviation of lateral spinous processes to attempt to maintain the axial musculature alignment. There was severe associated muscle and skin deformity, with some areas of fissures in the skin tissue. There was a large volume of fluid in the thoracic cavity which was sanguineous and non-proteinaceous, possibly due to the stranding

process. Bacteriology revealed post mortem invaders only. Histology showed a severe, acute, generalised systemic congestion. The congestion suggests a slow death, probably due to heart failure as a sequelae to possible live stranding and there was probably some nutritional compromise as denoted by the vacuolation of hepatocytes but, autolysis reduces the certainty. This was possibly a maternally dependent animal which recently was separated from group support.

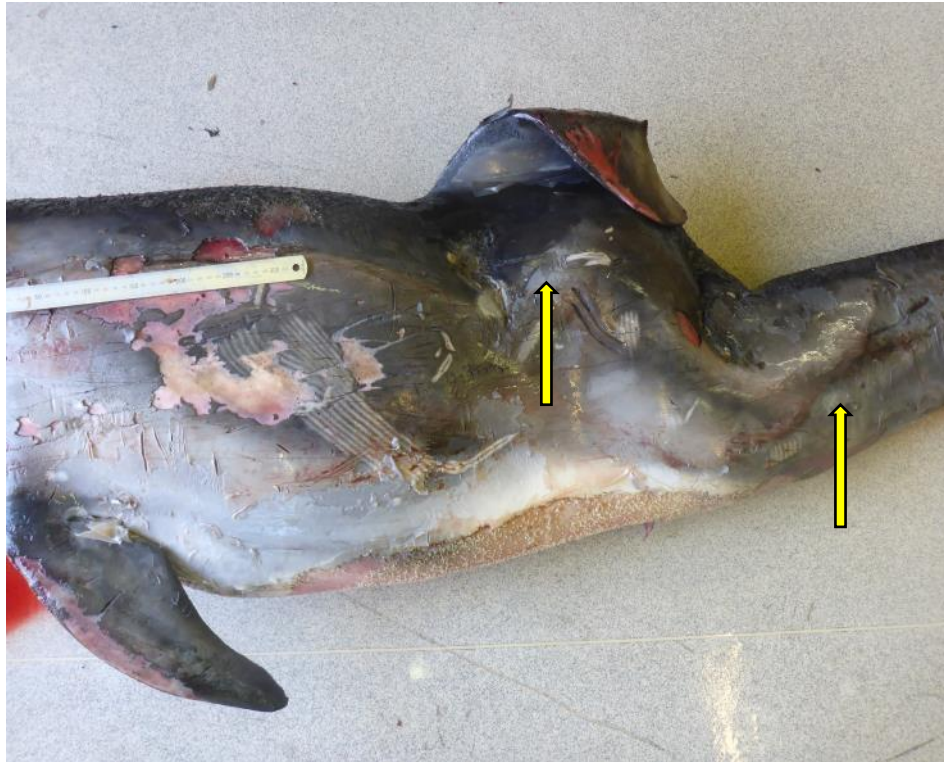


Figure 29: M396/16 Risso's dolphin (*Grampus griseus*) close up of spinal abnormality "arrows" giving the animal a distinctive hump.

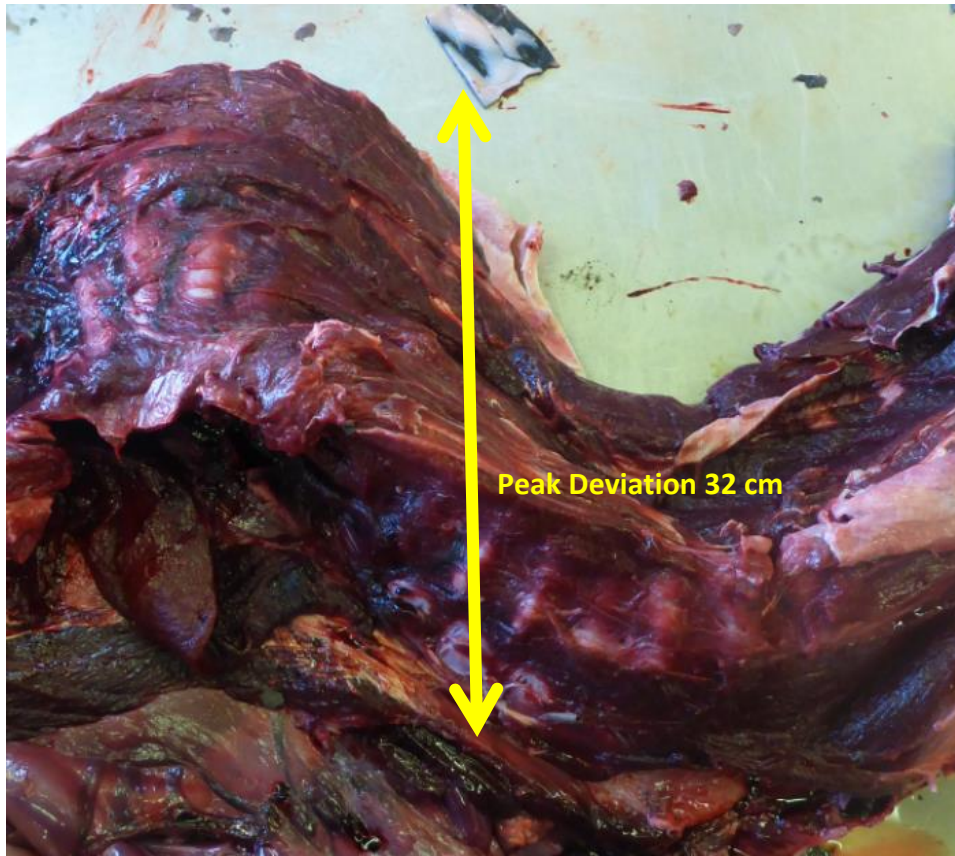


Figure 30: Dissected section of spine showing pronounced kyphosis. Note remodelled alignment of lateral spinous processes.

8.5 M400/16 – Fin whale (*Balaenoptera physalus*)

This recently weaned male fin whale live stranded on rocks off Noss, Shetland, died overnight and finally made landfall for necropsy on 20/09. It was in a tidal area with the animal being partially submerged even at low tide; meaning that the necropsy was largely done underwater and only a limited sample range could be collected. Of note was a verminous thrombus containing numerous *Crassicauda boopis* in the renal arteries, comprising a plicated semi-ordered soft clot within the artery around the caudal pole of the right kidney *Crassicauda* sp. ova along with *Cestode* sp. ova were also noted in the urine of this animal. There was also a moderate to high *Bolbosoma balaenopterae* burden in the GIT. Histology confirmed a severe, chronic-active, multifocal nematode parasite infestation of the kidney and intestine. This would explain the thin condition of the animal. It is possible this animal was suckling, likely socially dependent and high parasite burden all led to the debilitation, possible group separation and terminal live stranding. No evidence for entanglement (chronic or acute) was seen.



Figure 31: M400/16 live stranded fin whale (*Balaenoptera physalus*) Noss, Shetland



Figure 32: M400/16 close up of nematodes (*Crassicauda boopis*) from a renal artery of the fin whale (*Balaenoptera physalus*).



Figure 33: M400/16 *Crassicauda* sp. ova in urine sample of live stranded fin whale (*Balaenoptera physalus*) Noss, Shetland.

8.6 M554/16 – Harbour porpoise (*Phocoena phocoena*)

This male leucistic harbour porpoise was found dead stranded near Cauldhame, Trondra, Shetland. We were unable to recover the animal for necropsy but the animal was sampled by a volunteer. Leucism which is complete loss of pigment production in the body is extremely rare in harbour porpoises and has only been recorded in the UK 7 times in the last 100 years.



Figure 34: M554/16 Leucistic harbour porpoise (*Phocoena phocoena*) Cauldhame, Trondra, Shetland.

8.7 M565/16 – Sowerby’s beaked whale (*Mesoplodon bidens*)

This adult male Sowerby’s beaked whale was found dead stranded at Dunnet bay, Caithness. The animal was in good nutritional condition although there were large areas of skin missing. There was skin missing from the leading edge of the tail flukes and excoriations on the ventral abdomen and thorax. There was bruising and oedema over the dorsa and ventral muscle mass and over the scapula. There were areas of haemorrhage within ventral blubber. All stomach chambers were empty of digesta. The lungs had a pronounced asymmetry with hyperinflation of the right and congestion in the left there was stable from present in the trachea, bronchi and smaller airways. There were no nematodes noted in the pulmonary system. There was a mild fluke infestation of the liver accompanied by fibrosis of the ducts the species of fluke is thought to be *Oschmarinella* sp. There was haemorrhage within the cranial vault over both left and right hemispheres the brain itself was slightly congested and the meninges thickened. Bacteriology did not reveal any significant isolates. Histology showed severe, sub-acute to chronic, multifocal non-suppurative pan-encephalitis. Severe, chronic active focal hepatic abscessation. Mild to moderate, chronic-active, focal hepatic trematode parasitism. The lesions in the brain are suggestive of an infectious process, possibly due to an intra-cellular pathogen, would have been clinically relevant and definitely compromised the animal; *Brucella* and *Toxoplasma* would be included in the differential diagnosis. However, the presence of the liver abscess may suggest haematogenous spread of its causative bacteria.



Figure 35: M565/16 Sowerby’s beaked whale (*Mesoplodon bidens*) from Dunnet Bay.

8.8 M575/16 – Pygmy sperm whale (*Kogia breviceps*)

This juvenile male pygmy sperm whale was found dead stranded on a rocky beach just east of Thurso Caithness. There was skin loss to the leading edge of the tail flukes and extensive ventral bruising and excoriations. There was sand and gravel in the trachea and stable foam in the trachea and bronchi. The lungs were symmetrical but very congested fluid in the smaller airways and appeared wet in cut surfaces. The liver was very congested. There was no evidence of recent feeding but faecal matter in the smaller distal intestine suggests a period of anorexia prior to stranding. The cerebral vasculature was congested and there was some indication of intracranial haemorrhage, possibly associated with the stranding process or possibly more chronic in nature. Bacteriology did not reveal any significant isolates. Histopathology showed a moderate to severe, acute, generalised systemic congestion. Moderate, acute to sub-acute, generalised hepatic fatty change. Mild to moderate, per-acute, multifocal myocardial necrosis. The hepatic findings support the lack of feeding and the rest of the lesions seen histologically are probably a result of the live-stranding process rather than the cause of it. We were unable to determine the cause of the live stranding despite the tissues being well preserved.



Figure 36: M572/16 Pygmy sperm whale (*Kogia breviceps*) from Thurso.

Section 9: Spiral “corkscrew” trauma seal cases

Seventy-five seals were reported as having trauma consistent with spiral or corkscrew injuries. These cases were reported from 10 different regions. Most reports from Orkney and the Western Isles with 19 and 18 respectively. Another hot spot was Fife with 15 but this may be over represented because of the presence of SMRU. There were also reports from other areas including Highland (8), Argyll and Bute (7), Aberdeenshire (3), Angus (2) and one each for Moray, East Lothian and Edinburgh. The majority of these were grey seals (*Halichoerus grypus*) (n=61, 83.1%) the remaining 18.6% being split between harbour seals (*Phoca vitulina* n=11 (14.6%)) and those too decomposed or data deficient to be identified (n=3 (4%)). Although it is considered highly plausible that a large majority of historic “spiral or corkscrew” cases are actually due to grey seal predation, research is still ongoing by SMRU in collaboration with SMASS.

Table 6 shows the details for all pinniped cases considered to be potential spiral trauma cases. The final two columns display an adjectival description of a) how likely it is that the case matches the archetypal spiral ‘corkscrew’ lesion and b) given the recent new evidence, how likely is it that the lesions could be due to grey seal predation. Figure 38 below shows the spatial distribution of cases across Scotland.



Figure 37: M176/16 grey seal (*Halichoerus grypus*) from Forvie Nature Reserve, Aberdeenshire showing typical corkscrew/grey seal predation lesions.

Table 6: Scoring of suspected spiral trauma cases 2016

SMASS ID	Species (common)	Date found	Region	Sex	Age	Would lesions fit with the archetypal 'corkscrew'/spiralled seal pattern?	Likelihood of Grey seal Predation
M18/16	Seal (indeterminate species)	04/01/2016	Fife	U	Unknown	Unlikely	Insufficient data
M20/16	Grey seal	04/01/2016	Orkney	U	Unknown	Possible	Possible
M21/16	Grey seal	05/01/2016	Fife	U	Unknown	Possible	Possible
M22/16	Grey seal	05/01/2016	Orkney	U	Unknown	Likely	Likely
M30/16	Grey seal	09/01/2016	Fife	U	Juvenile	Unlikely	Possible
M42/16	Grey seal	14/01/2016	Angus	U	Unknown	Unlikely	Possible
M53/16	Grey seal	19/01/2016	Western Isles	U	Unknown	Possible	Possible
M55/16	Grey seal	07/01/2016	Argyll and Bute	U	Unknown	Unlikely	Possible
M68/16	Grey seal	16/01/2016	Orkney	U	Pup	Unlikely	Unlikely
M83/16	Grey seal	03/02/2016	Highland	U	Unknown	Unlikely	Possible
M89/16	Grey seal	08/02/2016	Orkney	U	Pup	Insufficient data	Insufficient data
M93/16	Grey seal	09/02/2016	Orkney	U	Unknown	Unlikely	Insufficient data
M94/16	Grey seal	09/02/2016	Orkney	U	Pup	Unlikely	Possible
M95/16	Grey seal	09/02/2016	Orkney	U	Pup	Unlikely	Possible
M120/16	Seal (indeterminate species)	12/02/2016	Highland	U	Unknown	Insufficient data	Insufficient data
M138/16	Grey seal	05/03/2016	Orkney	U	Unknown	Unlikely	Possible
M147/16	Grey seal	12/03/2016	Angus	U	Unknown	Unlikely	Possible
M160/16	Grey seal	28/03/2016	Fife	F	Juvenile	Likely	Likely
M172/16	Grey seal	11/01/2016	Fife	M	Unknown	Unlikely	Possible
M176/16	Grey seal	05/042016	Aberdeenshire	U	Juvenile	Likely	Likely
M258/16	Grey seal	08/06/2016	Fife	M	Juvenile	Likely	Likely
M259/16	Grey seal	08/06/2016	Fife	M	Juvenile	Likely	Likely

SMASS ID	Species (common)	Date found	Region	Sex	Age	Would lesions fit with the archetypal 'corkscrew'/spiralled seal pattern?	Likelihood of Grey seal Predation
M260/16	Seal (indeterminate species)	08/06/2016	Fife	U	Juvenile	Insufficient data	Insufficient data
M262/16	Harbour Seal (Common Seal)	08/06/2016	Orkney	U	Pup	Likely	Likely
M270/16	Harbour Seal (Common Seal)	10/06/2016	Fife	U	ADULT	Possible	Insufficient data
M271/16	Grey seal	10/06/2016	Fife	U	Juvenile	Possible	Insufficient data
M272/16	Grey seal	10/06/2016	Fife	U	Pup	Insufficient data	Insufficient data
M275/16	Grey seal	16/06/2016	Fife	F	Juvenile	Likely	Possible
M297/16	Harbour Seal (Common Seal)	25/06/2016	Highland	F	ADULT	Possible	Likely
M314/16	Harbour Seal (Common Seal)	11/07/2016	Argyll and Bute	U	Pup	Possible	Likely
M315/16	Harbour Seal (Common Seal)	12/07/2016	Argyll and Bute	U	Pup	Unlikely	Likely
M342/16	Harbour Seal (Common Seal)	26/07/2016	Highland	U	Unknown	Possible	Possible
M346/16	Harbour Seal (Common Seal)	29/07/2016	Western Isles	U	Unknown	Unlikely	Possible
M405/16	Grey seal	25/09/2016	Aberdeenshire	U	Unknown	Unlikely	Unlikely
M415/16	Harbour Seal (Common Seal)	04/10/2016	Fife	M	Adult	Likely	Likely
M444/16	Grey seal	26/10/2016	Edinburgh	U	Pup	Unlikely	Possible
M451/16	Grey seal	28/10/2016	Western Isles	U	Juvenile	Unlikely	Possible
M479/16	Grey seal	04/11/2016	Western Isles	U	Juvenile	Unlikely	Possible

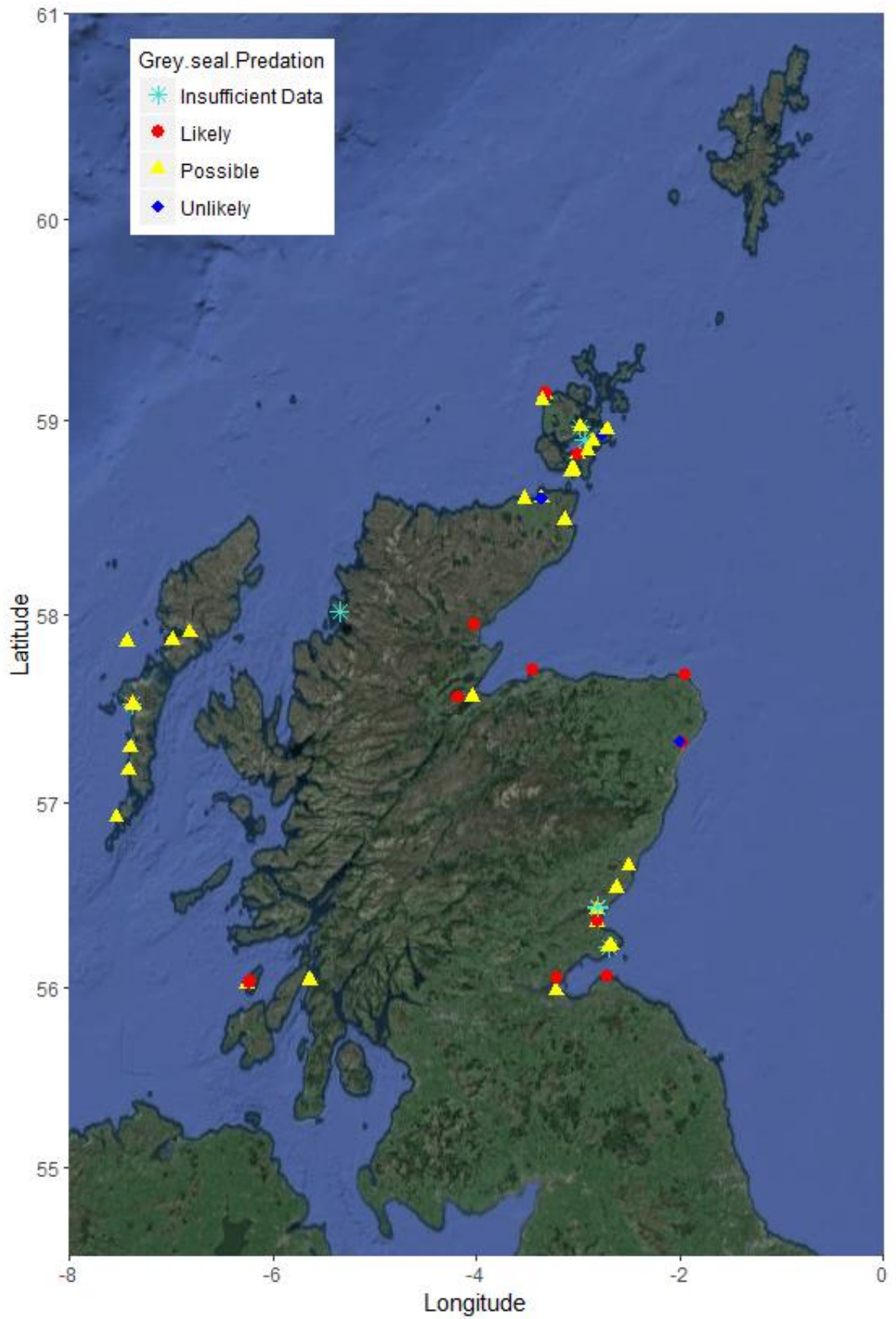


Figure 38: Distribution of seal "spiral" trauma cases in 2016

Section 10: Other single pinniped strandings

10.1 M54/16– Harbour seal (*Phoca vitulina*)

This male juvenile common seal had severe cranial trauma on the dorsal side of the skull, consistent with a blunt force trauma (or boat strike though this seems unlikely). There was asymmetric lung congestion suggestive of right lateral recumbency and a moderate to severe verminous pneumonia. Histology does not suggest that the pneumonia was severe enough to cause morbidity and make the animal susceptible to anthropogenic trauma (i.e. a person hitting it over the head with a blunt object).



Figure 39: M54/16 harbour seal (*Phoca vitulina*) from Aberdeen showing trauma to cranium.

10.1 M307/16 – Harbour seal (*Phoca vitulina*)

A male harbour seal was found at Widewell Bay, Orkney with entangled in fishing gear with an encircling neck ligature. The animal was in good nutritive condition. There was bruising around the ventral neck region and fluid (suspect sea water) in stomach. The lungs were very congested and no fractures were noted in any bones. The bruising and lung pathology are consistent with water aspiration and drowning is a likely cause of death.



Figure 40: M307/16 harbour seal (*Phoca vitulina*) showing entanglement arrow.

10.2 M317/16 – Harbour seal (*Phoca vitulina*)

This female harbour seal pup was observed appearing lethargic for two days before being found dead. It was at, or close to, weaning age with good blubber coverage. Hepatic changes suggest acute starvation and the congestion of the lungs, with diffuse haemorrhage, is likely significant. However the degree of pathology is complicated by post mortem changes. No parasitism was grossly evident and there was no evidence for solid food ingestion. Bacteriology produced a mix of organisms some of which may be post mortem invaders and opportunistic pathogens none of these are thought significant. Histopathology showed a very severe, acute to sub-acute, generalised hepatic fatty change and confirms a diagnosis of starvation.

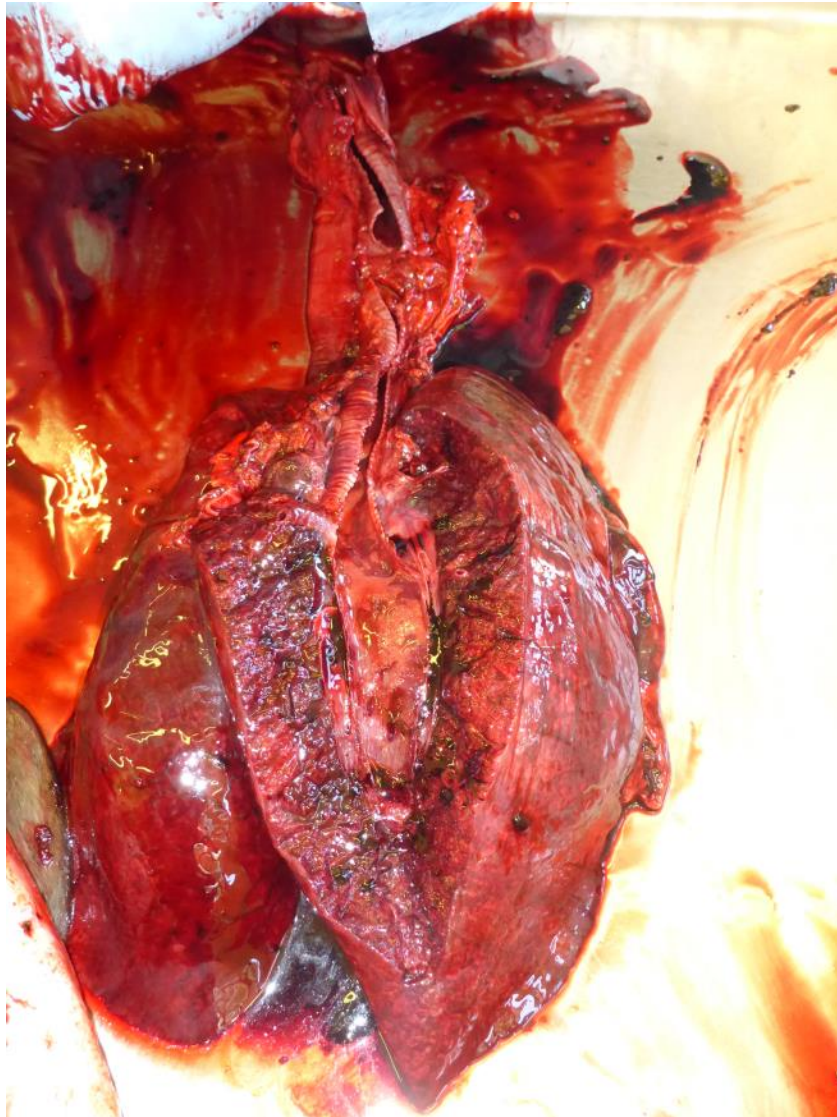


Figure 41: M317/16 harbour seal (*Phoca vitulina*) lungs showing congestion.

Section 11: Basking sharks and marine turtles

11.1 Basking sharks (*Cetorhinus maximus*)

There was a single report of a basking shark stranding in this period unusually in January. M57/15 on 23rd January floating just off shore at Skelmorlie North Ayrshire. This was a 700cm male and although not necropsied samples were taken by SMASS volunteers for on-going research into the genetics of this species by Aberdeen University.



Figure 42: M57/16 basking shark (*Cetorhinus maximus*), Skelmorlie, North Ayrshire.

11.1 M24/16 – Leatherback turtle (*Dermochelys coriacea*)

This likely immature/sub-adult male leatherback was found dead stranded on St Cyrus Nature Reserve. It was in moderate to thin condition and the carcass was reasonably fresh at the time of necropsy. There were indications of previous, chronic entanglement on the pectoral fins, but no recent rope marks and no indication of other significant trauma. The lungs were however congested, suggesting agonal water aspiration may have occurred. There were two plastic fragments in the oesophagus; a 30cm² plastic bag and a very weathered crisp packet (Walkers salt & vinegar). Neither was associated with any impaction and the rest of the gastro-intestinal tract was clear of other debris. Mucoid melena in the stomach indicates some likely feeding but probably not at a sufficient rate, given the much dilated gall bladder, lack of notable abdominal fat reserves, and general thin body condition. The brain contained a large amount of CSF and appeared to be vestigial tissue 2-3cm³ within a hydrocephalic membrane- however uncertain if this is normal or not. The significance

isolation of a *Pseudomonas* sp. from the CSF is uncertain. Histology on the brain showed a severe, generalised congestion. A single, medium sized focal area of lymphoplasmacytic infiltration within the meninges. The Histopathologist comments “any lesion in the brain of a juvenile animal has to be considered significant. I can find no obvious cause of death for this animal. However, I have little experience in the pathology of turtles but the readings I have undertaken on the common conditions have not highlighted anything here. Likely hypothermia case



Figure 43: M24/16 leatherback turtle (*Dermochelys coriacea*) from St. Cyrus nature reserve Aberdeenshire.

Section 12: Other shark species

Although the basking shark (*Cetorhinus maximus*), is the only species of shark included in the stranding scheme at present we do get reports of other sharks. Two other species were reported to the scheme during this period.

12.1 M523/16 – Blue shark (*Prionace glauca*)

The blue shark is a species of requiem shark, in the family *Carcharhinidae*, that inhabits deep waters in the world's temperate and tropical oceans, preferring cooler waters. They migrate long distances. The species is listed as Near Threatened by the IUCN. They are viviparous and are noted for large litters of 25 to over 100 pups. They feed primarily on small fish and squid, although they can take larger prey. Maximum lifespan is still unknown, but it is believed that they can live up to 20 years.

This juvenile female blue shark was found dead stranded on Tentsmuir beach in Fife. There was digesta present in the stomach. There was no significant pathology observed, although autolysis (likely due to the freeze-thaw processes) may have hampered diagnosis. No direct evidence for- or lesions associated with bycatch/entanglement were seen, yet given its

location and evidence for recent feeding this animal was likely incidentally caught and discarded. Samples for genetics and toxicology were collected and the remainder of the carcass was collected for the Natural Museum of Scotland.



Figure 44: M523/16 Blue shark (*Prionace glauca*) from Tentsmuir beach, Fife.

12.2 M523/16 – Porbeagle shark (*Lamna nasus*)

The porbeagle shark is a species of mackerel shark in the family *Lamnidae*, distributed widely in the cold and temperate marine waters of the North Atlantic and Southern Hemisphere. They are opportunistic hunters and prey mainly on bony fishes and cephalopods throughout the water column. They perform long-distance seasonal migrations, generally shifting between shallower and deeper water. They are fast and highly active, with physiological adaptations that enable them to maintain a higher body temperature than the surrounding water. They are aplacental viviparous with oophagy, developing embryos being retained within the mother's uterus and subsisting on non-viable eggs. Females typically bear four pups every year. Direct commercial fishing for the species, principally by Norwegian long-liners, led to stock collapses in the eastern North Atlantic in the 1950s, and the western North Atlantic in the 1960s. They continue to be caught throughout its range, both intentionally and as bycatch, with varying degrees of monitoring and management. The International Union for Conservation of Nature (IUCN) has assessed them as Vulnerable worldwide, and as either Endangered or Critically Endangered in different parts of its northern range.

We had a single report of the this species a female on the 24th of December at Reiss beach Caithness it was not recovered for necropsy. It was thought to be a discard from a fishing vessel.



Figure 45: M635/16 Porbeagle shark (*Lamna nasus*) from Reiss beach, Caithness.

Section 13: Bacteriology

13.1 *Brucella* sp.

Brucella ceti was isolated from seven cases during this period. Three times from harbour porpoise; from the spleen of one and from the lung, spleen and pulmonary associated lymph node of another and from the uterus and cervix of another. None of the isolates are thought to be significant. *B. ceti* was also isolated from the cerebral spinal fluid (CSF) brain and lung of a common dolphin, however this was thought to be incidental in this case as no lesions suggestive of neurobrucellosis we seen on histology.

The same organism was also recovered from the spleen and CSF of an Atlantic white-sided dolphin and CSF and parasitic cyst of a striped dolphin the former possibly arthritis case and the latter thought to be possible meningoencephalitis case (see above).

B.ceti was also isolated from the hepatic mass of a Risso's dolphin (see above) we believe this is to be the first ever isolation of this organism from this species and brings the total number of cetacean species know to be infected by *Brucella* to ten.

There were no isolations of *Brucella pinnipedialis* during this period.

13.2 *Vibrio* sp.

Photobacterium damsela was isolated in mixed culture from the lung, spleen, brain, CSF and pulmonary associated lymph node of a Risso's dolphin. The significance of this however is uncertain. The same organism was isolated from the CSF of a harbour porpoise and the CSF of one striped dolphin and the lung of another.

Vibrio alginolyticus was in pure culture from the abdominal fluid and liver in mixed culture from the brain and CSF of an Atlantic white-sided dolphin. The same organism was isolated from the lung of a harbour porpoise.

A *Vibrio* sp. was in pure culture from the lung and kidney of a harbour porpoise.

13.3 Pasteurellaceae

Actinonacillus delphinicola was isolated from the lung of a harbour porpoise. The same organism was also isolated from the lung of a white-beaked dolphin and a rib fracture in a common dolphin they are both thought to be incidental findings.

A *Pasteurella* sp. was recovered in mixed from the lung, lung abscess, liver, spleen, Kidney, CSF, brain, tailstock lesion and vertebrae of a harbour porpoise which had been bitten by a seal (see above).

13.4 *Granulicatella balaenopterae*

This is a gram positive irregular rod only found in minke whales and was isolated from the lung liver and spleen of an entanglement case.

13.5 Streptococcus sp.

A β Haemolytic group C *Streptococcus* sp. was isolated from the lung, retropharyngeal lymph node cyst of one white-beaked dolphin and the lung, pulmonary associated lymph node and CSF of another. We have eight isolates like this. They are typing close to but distinct from *Streptococcus equi* but they do not type as either of the subspecies. It notable that they keep appearing from white beaked dolphins, with the only other similar isolate coming from an Atlantic white-sided dolphin.

Streptococcus phocae, an organism more often isolated from seals as its name suggests was recovered in mixed growth from the tailstock vertebrae of a harbour porpoise which had been bitten by a seal (see above). The same organism was also isolated from the lung, liver, kidney, spleen, brain, CSF and skin lesions of a common dolphin suggesting a *S. phocae* sepsis. It was also isolated from the lung, liver, spleen, kidney, brain, CSF, prescapular LN, tongue, head/eye abscess and pectoral fin bite wound of a harbour porpoise. Suggesting sepsis due a seal bite (see section 6 above).

An α haem. Streptococcus sp. with a profile not seen before was isolated from the lung CSF and uterus of a harbour porpoise this isolate was not thought significant.

A group D *Streptococcus* sp. was isolated from the lung of a striped dolphin this was not thought to be significant.

Streptococcus halichoeri which as its name suggests was originally isolated from grey seals was found in the infected head/eye abscess and possibly prescapular ln, pectoral fin lesion and lung and kidney of a harbour porpoise. Suggesting sepsis due a grey seal bite (see section 6 above).

13.1 Staphylococcus sp.

A Haemolytic *Staphylococcus* was isolated from the lung, subcutaneous lesion the CSF of a harbour porpoise suggesting a metastatic spread.

13.2 Clostridium sordellii

An anaerobic organism most often associated with gynaecologic infections in women and infection of the umbilical stump in new-borns in humans and gas gangrene in animals was isolated from lung lesion and intestine of a harbour porpoise.

13.1 Arcanobacterium phocae

Arcanobacterium phocae, a Coryneform whose major habitat is pinnipeds, was recovered from a single harbour seal. The same organism was also recovered in mixed from the lung, lung abscess, liver, spleen, Kidney, CSF, brain, tailstock lesion and vertebrae of a harbour porpoise. It was also recovered in lung, tongue, eye/head abscess and pectoral fin bite wound of another harbour porpoise. Suggesting they had been bitten by a seal (see above section 6).

13.2 *Actinomyces marimammalium*

Actinomyces marimammalium, an organism that has been isolated from hooded and grey seals and harbour porpoise recovered in mixed from the lung, lung abscess, liver, CSF, tailstock lesion and vertebrae of a harbour porpoise. The same organism was found in lung, spleen, brain, CSF, prescapular LN and pectoral fin bite wound of another harbour porpoise. Suggesting they had been bitten by a seal (see above section 6).

13.3 *Campylobacter* sp.

A *Campylobacter*-like sp. was isolated from the uterus of a harbour porpoise, the significance of and the identity of this isolate is uncertain.

13.4 *Mycoplasma* sp.

A *Mycoplasma* sp. was recovered from in mixed culture from the lung of a Risso's dolphin the significance of this isolate is at present uncertain.

A *Mycoplasma* sp. was recovered from in mixed culture from the lung of a harbour porpoise the significance of this isolate is at present uncertain.

Mycoplasma phocicerebrale was recovered from in mixed culture from the lung of a harbour seal the significance of this isolate is at present uncertain. The same organism was isolated in mixed culture with isolates normally associated with seals was recovered from the tongue, head abscess, prescapular lymph node, brain and pectoral fin bite wound of a harbour porpoise, indicating an infection similar to seal finger in humans (see above section 6).

Section 14: Volunteer training courses

Scotland has over 10,000 miles of coastline, including over 800 islands; an enormous area to cover for the SMASS team alone. As part of ongoing review of surveillance methods and a specific workshop held in November 2012, SMASS were asked to address specific questions about improving the data collected from animals not suitable for collection and necropsy. An initiative was developed to recruit and train collaborators and members of the public in the safe, reliable and accurate measurement and sampling of dead stranded marine animals. This outlines techniques used for encouraging the public to report strandings and assesses how effective this approach has been to add data and samples to the scheme. Coined by one volunteer as a way of training "Whale Detectives", the programme has proved invaluable to SMASS in both providing rapid and reliable information and images about strandings and in many cases measurement and samples from cases too autolysed, or remote, to enable a necropsy.

14.1 Introduction

A significant increase in strandings surveillance and data recovery could be achieved by improving public awareness of, and engagement with the Scottish Marine Animal Strandings Scheme (SMASS). The purpose of the network is therefore to enable better data and in some case samples to be taken from animals not suitable for collection and necropsy. The

most efficient and effective option for this and extend the reach of the strandings scheme to all parts of Scotland was to utilise volunteers trained by SMASS to accurately identify species, photograph, collect data and samples from such cases.

14.2 Training courses

14.2.1 *Course aims and objectives*

Volunteers were invited to apply for training courses, via our website, social media or word of mouth. Courses were often oversubscribed, but if selected, candidates were invited to attend a training course, where they were given important safety information, had an opportunity to take samples from a stranding case and watched a complete diagnostic cetacean necropsy. If, having seen what was involved, they still wished to help and were deemed competent; they were issued with a sampling kit and became one of our team. When a stranding is reported in their area, we send out an available volunteer to collect the necessary measurements and/or samples.

The purpose of the training day is to demonstrate how to safely and accurately collect information and samples from stranded marine animals. This involves a cetacean necropsy which is used to demonstrate what samples to take and show how we conduct a full necropsy examination. There is no expectation for the volunteers to attempt examinations at this level of detail but we hope to show how even basic sampling and data collection can be of great benefit to the scheme.

The day has a set of modules and usually run in this order;

- Arrival and HSE brief.
- 45-50 minute talk on the stranding scheme and what is expected of those who sign up as a “SMASS Stranding Volunteer”
- Post mortem examination demonstration and sampling techniques.
- Hand out certificates and tags provision of sampling kits.

Health and safety documentation is supplied to the attendees via email beforehand and they are expected to have read and understood them all before attending the course. They sign a document to confirm this prior to entering the post-mortem room or observing the necropsy. During the necropsy demonstration each potential volunteer will be given the opportunity to take samples and measurements from the animal as they would do when asked to attend a stranding on the beach. Each potential volunteer is assessed on their abilities and only if deemed competent will a stranding kit be issued. These kits cost around £24-26 each in materials and are designed to be small enough to be easily carried and stored in the volunteer’s car. With the exception of the gloves, bio bottle and cut resistant gloves, most components are sourced from supermarkets or basic hardware stores.

14.2.2 *Courses run 2016*

Four courses were run in 2016 targeting Skye, Wester Ross, the Western Isles, Mull and Shetland.

1. 7th of April SMASS ran a volunteer training course and necropsy demonstration at Inverness to Train Volunteers from Skye, Wester Ross and the Western Isles.

2. 25th of July Andrew Brownlow ran a volunteer training course and necropsy demonstration at the Hebridean Whale and Dolphin Trust (HWDT) to train members of staff to become volunteers.
3. On the 21st and 22nd of August Andrew Brownlow and Nick Davison ran two volunteer training course and necropsy demonstrations at Hillswick Wildlife Sanctuary, Hillswick, Shetland to Train Volunteers from Shetland.



Figure 46: Volunteer training course and necropsy demonstration for Skye, Wester Ross and Western Isles

Since beginning this initiative in 2014, we now have 141 people trained, of which 140 were considered competent to be issued with a kit and wished to be a volunteer a single volunteer declined to sample.



Figure 47: HWDT volunteer training day Mull.



Figure 48: Volunteer training 21st August Hillswick Wildlife Sanctuary, Hillswick, Shetland.

14.3 Make up of volunteers

Volunteers come from quite a wide range of backgrounds however 70% have some affiliation to NGO's, statutory body or education institutions. Figure 50 shows the volunteer affiliations that include two or more people, figure 49.

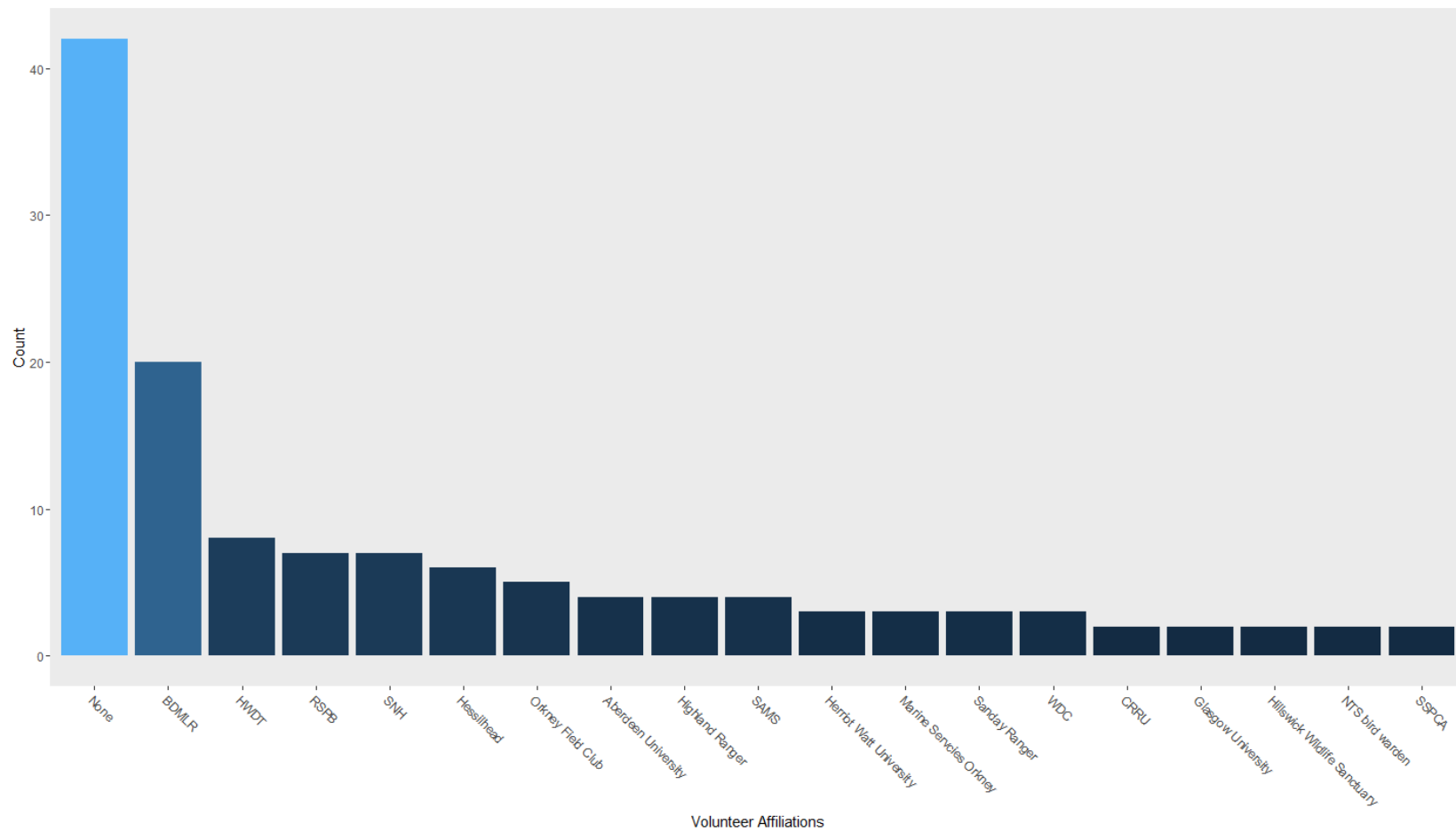


Figure 49: Volunteer affiliations (only showing affiliations including two or more people)

14.4 Engagement with scheme since training.

Since attending a course 84 different volunteers (59.5%) have been asked to attend a stranding. Of those 71 (84.5%) were able to go and of those, 39 (54.9%) actually sampled an animal. Fifty-seven (40.4%) volunteers have yet to be asked to attend a stranding, largely due to no cases being reported in their area of coverage. Five of these volunteers have been previously to a stranding before becoming a volunteer and one volunteer has previously taken samples.

14.5 Number of sampling visits by year

In 2016 there were 43 sampling visits by trained volunteers with nine volunteers sampling at least two animals and one volunteer sampling five animals. A further 19 sampling one animal only. There were six animals sampled by untrained volunteers. Two animals sampled by volunteers subsequently came in for necropsy. Two animals were sampled by SMASS staff.

These samples were from nine species of cetacean two of species of seal and a single basking shark.

14.6 Issues with health and safety

Involving members of the public in tissue sampling of wild animals presents a number of potential health and safety risks. The importance of strict adherence to H&S protocols is made paramount in the lecture, demonstration and support documentation. To date there has been only one incident with a volunteer inflicting a minor cut to their finger. They weren't wearing the cut resistant glove issued and was before there was any contact with the animal. Nevertheless in view of this the volunteer was told to monitor the cut at go to the GP any symptoms of infection occurred. They didn't and the cut healed normally.

14.7 Volunteer engagement post training

Engaging volunteers to attend a case has been relatively straightforward; a private group on Facebook is the usual way of contact followed up by email and text messages. A small minority of volunteers have proved difficult to contact post training either due to a reluctance to be on social media or moving and not informing the scheme. Only one volunteer has had no contact with the scheme since their training day. It has become apparent that the most enthusiastic volunteers are those that already volunteer with other organisations such as BDMLR. Those less likely to attend a stranding are those in higher education. Volunteers from WDC, HWDT and the countryside ranger service have also been very willing to attend a stranding.

14.8 Help with carcase collection

Several volunteers have helped with the collection of carcasses for necropsy, mostly in Orkney where we have courier boxes stored at Northwards Transport in Kirkwall for onward

transport to Inverness. A similar service runs from Lerwick, Shetland supported by the volunteer network up there. One volunteer transported of a common seal to Hesselhead Wildlife Rescue Trust for freezer storage pending collection

In addition to the volunteer network, we are particularly grateful to continued collaborative help from SMRU whose students and staff have examined, collected carcasses and frozen carcasses for later collection.

14.9 Volunteer coverage

By the end of January 2017 SMASS has a total of 141 trained stranding volunteers with at least one volunteer on North, East and West coasts. There are two volunteers and Eigg and Tiree. There are also seven volunteers on Mull (all but two HWDT staff). A number of SAMS students and staff have also been trained providing coverage in the Oban and Argyll areas. We have good coverage in the Forth of the Firth area and around the Aberdeenshire and Tayside coasts this is complimented by staff from SMRU. We have a trained volunteer on Kintyre who has proved invaluable to us by attending and sampling strandings along the entire Kintyre peninsula. There are now 25 on Shetland 22 trained volunteers on Orkney and 16 volunteers able to cover the Caithness and Sutherland.

We now have a volunteer on St. Kilda in the summer months; this volunteer can cover Benbecula during the winter. We also now have five volunteers on Skye and one near Lochalsh.



Figure 50: Distribution of stranding volunteers

We addressed the lack of cover in Skye by running a course specifically for that area in April 2016. There are other gaps notably the Western Isles again we hope to attract suitable volunteers from these areas in 2016. However the logistics of either getting us a suitable location to train people or getting people to Inverness to train them here is still proving difficult. Dumfries and Galloway is also lacking any volunteers and despite efforts we have yet to attract anyone however, we are discussing this with the local BDMLR group. Although not obvious from the map the course run at Hessilhead Wildlife Rescue Trust in 2015 means we have good coverage of North and South Ayrshire. We also hope to add coverage to Angus and south Aberdeenshire and the north coast of Aberdeenshire.

14.10 Untrained samplers

We have at present 5 people who have historically taken samples for the scheme. None of these have attended a training course; this is due to their remote locations. We hope at

some point to address this and at some point formally train them. We have partially addressed this by providing them with a Bio bottle, field sampling guide (report form), prepaid postage labels and reference guides for sampling and posting. Nevertheless their remote locations provide us with data and samples from animals we would otherwise get very little from. We have one on Islay, two in South Uist, one on Benbecula and one on Orkney.

14.11 Future work

There are still some gaps in our coverage. Notably the Western Isles in particular Lewis and Harris, the Dumfries and Galloway coastline, but also a lot of the smaller islands including Arran, Coll, Islay and Jura. We have little way to go if we are to achieve complete coverage, if this is ever possible. We also need to assess the usefulness of the network; at the moment there is a definite net benefit to SMASS where we receive a higher quality of data collection, in addition to more general engagement of the public in marine ecology and citizen science. A next step will be to assess if the samples are being utilised by ourselves and our collaborators to justify this component of the programme.

Section 15: Necropsy demonstrations and outreach

In addition to the volunteer training courses, SMASS have run a number of necropsy demonstrations to veterinary and marine science students from several higher education institutions. Talks were also given to NGO and local interest groups on request.

- 21/01/16 Necropsy demonstration annual SMM UK & Ireland regional chapter student conference at SMRU
- 30/01/16 Necropsy demonstration for the annual meeting of the Northern Veterinary Student Zoological symposium at Glasgow Vet School.
- 17/2/16 Necropsy demonstration for Aberdeen University Masters students at Inverness.
- 09/03/16 Necropsy demonstration for SAC Countryside management students at Inverness.
- Andrew Brownlow attended the Royal Highland Show at Edinburgh on the 24th June to help the Scottish Marine Animal Stranding Scheme.
- Andrew Brownlow gave a talk on the work of SMASS at the North West Highlands Cetacean Week organised by the Scottish Wildlife trust at Ullapool Ferry Terminal on the 14th of September, Mariel ten Doeschate also attended
- 16th November Andrew gave a talk to the Scottish beach managers forum, at the Keep Scotland Beautiful event at Burntisland, Fife
<http://www.keepsotlandbeautiful.org/>
- Andrew gave a talk on the Scheme to the Wildlife information centre Falkirk on the 26th of November. <http://www.wildlifeinformation.co.uk/>
- Andrew gave a talk on the Scheme to a marine life stranding awareness day for Police Scotland hosted by SMRU.



Figure 51: Necropsy demonstration for annual SMM UK AND Ireland regional chapter student conference at SMRU.



Figure 52: Necropsy Demonstration for Aberdeen University Masters students at Inverness



Figure 53: Necropsy Demonstration for SAC Countryside management students at Inverness.

Section 16: Outputs

16.1 Overview

In 2016, staff at the Scottish Marine Animal Strandings Scheme generated a total of eight peer reviewed papers, three conference presentations, and two conference posters.

16.2 Publications

- **Nicholas J. Davison, Mariel T. I. ten Doeschate, Mark P. Dagleish, Fiona L. Read, Robert J. Reid, Geoffrey Foster, Andrew Brownlow and Jason Barley.** (2016) Twin fetuses in an Atlantic white-sided dolphin (*Lagenorhynchus acutus*) stranded on the coast of Scotland, UK. *Journal of the Marine Biological Association of the United Kingdom* doi:10.1017/S0025315415002246
- Johanna L. Baily, **Geoffrey Foster**, Derek Brown, **Nicholas J. Davison**, John E Coia, Eleanor Watson, Romain Pizzi, Kim Willoughby, Ailsa J. Hall and Mark P. Dagleish (2016) Salmonella infection in grey seals (*Halichoerus grypus*), a marine mammal sentinel species: Pathogenicity and molecular typing of Salmonella strains compared with human and livestock isolates. *Environmental Microbiology* DOI: 10.1111/1462-2920.13219

- Paul D. Jepson, Rob Deaville, Jonathan L. Barber, Àlex Aguilar, Asunción Borrell, Sinéad Murphy, Jon Barry, **Andrew Brownlow**, James Barnett, Simon Berrow, Andrew A. Cunningham, **Nicholas J. Davison**, **Mariel ten Doeschate**, Ruth Esteban, Marisa Ferreira, Andrew D. Foote, Tilen Genov, Joan Giménez, Jan Loveridge, Ángela Llavona, Vidal Martin, David L. Maxwell, Alexandra Papachlimitzou, Rod Penrose, Matthew W. Perkins, Brian Smith, Renaud de Stephanis, Nick Tregenza, Philippe Verborgh, Antonio Fernandez & Robin J. Law. (2016) PCB pollution continues to impact populations of orcas and other dolphins in European waters. *Nature Scientific Reports* 6:18573 DOI: 10.1038/srep18573 Published 14 January 2016
- Zuzana Gajdosechova, **Andrew Brownlow**, Nicolas T. Cottin, Mariana Fernandes, Fiona L. Read, Dagmar S. Urgast, Andrea Raab, Jörg Feldmann, Eva M. Krupp. (2016) Possible link between Hg and Cd accumulation in the brain of long-finned pilot whales (*Globicephala melas*). *Science of The Total Environment* Volumes 545–546, Pages 407–413. Published 1 March 2016:
- **Andrew Brownlow**, Joseph Onoufriou, Amanda Bishop, **Nicholas Davison**, Dave Thompson (2016) Corkscrew Seals: Grey Seal (*Halichoerus grypus*) Infanticide and Cannibalism May Indicate the Cause of Spiral Lacerations in Seals. *PLoS ONE* 11(6): e0156464. doi:10.1371/journal.pone.0156464
- Sílvia S. Monteiro , José V. Vingada , Alfredo López , Graham J. Pierce , Marisa Ferreira , **Andrew Brownlow**, Bjarni Mikkelsen, Misty Niemeyer, Robert J. Deaville, Catarina Eira, Stuart Piertney (2016). Major Histocompatibility Complex (MHC) class II sequence polymorphism in long-finned pilot whale (*Globicephala melas*) from the North Atlantic. *Marine Biology Research* doi: 10.1080/17451000.2016.1174266
- Zuzana Gajdosechova, Mohammed M. Lawan, Dagmar S. Urgast, Andrea Raab, Kirk G. Scheckel, Enzo Lombi, Peter M. Kopittke, Katrin Loeschner, Erik H. Larsen, Glenn Woods, **Andrew Brownlow**, Fiona L. Read, Jörg Feldmann & Eva M. Krupp (2016) In vivo formation of natural HgSe nanoparticles in the liver and brain of pilot whales. *Nature Scientific Reports* 6, 34361; doi: 10.1038/srep34361
- Norbert van de Veldea, Brecht Devleeschauwer, Mardik Leopoldd, Lineke Begeman, Lonneke Ijseldijk, Sjoukje Hiemstra, Jooske IJzer, Andrew Brownlow, Nicholas Davison, Jan Haelters, Thierry Jauniaux, Ursula Siebert, Pierre Dorny, Stéphane De Craeye (2016) *Toxoplasma gondii* in stranded marine mammals from the North Sea and Eastern Atlantic Ocean: Findings and diagnostic difficulties. *Veterinary Parasitology* 230 25–32

16.3 Publications (in press)

- **Nicholas J. Davison**, Lorraine L. Perrett, Claire Dawson, Mark P. Dagleish, Gary Haskins, Jakub Muchowski, Adrian M. Whatmore. *Brucella ceti* infection in a

common minke whale (*Balaenoptera acutorostrata*) with associated pathology.
Journal of Wildlife Diseases

16.4 Conference Presentations

- “CSI of the sea - investigating UK strandings over the last 25 years”. Robert Deaville, **Andrew Brownlow**, James Barnett, **Nicholas Davison**, Robin Law, Rebecca Lyal, Ruth Williams, Rod Penrose, Matthew Perkins, Brian Smith, **Mariel ten Doeschate**, Paul Jepson. Presentation: European Cetacean Society Annual Conference in Funchal, Madeira, Portugal 14th March 2016
- Reconstructing the post-glacial colonization of the northern extreme of the range of a top marine predator, the bottlenose dolphin. Milaja Nykanen, Marie Louis, Kristin Kaschner, Simon Ingram, Valentina Islas, Post Klaas, Henry Van Der Es, Nathan Wales, **Andrew Brownlow**, Rob Deaville, Emer Rogan, Andrew Foote. Presentation: European Cetacean Society Annual Conference in Funchal, Madeira, Portugal 14th March 2016
- Ecological insights from long-term trends in cetacean stomach contents. Graham Pierce, M. Begoña Santos, Okka Jansen, **Andrew Brownlow**, Alfredo López, Emer Rogan, Gema Hernandez-Milian, Fiona Read, Ruth Fernandez, Camilo Saavedra, Mardik Leopold. Presentation: European Cetacean Society Annual Conference in Funchal, Madeira, Portugal 15th March 2016.

16.5 Conference Posters

- *The first report of the isolation of *Brucella ceti* associated meningoencephalitis in a Sowerby's beaked whale (*Mesoplodon bidens*).* **Nicholas J. Davison, Andrew Brownlow**, Mark P. Dagleish. Lorraine L. Perrett, Claire Dawson, Sarah J. Dolman, Nicola Hodgins. Poster presentation: European Cetacean Society Annual Conference in Funchal, Madeira, Portugal 14th-16th March 2016
- *Size matters: Assessing the ecological variability in strandings data at a relevant spatial scale.* **Mariel ten Doeschate, Andrew Brownlow, Nicholas Davison**, Rob Deaville, Paul Jepson, Matthew Perkins, Lonneke Ijsseldijk. Poster presentation: European Cetacean Society Annual Conference in Funchal, Madeira, Portugal 14th-16th March 2016

16.6 Media

The stranding of Lulu, one of the few remaining members of the west coast community of killer whales attracted a lot of media attention.

<https://www.pressandjournal.co.uk/fp/news/scotland/796330/killer-whale-washes-dead-scottish-beach/>

<https://www.pressandjournal.co.uk/fp/news/islands/798663/killer-whale-found-dead-on-scottish-beach-was-killed-by-fishing-gear/>

<http://www.dailymail.co.uk/news/article-3391416/Death-Lulu-one-killer-whales-British-waters-point-no-return.html>

<http://www.express.co.uk/news/nature/632002/beautiful-creature-Dead-Killer-Whale-beach-Britain>

<http://www.bbc.co.uk/news/uk-scotland-glasgow-west-35244417>

<http://www.itv.com/news/2016-01-06/killer-whale-lulu-found-dead-off-scottish-island-sparking-fears-for-orca-future/>

<http://www.earthtouchnews.com/oceans/whales-and-dolphins/scotlands-unique-orca-lulu-found-dead-on-local-beach>

<http://www.scotsman.com/regions/inverness-highlands-islands/killer-whale-from-scotland-s-only-native-pod-found-dead-on-beach-1-3992397>

<http://www.independent.co.uk/environment/nature/lulu-whale-s-death-may-mean-the-end-for-britains-orcas-a6803011.html>

<http://www.ibtimes.co.uk/uk-population-killer-whales-could-become-extinct-lulu-dies-after-becoming-entangled-1536984>

<http://www.scotlandnow.dailyrecord.co.uk/news/killer-whale-lulu-found-dead-7132106>

<http://www.natureworldnews.com/articles/19223/20160107/orca-whale-rare-group-scotland-found-dead.htm>

<http://www.countryfile.com/explore-countryside/wildlife/extinction-fears-grow-killer-whale-found-dead-tiree>

<http://stv.tv/news/highlands-islands/1338262-killer-whale-drowned-after-becoming-tangled-in-fishing-gear/>

<https://whalesandmarinefauna.wordpress.com/2016/01/04/fears-for-orca-population-after-killer-whale-found-dead-on-tiree-scotland-uk/>

http://whaledolphintrust.co.uk/news_article.asp?news_id=466

<http://awesomeocean.com/2016/01/06/scottish-killer-whale-found-dead/>

<http://thirdforcenews.org.uk/tfn-news/dead-orca-is-one-of-scotlands-last-says-charity>

<http://ecowatch.com/2016/01/07/lulu-found-dead/>

<http://www.heraldscotland.com/news/homenews/14186383.display/>

<https://www.eveningexpress.co.uk/pipe/news/scotland/fears-for-killer-whale-pod-after-female-found-dead-on-tiree/>

<http://www.north-star-news.co.uk/News/Orca-whale-Lulu-drowned-by-fishing-gear-08012016.htm>

<http://www.hebrides-news.com/orca-survival-fears-4115.html>

<http://www.hebrides-news.com/killer-whale-10116.html>

<http://hebridestoday.com/2016/01/stranded-scottish-orca-identified-as-lulu/>

<http://forargyll.com/?p=103935>

SMASS helped out the Dutch stranding scheme during a sperm whale MSE on Texel, Netherlands involving five animals.

<http://www.dutchnews.nl/news/archives/2016/01/beached-sperm-whales-die-on-dutch-island-overnight/>

The publication of a paper by the CSIP and involving SMASS entitled “PCB pollution continues to impact populations of killer whales and other dolphins in European waters”. In Nature Scientific Reports also attracted media coverage.

<http://www.bbc.co.uk/news/science-environment-35302957>

<http://www.telegraph.co.uk/news/science/12100161/British-whales-at-threat-of-extinction-because-of-banned-toxic-chemicals.html>

<http://www.theguardian.com/environment/2016/jan/14/uks-last-resident-killer-whales-doomed-to-extinction>

<https://www.sciencenews.org/article/pcb-levels-still-high-europes-killer-whales-smaller-dolphins>

<http://phys.org/news/2016-01-chemicals-threaten-europe-killer-whales.html>

<http://ecowatch.com/2016/01/17/whales-dolphins-pcb/>

<http://sciencenordic.com/why-are-banned-chemicals-still-killing-killer-whales>

<http://www.enn.com/pollution/article/49313>

<http://news.discovery.com/animals/whales-dolphins/europes-orca-pods-under-threat-from-banned-chemicals-160114.htm>

A live stranded striped dolphin at Lossiemouth on the Moray coast also made the local newspaper.

<https://www.pressandjournal.co.uk/fp/news/816003/dolphin-rescue-drama-ends-in-misery/>

SMASS made it into Science! Well not quite; the ‘corkscrew’ seal issue was covered by a news blog from Science for Students.

<https://student.societyforscience.org/article/seals-catching-%E2%80%98corkscrew%E2%80%99-killer>

The publication of Jo Bailys paper “Salmonella infection in grey seals (*Halichoerus grypus*), a marine mammal sentinel species: pathogenicity and molecular typing of Salmonella strains compared with human and livestock isolates” also generated media attention.

http://www.heraldscotland.com/news/homenews/14245510.Seal_pups_found_with_Salmonella_bacteria/

<https://www.pressandjournal.co.uk/fp/news/822100/pollution-concerns-voiced-as-salmonella-found-in-scottish-grey-seal-pups/>

<http://mrcvs.co.uk/en/news/14136/Salmonella-in-seals-raises-environmental-concerns>

The publication of Zuzana Gajdosechova’s paper “Possible link between Hg and Cd accumulation in the brain of long-finned pilot whales (*Globicephala melas*)” generated significant media interest, coming close to the news release by IOZ of the PCB paper (see above)

<http://www.bbc.co.uk/news/uk-scotland-edinburgh-east-fife-35550927>

<http://www.theguardian.com/environment/2016/feb/11/toxic-chemicals-found-in-beached-pilot-whales-in-soctland>

http://www.theecologist.org/News/news_round_up/2987145/heavy_metal_poisoning_in_scotlands_beached_whales.html

<http://baleinesendirect.org/en/accumulation-of-heavy-metals-in-a-group-of-stranded-long-finned-pilot-whales-in-scotland/>

<http://www.thenational.scot/news/whales-stranded-on-scottish-beaches-had-high-levels-of-toxic-metals.13625>

The grey seal infanticide and cannibalism cases in Scotland made it into the New Scientist.

https://www.newscientist.com/article/2077441-first-video-footage-of-seal-drowning-and-eating-a-pup/?utm_source=NSNS&utm_medium=SOC&utm_campaign=hoot&cmpid=SOC%7CNSNS%7C2016-GLOBAL-hoot

A case of entanglement involving a humpback whale on the island of Barra also generated some media interest.

<http://www.bbc.co.uk/news/uk-scotland-highlands-islands-35707248>

<https://www.pressandjournal.co.uk/fp/news/islands/inner-hebrides/850402/humpback-whale-painfully-killed-off-scottish-coast-fishing-ropes/>

<http://www.hebrides-news.com/humpback-whale-2316.html>

A Risso’s dolphin that originally live stranded on the Beaully Firth on the 9th of January, washed up dead several weeks later at Munloch on the Moray Firth was reported by the local press.

<https://www.pressandjournal.co.uk/fp/news/inverness/841828/rare-dolphin-washed-up-in-highlands-weeks-after-rescue/>

The humpback whale that was found entangled in creel lines of Helmsdale last year features along with a very brief appearance of Andrew and even briefer glimpses of Nick and Rob in Big Waves Britain's Whales on ITV /STV that aired on 25th March at 8pm.

<http://www.itv.com/presscentre/ep1week12/britains-whales>

"Spartle" one of the Moray Firth bottlenose dolphin population was found live stranded on the mud flats at Nigg Bay on 30th May 2016. Andrew was the only vet available to assess the animal and he elected to refloat the dolphin on the next incoming tide. By that time she had spent around 24 hours out of the water, most of that period in strong sun. Despite evidence of severe muscle cramp and skin blistering, she eventually swam off strongly. She was later spotted in July, exhibiting normal behaviour but with severe skin defect on her right flank where the blistered skin had sloughed off. She was however behaving reasonably normally and seems to be recovering well. This story, and her subsequent resighting, produced quite a bit of media attention.



Figure 54: M247/16 "Spartle" 4 year old female bottlenose dolphin (*Tursiops truncatus*) Cromarty Firth Highland.

<http://www.express.co.uk/news/nature/675842/bottlenose-dolphin-saved-good-samaritans-nigg-rossshire-nature>

<http://www.dailymail.co.uk/news/article-3620214/Bottlenose-dolphin-stranded-sand-retreating-tide-saved-volunteers-incredible-overnight-rescue-effort.html>

http://www.huffingtonpost.co.uk/entry/stranded-dolphin-rescued-after-womans-sat-nav-messed-up-and-led-her-to-it-in-scotland_uk_574ead08e4b0089281b4ead0

<http://www.thetimes.co.uk/article/lost-driver-rescues-stranded-dolphin-hqfghlgvr>

<http://metro.co.uk/2016/06/01/stranded-dolphin-wrapped-in-damp-blankets-by-caring-volunteers-5917720/>

<http://www.deadlinenews.co.uk/2016/06/01/dolphin-rescued-certain-death-thanks-satnav-blunder/>

<http://www.forres-gazette.co.uk/News/Findhorn-crew-help-save-stranded-dolphin-13062016.htm>

<http://ever4online.com/2016/06/01/bottlenose-dolphin-stranded-on-sand-by-retreating-tide-is-saved-by-volunteers-incredible-overnight-rescue-effort/>

<http://www.inverness-courier.co.uk/News/Tide-turns-in-favour-of-beached-Moray-Firth-dolphin-02062016.htm>

<http://www.newstoday.co.uk/2016/06/touching-pictures-show-dolphin-wrapped-towels-rescue/>

http://www.eveningtimes.co.uk/news/14528154.Stranded_dolphin_named_Spurtle_saved_by_couple_s_faulty_sat_nav/

A juvenile male minke whale that stranded due to entanglement next to the St Andrews golf club also attracted significant attention

<https://www.thecourier.co.uk/fp/news/local/fife/184619/st-andrews-whale-died-due-to-recent-acute-entanglement/>

<http://www.dailymail.co.uk/news/article-3623699/Scientists-perform-seaside-post-mortem-22-ft-long-dead-minke-whale-remove-LUMPS-washed-dead-Scottish-beach.html>

<http://stv.tv/news/tayside/1356142-a-dead-whale-washed-up-on-a-beach-had-its-tail-entangled/>

<http://www.dailyrecord.co.uk/news/scottish-news/dead-whale-found-washed-up-8100696#u9YhjWCGklugaiyM.97>

<http://www.fifetoday.co.uk/news/local-headlines/speculation-over-whale-death-points-to-creel-lines-1-4145396>

The continued recovery of “Spurtle” one of the Moray Firth bottlenose dolphin population was found live stranded on the mud flats at Nigg Bay continues to make the news

<http://www.bbc.co.uk/news/uk-scotland-highlands-islands-36865435>

SMASS ran two volunteer training course and necropsy demonstrations at Hillswick Wildlife Sanctuary, Hillswick, Shetland, to Train Volunteers from Shetland. This was picked by several local news outlets including BBC radio Shetland

<http://www.shetnews.co.uk/news/13193-volunteers-flock-to-help-strandings-scheme>

<https://www.facebook.com/bbcradioshetland/photos/a.165839823448801.36200.125030350863082/1261148410584598/?type=3&theater>

A Juvenile Fin whale that live stranded and died on the shore of Noss Island in Shetland also attracted some media attention.

<https://www.pressandjournal.co.uk/fp/news/islands/shetland/1029074/fin-whale-dies-stranding-shetland/>

<http://www.shetlandtimes.co.uk/2016/09/16/rare-fin-whales-found-stranded-on-noss>

<http://stv.tv/news/north/1367312-huge-whale-dies-after-stranding-at-shetland-nature-reserve/>

Three much decomposed cetacean carcasses that were washed ashore in Colonsay were mistakenly identified as a family of polar bears by a local wildlife expert.

<http://www.dailymail.co.uk/sciencetech/article-3937794/Polar-bears-did-not-wash-Scotland-Mystery-carcasses-likely-WHALES-says-marine-expert.html>

The stranding of a Sowerby’s beaked whale and a pygmy sperm whale on the north coast of Scotland within a week of each other attracted some media attention.

<http://www.johnogroat-journal.co.uk/News/Mystery-surrounds-deaths-of-whales-on-Caithness-coastline-09122016.htm>

<http://www.deadlinenews.co.uk/2016/12/02/different-species-rare-whale-washed-beach-day/>

<https://www.facebook.com/seawatchfoundation/posts/1166234130158359>

A number of porpoises that had been bitten by grey seals but escaped only to later die of infection from the bite also made the news

16.7 Conferences/meetings

- 14-16/04/16 Andrew, Nick and Mariel, attended the European Cetacean Society Annual Conference in Funchal Madeira and a workshop on pathology
- 17/03/16 Andrew, Nick and Mariel together with Lonneke Ijsseldijk of the Dutch stranding scheme organised a one day pathology workshop after the ECS to update the strandings protocol for Europe at the European Cetacean Society Annual Conference in Funchal Madeira.
- 24/03/16 Andrew and Nick attended a workshop on large whale entanglements organised by WDC and Onekind in Edinburgh.



Figure 55: Nick Davison talking to Misty Niemeyer Necropsy coordinator of IFAW's Marine Mammal Rescue Research Scheme in Cape Cod Massachusetts about *Brucella ceti* in cetaceans. ECS Madeira 14/03/16

- Andrew Brownlow gave two talks entitled “Mass strandings” and “Single strandings, public engagement and volunteer network” at the IWC technical workshop-developing practical guidance for the handling of cetacean stranding events: Skukuza Rest Camp, Kruger National Park, South Africa 3-6 May 2016
- Andrew Brownlow; Mass strandings, Presentation: 25th Anniversary of the Cetacean Strandings Investigation Programme (CSIP) at the Institute of Zoology, Regent’s Park, London 17TH May 2016.

- Andrew Brownlow; Grey seal predation, Presentation: 25th Anniversary of the Cetacean Strandings Investigation Programme (CSIP) at the Institute of Zoology, Regent's Park, London 17th May 2016.
- Mariel ten Doeschate; Entanglement, Presentation: 25th Anniversary of the Cetacean Strandings Investigation Programme (CSIP) at the Institute of Zoology, Regent's Park, London 17th May 2016.
- Nick Davison; Interspecific Aggression in Cetaceans Presentation: 25th Anniversary of the Cetacean Strandings Investigation Programme (CSIP) at the Institute of Zoology, Regent's Park, London 17th May 2016.
- Mariel ten Doeschate gave a talk on the Scottish Marine Animal Stranding Scheme (SMASS) to Bangor University undergraduates at the Aberdeen University Lighthouse Field station Cromarty on the 14th of June 2016



Figure 56: Pathology workshop II, Necropsy Protocol Working Group ECS Madeira 17/03/16

- Andrew Brownlow Nick Davison and Mariel ten Doeschate attended Special Committee on seals (SCOS) meeting at the Sea Mammal Research Unit (SMRU) St Andrews on the 13th of September.

- Andrew gave a talk at the Underwater Sound Forum at IOZ, ZSL on the 7th of November.
- Nick and Andrew attended a Seal predation meeting at SMASS with members of SMRU and Abbo van Neer of the University of Veterinary Medicine Hannover on the 14th of November.
- 18th of November Lonneke IJsseldijk, Project coordinator Cetaceans at Utrecht University started a 4 month internship with SMASS to gain more experience with different species of cetacean.
- 22nd of December Nick and Geoff took part in a Skype meeting with Jaap Wagenaar, Maarten Gilbert and Lonneke IJsseldijk from Utrecht University to discuss seal bite infections in porpoise.



Figure 57: Lonneke IJsseldijk from the Dutch stranding Scheme assisting with a common dolphin necropsy

16.8 Website and digital media

Facebook and Twitter pages were set up in October 2012. We post regular stranding reports, selected photos and requests for information on strandings on both. Feedback has generally been good and at the end of January 2016 Facebook has over 6600 likes and Twitter has 653 followers. Both still prove a valuable resource for the reporting of strandings to the scheme.

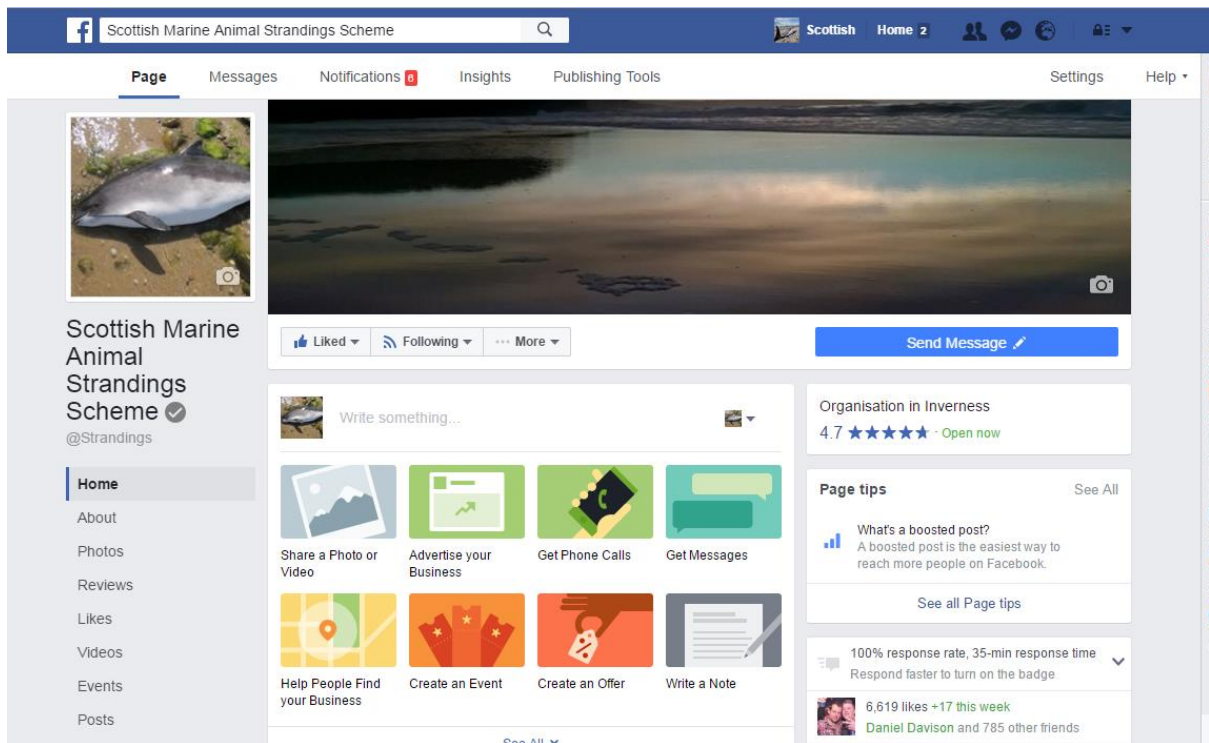


Figure 58: Facebook front page, Jan 2016.

16.9 Data and sample requests

These are either part of on-going collaborations or one off requests for data and or samples.

16.9.1 *Samples sent*

- 03/03/16 Harbour porpoise skin samples to Tom Bean at University of Aberdeen for stable isotope analysis.
- 12/05/16 Cuvier's beaked whale skin sample to Morton Olsen at University of Copenhagen for DNA analysis.
- 11/07/16 GIT's from Marine mammals for micro plastic examination, Sarah Nelms PhD student, University of Exeter and Plymouth Marine Laboratory
- 08/09/16 Stomachs and stomach contents, Natalie Ward and Fiona Coyle Aberdeen University undergraduate project.
- 27/09/16 C. boopis worms for morphological and molecular identification Miguel Grilo Research Assistant University of Veterinary Medicine Hannover, Foundation institute for Terrestrial and Aquatic Wildlife Research Büsum Germany.
- 09/11/16 C. boopis worms for morphological and molecular identification Miguel Grilo Research Assistant University of Veterinary Medicine Hannover, Foundation institute for Terrestrial and Aquatic Wildlife Research, Büsum, Germany.

16.9.2 *Data sent*

- 13/01/16 Photos of the Risso's dolphin (M25/16) from the Beaully Firth, Nicola Hodgins WDC.
- 03/02/16 Meta data on specimens sent to the NMS, Zena Timmons National Museum of Scotland
- 08/02/16 Data on striped dolphin strandings to compare with recent strandings in the Netherlands Lonneke Ijsseldijk University of Utrecht.
- 22/02/16 Data on seal strandings in Orkney for 2015 for Brian Ribbands Orkney Field Club.
- 01/03/16 Preliminary necropsy report on the leatherback turtle (M24/16) Therese Raisa SNH St. Cyrus nature reserve.
- 23/03/16 Data on Tursiops kills up to 2015 Kevin Robinson CRRU.
- 30/03/16 Data on Atlantic white-sided dolphin and white-beaked dolphin strandings Chiara Bertulli University of Iceland.
- 21/04/2016 Alethea Madgett PhD student Marine Scotland Data on blubber samples for POPS study.
- 30/06/2016 Andrew Reid Response Coordinator Marine Animal Response Society NS Museum Halifax, NS Canada Data on the Sowerby's beaked whale blubber measurements.
- 11/07/16 Sarah Nelms PhD student, University of Exeter and Plymouth Marine Laboratory: data on GIT's from Marine mammals for micro plastic examination.
- 08/09/16 Natalie Ward and Fiona Coyle Aberdeen University: data on Stomachs contents for Aberdeen undergraduate project.
- 08/09/16 Lonneke Ijsseldijk Utrecht University: data on Common Dolphins (length, sex, age class), to compare to findings in recent stranding of common dolphin male in the Netherlands.

16.10 Collaborators

- Dr Mark Dagleish Moredun Research Institute, Pentlands Science Park, Bush Loan, Penicuik, Midlothian, EH26 0PZ, Scotland. Histopathological studies on cetacean tissues from Scottish cetaceans.
- Dr Andrew Kitchener, Royal Museum of Scotland, Edinburgh, Scotland. Recording all marine mammal stranding events in Scotland. Marine mammal skulls and scapulae are sent to Dr Kitchener for marine mammal morphometric studies.
- Dr Joanna Kershaw, SMRU. Harbour porpoise and large cetacean blubber samples.
- Dr Michael Beddington, SAMS. Strandings location details for tidal drift modelling.
- Professor Ailsa Hall SMRU. Biotoxin screening for levels of domoic acid
- Dr Eva Krupp, Aberdeen University. Metal residue analysis of tissues collected at necropsy

- Dr Barbara Cheney, Aberdeen University. Bottlenose dolphin necropsy details for comparison with photo-id catalogue.
- Dr Graham Pierce, University of Aberdeen, Oceanlab, Main Street, Newburgh, Aberdeenshire, Scotland, AB41 6AA, UK Collaboration on life history, dietary and toxicological studies of harbour porpoises and other cetaceans stranded in Scotland.
- Dr Fiona Read, University of Aberdeen, Oceanlab, Main Street, Newburgh, Aberdeenshire, Scotland, AB41 6AA, UK Collaboration on life history and teeth aging cetaceans stranded in Scotland.
- Prof. Paul Thompson, University of Aberdeen, School of Biological Science, Lighthouse Field Station, George Street, Cromarty, Ross-shire IV11 8YJ. Collaboration on biological and genetic studies of harbour porpoises and bottlenose dolphins.
- Dr. Paolo Cipriani Department of Public Health and Infectious Diseases, Section of Parasitology, Sapienza - University of Rome", P.le Aldo Moro, 5, 00185 Rome – Italy Characterisation of parasites of the genus *Anasakis* from *Physeter Macrocephalus* (and other pelagic cetaceans)
- Roger Ayling, BAC5 Mycoplasma dept., Animal and Plant Health Agency, New Haw, Addlestone, Surrey, KT15 3NB. Identification of *Mycoplasma sp.* isolates from marine mammals.
- Lorraine Perrett, BAC3 Brucella Reference Laboratory, Animal and Plant Health Agency, New Haw, Addlestone, Surrey, KT15 3NB. Serological studies to assess exposure to *Brucella spp.* and typing of *Brucella* isolates.
- Dr. Maria Morell, University of British Columbia (UBC), Canada. Examination of ear bones using scanning and transmission electron microscopy for indirect quantification of hearing ability in mass stranded pilot whale.
- Erasmus Medical Centre, Rotterdam, the Netherlands – bacteriological culture of samples collected following necropsy of marine mammals.
- Scottish Salmonella Reference Laboratory – perform typing of *Salmonella* isolates
- Lesley Hoyles, Department of Food and Nutritional Sciences, University of Reading, Whiteknights, Reading – performs sequencing of bacterial isolates.
- Dr. Catherine S Jones University of Aberdeen, Skin & muscle from Basking sharks for DNA analysis.
- Milaja Nykanen, PhD Candidate School of BEES University College Cork Ireland for bottlenose dolphin mitogenome work.
- Dr Conor Ryan HWDT. Ghost gear study.
- Chiara Giulia Bertulli, PhD student, University of Iceland. Project on body colouration patterns in white-beaked dolphins and Atlantic white-sided dolphins.
- Kieran Tierney, Scottish Universities Environmental Research Centre (SUERC) & the Scottish Association for Marine Science (SAMS). Transportation and Bioaccumulation of Sellafield-derived radiocarbon (¹⁴C) in the Marine Environment: Analysing ¹⁴C in Marine Mammals.
- Eileen Harris Senior Curator Parasites & Vectors Division Department of Life Sciences Natural History Museum Cromwell Road London SW7 5BD
- Rob Harris SMRU, Analysis stomach contents seal management cases.
- Lonneke L. Ijsseldijk, BSc Project coordinator Cetaceans Faculty of Veterinary Medicine, Department of Pathobiology Utrecht University Yalelaan Utrecht The Netherlands. Bacteriology

- Rachel Ball University of Chester pilot whale samples to analyse mitochondrial DNA to determine the maternal haplotypes present in three MSEs of the Scottish coast.

Section 17: Staff and facilities

SMASS currently has three members of staff. Andrew Brownlow is the veterinary pathologist and has managed the project since 2009. Nick Davison is the stranding coordinator who joined the team in October 2012. Mariel ten Doeschate joined as a part time marine strandings administration assistant in September 2014.

Since its inception, SMASS has operated from SRUC Veterinary Services Disease Surveillance centre at Drummondhill, Inverness. It continued to do so for the whole of 2016. A replacement facility in the Inverness region, proposed in 2015, has not significantly moved forward, although it is currently expected that the existing facility will need to be vacated by June 2018.

Section 18: Acknowledgments

The successful operation of a strandings project over a coastline the length of Scotland's is only possible with assistance from a large number of individuals and organisations in the identification, recovery, storage and transport of stranded animals. We are immensely grateful to all who helped us out in 2016, however particular thanks are due to the staff and students of the Sea Mammal Research Unit, Karen Hall and the Scottish Natural Heritage team on Shetland, the National Museum of Scotland, the SSPCA, British Divers Marine Life Rescue (BDMLR) medics, Ross Flett, Jenni Kakkonen, Penny Martin of the Orkney Field club, the Hebridean Whale and Dolphin Trust, Hesselhead Wildlife Rescue Trust, Hillswick Wildlife Sanctuary and Whale and Dolphin Conservation (WDC).

We are also grateful to all our trained stranding volunteers and others who have ventured out in all weathers to collect photographs, data and samples from some fairly decomposed animals. Particular thanks to, Emma Neave-Webb & Russell Neave, Matt Barnes (MCS), Karl Hurd (BDMLR), Anna Jemmett, Sue Edwards, David Haines, Catriona MacIntyre, Barbara Cheney and Becky Hewitt of Aberdeen University Lighthouse Field Station, Conor Ryan (HWDT), Steve Jack, SORCHA Cantwell (BDMLR), Stewart Burns (BDMLR), Kat Wlodarczyk, Corinne Gordon (BDMLR), Jordan Scott, Sarah Dolman (WDC), Helen Wade, Elaine O'Reilly, Roderick Thorne, Steve Nagy on Tiree, Val Gall, Andy Knight (RSPB) on Colonsay, Ruth Molloy, Sian Bryant, Leanne Calwell, Pippa Gerrard (HWDT) Mull, Malcolm Ogilvie on Islay, Andy Law on Skye, and Ian Thompson and Bill Neil on South Uist.

Appendix 1: Strandings 2016

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M2/15	<i>Ziphius cavirostris</i>	Cuvier's beaked whale	03/01/2015	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M1/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	01/01/2016	Highland	F	Meningoencephalitis
Cetacean	M2/16	<i>Phocoena phocoena</i>	Harbour porpoise	01/01/2016	Highland	M	Live Stranding
Cetacean	M4/16	<i>Orcinus orca</i>	Killer whale	01/01/2016	Argyll and Bute	F	Physical Trauma: Entanglement
Pinniped	M73/16	<i>Halichoerus grypus</i>	Grey seal	01/01/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M13/16	<i>Halichoerus grypus</i>	Grey seal	03/01/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M14/16	<i>Balaenoptera acutorostrata</i>	Minke whale	03/01/2016	Highland	F	Not Examined: Weather/Travel Difficulties
Pinniped	M3/16	<i>Halichoerus grypus</i>	Grey seal	03/01/2016	Angus	U	Not Examined: Advanced Autolysis
Cetacean	M10/16	<i>Phocoena phocoena</i>	Harbour porpoise	04/01/2016	Fife	M	Live Stranding
Cetacean	M11/16	<i>Globicephala melas</i>	Long-finned pilot whale	04/01/2016	Western Isles	M	Not Examined: Morphometrics Taken
Cetacean	M12/16	<i>Globicephala melas</i>	Long-finned pilot whale	04/01/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M18/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	04/01/2016	Fife	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M5/16	<i>Halichoerus grypus</i>	Grey seal	04/01/2016	Highland	U	Not Examined: Not Priority
Pinniped	M6/16	<i>Halichoerus grypus</i>	Grey seal	04/01/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M7/16	<i>Halichoerus grypus</i>	Grey seal	04/01/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M8/16	<i>Halichoerus grypus</i>	Grey seal	04/01/2016	Fife	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M9/16	<i>Halichoerus grypus</i>	Grey seal	04/01/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M15/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	05/01/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M16/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	05/01/2016	Fife	U	Not Examined: Insufficient Data

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
		<i>species)</i>	<i>species)</i>				
Pinniped	M17/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	05/01/2016	Fife	U	Not Examined: Insufficient Data
Pinniped	M20/16	<i>Halichoerus grypus</i>	Grey seal	05/01/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M21/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	05/01/2016	Fife	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M22/16	<i>Halichoerus grypus</i>	Grey seal	05/01/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M19/16	<i>Balaenoptera physalus</i>	Fin whale	06/01/2016	Orkney	F	Not Examined: Samples Taken
Pinniped	M26/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	06/01/2016	Angus	U	Not Examined: Insufficient Data
Cetacean	M36/16	<i>Balaenoptera acutorostrata</i>	Minke whale	06/01/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M23/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	07/01/2016	Highland	U	Not Examined: Reason Unknown
Pinniped	M55/16	<i>Halichoerus grypus</i>	Grey seal	07/01/2016	Argyll and Bute	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Marine Turtle	M24/16	<i>Dermochelys coriacea</i>	Leatherback turtle	08/01/2016	Aberdeenshire	M	Not Established
Cetacean	M25.1/16	<i>Grampus griseus</i>	Risso's dolphin	08/01/2016	Highland	F	Live Stranding
Cetacean	M25.2/16	<i>Grampus griseus</i>	Risso's dolphin	08/01/2016	Highland	F	Not Examined: Samples Taken
Pinniped	M27/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	08/01/2016	Angus	U	Not Examined: Advanced Autolysis
Pinniped	M29/16	<i>Halichoerus grypus</i>	Grey seal	09/01/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M30/16	<i>Halichoerus grypus</i>	Grey seal	09/01/2016	Fife	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M101/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	10/01/2016	Aberdeenshire	U	Not Examined: Delay in Reporting
Pinniped	M28/16	<i>Halichoerus grypus</i>	Grey seal	10/01/2016	Falkirk	U	Not Examined: Carcase

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
							Incomplete/Scavenger Damage
Pinniped	M31/16	<i>Halichoerus grypus</i>	Grey seal	10/01/2016	Fife	F	Physical Trauma: Possible grey seal predation
Pinniped	M32/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	10/01/2016	East Lothian	U	Not Examined: Advanced Autolysis
Pinniped	M35/16	<i>Halichoerus grypus</i>	Grey seal	10/01/2016	City of Dundee	U	Not Examined: Advanced Autolysis
Cetacean	M38/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	10/01/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M50/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	10/01/2016	West Lothian	U	Live Stranding: Successful refloat
Pinniped	M172/16	<i>Halichoerus grypus</i>	Grey seal	11/01/2016	Fife	M	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M33/16	<i>Halichoerus grypus</i>	Grey seal	11/01/2016	Moray	U	Physical Trauma: Entanglement
Pinniped	M34/16	<i>Halichoerus grypus</i>	Grey seal	11/01/2016	Moray	U	Physical Trauma: Entanglement
Cetacean	M37/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	11/01/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M39/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	12/01/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M40/16	<i>Stenella coeruleoalba</i>	Striped dolphin	13/01/2016	Shetland	M	Live Stranding
Pinniped	M41/16	<i>Halichoerus grypus</i>	Grey seal	14/01/2016	Angus	U	Not Examined: Advanced Autolysis
Pinniped	M42/16	<i>Halichoerus grypus</i>	Grey seal	14/01/2016	Angus	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M43/16	<i>Halichoerus grypus</i>	Grey seal	14/01/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M68/16	<i>Halichoerus grypus</i>	Grey seal	16/01/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M69/16	<i>Halichoerus grypus</i>	Grey seal	16/01/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M70/16	<i>Halichoerus grypus</i>	Grey seal	16/01/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M71/16	<i>Halichoerus grypus</i>	Grey seal	16/01/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M72/16	<i>Halichoerus grypus</i>	Grey seal	16/01/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M44/16	<i>Halichoerus grypus</i>	Grey seal	17/01/2016	Aberdeenshire	U	Not Examined: Not Priority

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M45/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	17/01/2016	Orkney	U	Not Examined: Insufficient Data
Pinniped	M46/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	17/01/2016	Orkney	U	Not Examined: Not Priority
Cetacean	M47/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	17/01/2016	East Lothian	U	Not Examined: Advanced Autolysis
Pinniped	M48/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	18/01/2016	Angus	U	Not Examined: Advanced Autolysis
Pinniped	M49/16	<i>Halichoerus grypus</i>	Grey seal	18/01/2016	Angus	U	Not Examined: Not Priority
Pinniped	M51/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	19/01/2016	Grampian	U	Not Examined: Insufficient Data
Pinniped	M52/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	19/01/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M53/16	<i>Halichoerus grypus</i>	Grey seal	19/01/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M54/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	19/01/2016	City of Aberdeen	M	Physical Trauma: Other
Pinniped	M56/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	20/01/2016	Highland	U	Not Examined: Advanced Autolysis
Basking Shark	M57/16	<i>Cetorhinus maximus</i>	Basking shark	23/01/2016	North Ayrshire	M	Not Examined: Samples Taken
Pinniped	M58/16	<i>Halichoerus grypus</i>	Grey seal	23/01/2016	Scottish Borders	U	Not Examined: Advanced Autolysis
Cetacean	M59/16	<i>Phocoena phocoena</i>	Harbour porpoise	23/01/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M81/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/01/2016	Highland	U	Live Stranding: Successful refloat
Cetacean	M60/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	25/01/2016	Western Isles	F	Not Examined: Advanced Autolysis
Cetacean	M61/16	<i>Balaenoptera acutorostrata</i>	Minke whale	25/01/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M62/16	<i>Phocoena phocoena</i>	Harbour porpoise	25/01/2016	Moray	U	Not Examined: Carcase Not Found
Cetacean	M63/16	<i>Stenella coeruleoalba</i>	Striped dolphin	26/01/2016	Moray	M	Live Stranding
Pinniped	M64/16	<i>Phoca vitulina</i>	Harbour seal	26/01/2016	Highland	F	Pneumonia: Parasitic

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
			(Common seal)				
Cetacean	M65/16	<i>Phocoena phocoena</i>	Harbour porpoise	27/01/2016	Argyll and Bute	F	Not Examined: Samples Taken
Pinniped	M66/16	<i>Halichoerus grypus</i>	Grey seal	27/01/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M67/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	27/01/2016	Shetland	U	Physical Trauma: Shot (suspected)
Pinniped	M77/16	<i>Halichoerus grypus</i>	Grey seal	27/01/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M79/16	<i>Phocoena phocoena</i>	Harbour porpoise	27/01/2016	Argyll and Bute	U	Not Examined: Delay in Reporting
Cetacean	M74/16	<i>Phocoena phocoena</i>	Harbour porpoise	30/01/2016	Moray	U	Not Examined: Samples Taken
Pinniped	M75/16	<i>Halichoerus grypus</i>	Grey seal	30/01/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M76/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	31/01/2016	Shetland	M	Not Examined: Samples Taken
Pinniped	M78/16	<i>Halichoerus grypus</i>	Grey seal	31/01/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M80/16	<i>Phocoena phocoena</i>	Harbour porpoise	01/02/2016	Aberdeenshire	U	Not Examined: Samples Taken
Cetacean	M102/16	<i>Phocoena phocoena</i>	Harbour porpoise	02/02/2016	City of Aberdeen	M	Generalised Bacterial Infection
Cetacean	M82/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	03/02/2016	Argyll and Bute	F	Not Examined: Advanced Autolysis
Pinniped	M83/16	<i>Halichoerus grypus</i>	Grey seal	03/02/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M103/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	04/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M107/16	<i>Stenella coeruleoalba</i>	Striped dolphin	04/02/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M84/16	<i>Phocoena phocoena</i>	Harbour porpoise	04/02/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M86/16	<i>Phocoena phocoena</i>	Harbour porpoise	04/02/2016	Argyll and Bute	U	Not Examined: Removed by Tide
Pinniped	M97/16	<i>Halichoerus grypus</i>	Grey seal	04/02/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M85/16	<i>Globicephala melas</i>	Long-finned pilot whale	05/02/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M87/16	<i>Halichoerus grypus</i>	Grey seal	06/02/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M88/16	<i>Stenella coeruleoalba</i>	Striped dolphin	06/02/2016	Western Isles	F	Not Examined: Advanced Autolysis
Pinniped	M91/16	<i>Halichoerus grypus</i>	Grey seal	06/02/2016	Orkney	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M89/16	<i>Halichoerus grypus</i>	Grey seal	08/02/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M90/16	<i>Phocoena phocoena</i>	Harbour porpoise	09/02/2016	Argyll and Bute	M	Not Examined: Samples Taken
Pinniped	M92/16	<i>Halichoerus grypus</i>	Grey seal	09/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M93/16	<i>Halichoerus grypus</i>	Grey seal	09/02/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M94/16	<i>Halichoerus grypus</i>	Grey seal	09/02/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M95/16	<i>Halichoerus grypus</i>	Grey seal	09/02/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M96/16	<i>Phocoena phocoena</i>	Harbour porpoise	10/02/2016	Fife	F	Not Examined: Samples Taken
Pinniped	M98/16	<i>Halichoerus grypus</i>	Grey seal	10/02/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M99/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	10/02/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M100/16	<i>Globicephala melas</i>	Long-finned pilot whale	11/02/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M120/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	12/02/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M104/16	<i>Phocoena phocoena</i>	Harbour porpoise	13/02/2016	Highland	F	Physical Trauma: Bottlenose Dolphin Attack
Pinniped	M106/16	<i>Halichoerus grypus</i>	Grey seal	13/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M105/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/02/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M122/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	14/02/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M108/16	<i>Phocoena phocoena</i>	Harbour porpoise	15/02/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M109/16	<i>Phocoena phocoena</i>	Harbour porpoise	15/02/2016	Aberdeenshire	M	Physical Trauma: Bottlenose Dolphin Attack
Cetacean	M110/16	<i>Phocoena phocoena</i>	Harbour porpoise	17/02/2016	Argyll and Bute	F	Physical Trauma: Bottlenose Dolphin Attack
Pinniped	M111/16	<i>Phoca vitulina</i>	Harbour seal	18/02/2016	Orkney	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
			(Common seal)				
Pinniped	M112/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	18/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M113/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	18/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M114/16	<i>Halichoerus grypus</i>	Grey seal	18/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M115/16	<i>Halichoerus grypus</i>	Grey seal	18/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M116/16	<i>Halichoerus grypus</i>	Grey seal	18/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M117/16	<i>Halichoerus grypus</i>	Grey seal	18/02/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M119/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	20/02/2016	Aberdeenshire	U	Not Examined: Insufficient Data
Cetacean	M121/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	21/02/2016	Argyll and Bute	F	Not Examined: Carcase Incomplete/Scavenger Damage
Cetacean	M118/16	<i>Phocoena phocoena</i>	Harbour porpoise	22/02/2016	Argyll and Bute	F	Not Examined: Samples Taken
Pinniped	M123/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	22/02/2016	Inverclyde	U	Not Examined: Advanced Autolysis
Cetacean	M124/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	23/02/2016	Western Isles	U	Not Examined: At Sea
Cetacean	M125/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/02/2016	East Lothian	F	Pneumonia: Parasitic
Cetacean	M126/16	<i>Phocoena phocoena</i>	Harbour porpoise	25/02/2016	Aberdeenshire	F	Physical Trauma: Bottlenose Dolphin Attack
Cetacean	M127/16	<i>Odontocete (indeterminate species)</i>	Short-beaked common dolphin/striped dolphin (indeterminate species)	26/02/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M130/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	26/02/2016	East Lothian	U	Not Examined: Insufficient Data
Cetacean	M128/16	<i>Cetacean (indeterminate species)</i>	Cetacean	28/02/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
		<i>species)</i>	(indeterminate species)				
Pinniped	M129/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	28/02/2016	Western Isles	U	Not Examined: Insufficient Data
Cetacean	M131/16	<i>Phocoena phocoena</i>	Harbour porpoise	28/02/2016	City of Aberdeen	U	Not Examined: Advanced Autolysis
Cetacean	M132/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	28/02/2016	Argyll and Bute	F	Not Examined: Samples Taken
Cetacean	M133/16	<i>Megaptera novaeangliae</i>	Humpback whale	01/03/2016	Western Isles	M	Physical Trauma: Entanglement
Cetacean	M134/16	<i>Phocoena phocoena</i>	Harbour porpoise	04/03/2016	Highland	M	Starvation/Hypothermia
Cetacean	M135/16	<i>Phocoena phocoena</i>	Harbour porpoise	05/03/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M136/16	<i>Phocoena phocoena</i>	Harbour porpoise	05/03/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Pinniped	M137/16	<i>Halichoerus grypus</i>	Grey seal	06/03/2016	Scottish Borders	U	Not Examined: Advanced Autolysis
Pinniped	M138/16	<i>Halichoerus grypus</i>	Grey seal	06/03/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M139/16	<i>Halichoerus grypus</i>	Grey seal	06/03/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M140/16	<i>Phocoena phocoena</i>	Harbour porpoise	06/03/2016	Aberdeenshire	M	Not Examined: Advanced Autolysis
Cetacean	M141/16	<i>Phocoena phocoena</i>	Harbour porpoise	06/03/2016	City of Aberdeen	U	Not Examined: Advanced Autolysis
Pinniped	M142/16	<i>Halichoerus grypus</i>	Grey seal	07/03/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M143/16	<i>Globicephala melas</i>	Long-finned pilot whale	09/03/2016	Western Isles	M	Not Examined: Advanced Autolysis
Pinniped	M144/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	10/03/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M145/16	<i>Phocoena phocoena</i>	Harbour porpoise	10/03/2016	Fife	F	Not Examined: Samples Taken
Pinniped	M146/16	<i>Halichoerus grypus</i>	Grey seal	11/03/2016	Western Isles	U	Physical Trauma: Shot (Known)
Cetacean	M238/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	11/03/2016	Shetland	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M147/16	<i>Halichoerus grypus</i>	Grey seal	12/03/2016	Angus	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M148/16	<i>Phoca vitulina</i>	Harbour seal	13/03/2016	South Ayrshire	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
			(Common seal)				
Cetacean	M149/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/03/2016	Aberdeenshire	F	Not Examined: Samples Taken
Cetacean	M150/16	<i>Phocoena phocoena</i>	Harbour porpoise	15/03/2016	East Lothian	F	Starvation/Hypothermia
Cetacean	M151/16	<i>Odontocete (indeterminate species)</i>	Short-beaked common dolphin/striped dolphin (indeterminate species)	15/03/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M152/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	16/03/2016	Aberdeenshire	U	Not Examined: Insufficient Data
Cetacean	M162/16	<i>Odontocete (indeterminate species)</i>	Short-beaked common dolphin/striped dolphin (indeterminate species)	16/03/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M155/16	<i>Phocoena phocoena</i>	Harbour porpoise	18/03/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M153/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	19/03/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M154/16	<i>Halichoerus grypus</i>	Grey seal	22/03/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M157/16	<i>Grampus griseus</i>	Risso's dolphin	25/03/2016	Orkney	M	Live Stranding
Cetacean	M156/16	<i>Phocoena phocoena</i>	Harbour porpoise	26/03/2016	Argyll and Bute	F	Not Examined: Samples Taken
Cetacean	M158/16	<i>Phocoena phocoena</i>	Harbour porpoise	26/03/2016	Highland	M	Not Examined: Samples Taken
Pinniped	M159/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	28/03/2016	Highland	U	Not Examined: Delay in Reporting
Pinniped	M160/16	<i>Halichoerus grypus</i>	Grey seal	28/03/2016	Highland	F	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M170/16	<i>Phocoena phocoena</i>	Harbour porpoise	28/03/2016	Argyll and Bute	U	Not Examined: Insufficient Data
Cetacean	M161/16	<i>Stenella coeruleoalba</i>	Striped dolphin	29/03/2016	Western Isles	M	Not Examined: Advanced Autolysis
Cetacean	M163/16	<i>Phocoena phocoena</i>	Harbour porpoise	30/03/2016	Angus	U	Not Examined: Carcase Not Found

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M164/16	<i>Phocoena phocoena</i>	Harbour porpoise	30/03/2016	Fife	M	Not Examined: Samples Taken
Pinniped	M165/16	<i>Halichoerus grypus</i>	Grey seal	30/03/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M166/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	31/03/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M167/16	<i>Phocoena phocoena</i>	Harbour porpoise	31/03/2016	Fife	M	Not Examined: Advanced Autolysis
Pinniped	M168/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	31/03/2016	Argyll and Bute	U	Physical Trauma: Shot (Known)
Pinniped	M169/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	31/03/2016	North Ayrshire	U	Not Examined: Advanced Autolysis
Pinniped	M171/16	<i>Halichoerus grypus</i>	Grey seal	01/04/2016	Aberdeenshire	U	Physical Trauma: Shot (Known)
Pinniped	M173/16	<i>Halichoerus grypus</i>	Grey seal	02/04/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M174/16	<i>Halichoerus grypus</i>	Grey seal	03/04/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M175/16	<i>Phocoena phocoena</i>	Harbour porpoise	03/04/2016	Fife	M	Not Examined: Samples Taken
Pinniped	M176/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	05/04/2016	Aberdeenshire	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M177/16	<i>Halichoerus grypus</i>	Grey seal	05/04/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M178/16	<i>Phocoena phocoena</i>	Harbour porpoise	05/04/2016	City of Aberdeen	M	Physical Trauma: Bottlenose Dolphin Attack
Pinniped	M179/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	05/04/2016	Western Isles	U	Not Examined: Removed by Tide
Pinniped	M180/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	05/04/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M181/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	05/04/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M182/16	<i>Halichoerus grypus</i>	Grey seal	07/04/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M184/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	08/04/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M185/16	<i>Halichoerus grypus</i>	Grey seal	09/04/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M187/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	09/04/2016	Shetland	U	Not Examined: Advanced Autolysis
Cetacean	M186/16	<i>Phocoena phocoena</i>	Harbour porpoise	10/04/2016	Angus	U	Not Examined: Removed by Tide

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M188/16	<i>Phocoena phocoena</i>	Harbour porpoise	10/04/2016	Aberdeenshire	U	Not Examined: Delay in Reporting
Cetacean	M189/16	<i>Phocoena phocoena</i>	Harbour porpoise	11/04/2016	City of Aberdeen	U	Not Examined: Removed by Tide
Cetacean	M190/16	<i>Phocoena phocoena</i>	Harbour porpoise	12/04/2016	Highland	M	Physical Trauma: Bottlenose Dolphin Attack
Cetacean	M191/16	<i>Phocoena phocoena</i>	Harbour porpoise	12/04/2016	Highland	F	Physical Trauma: Bottlenose Dolphin Attack
Cetacean	M192/16	<i>Phocoena phocoena</i>	Harbour porpoise	12/04/2016	Stirling	U	Not Examined: Delay in Reporting
Cetacean	M193/16	<i>Phocoena phocoena</i>	Harbour porpoise	13/04/2016	Highland	U	Not Examined: Removed by Tide
Cetacean	M198/16	<i>Odontocete (indeterminate species)</i>	Dolphin (indeterminate species)	13/04/2016	Highland	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M194/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	14/04/2016	City of Aberdeen	U	Not Examined: Advanced Autolysis
Cetacean	M195/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	14/04/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M202/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	14/04/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M196/16	<i>Halichoerus grypus</i>	Grey seal	16/04/2016	North Ayrshire	U	Not Examined: Advanced Autolysis
Cetacean	M197/16	<i>Phocoena phocoena</i>	Harbour porpoise	17/04/2016	Argyll and Bute	F	Not Examined: Samples Taken
Cetacean	M199/16	<i>Phocoena phocoena</i>	Harbour porpoise	17/04/2016	City of Aberdeen	M	Physical Trauma: Bottlenose Dolphin Attack
Cetacean	M200/16	<i>Megaptera novaeangliae</i>	Humpback whale	19/04/2016	Western Isles	M	Not Examined: Samples Taken
Pinniped	M201/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	20/04/2016	Inverclyde	U	Not Examined: Samples Taken
Pinniped	M203/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	22/04/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M206/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	23/04/2016	Fife	U	Not Examined: Insufficient Data
Cetacean	M204/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/04/2016	East Lothian	M	Not Examined: Samples Taken
Cetacean	M205/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/04/2016	Aberdeenshire	U	Not Examined: Carcase

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
							Incomplete/Scavenger Damage
Cetacean	M207/16	<i>Ziphius cavirostris</i>	Cuvier's beaked whale	24/04/2016	Highland	U	Not Examined: Carcase Incomplete/Scavenger Damage
Cetacean	M208/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/04/2016	City of Aberdeen	F	Not Examined: Samples Taken
Cetacean	M209/16	<i>Phocoena phocoena</i>	Harbour porpoise	25/04/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Cetacean	M210/16	<i>Phocoena phocoena</i>	Harbour porpoise	27/04/2016	City of Aberdeen	U	Not Examined: Removed by Council
Cetacean	M211/16	<i>Phocoena phocoena</i>	Harbour porpoise	28/04/2016	Angus	M	Not Examined: Advanced Autolysis
Pinniped	M212/16	<i>Halichoerus grypus</i>	Grey seal	28/04/2016	Aberdeenshire	M	Not Examined: Advanced Autolysis
Cetacean	M213/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	04/05/2016	Orkney	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M214/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	05/05/2016	Argyll and Bute	U	Not Examined: Insufficient Data
Pinniped	M215/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	05/05/2016	North Ayrshire	U	Not Examined: Advanced Autolysis
Cetacean	M216/16	<i>Globicephala melas</i>	Long-finned pilot whale	05/05/2016	Highland	U	Not Examined: Carcase Incomplete/Scavenger Damage
Cetacean	M217/16	<i>Phocoena phocoena</i>	Harbour porpoise	05/05/2016	Fife	M	Not Examined: Samples Taken
Pinniped	M218/16	<i>Halichoerus grypus</i>	Grey seal	06/05/2016	Fife	F	Not Examined: Samples Taken
Cetacean	M219/16	<i>Phocoena phocoena</i>	Harbour porpoise	08/05/2016	Western Isles	F	Not Examined: Advanced Autolysis
Cetacean	M220/16	<i>Odontocete (indeterminate species)</i>	Short-beaked common dolphin/striped dolphin (indeterminate species)	09/05/2016	Western Isles	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M221/16	<i>Halichoerus grypus</i>	Grey seal	09/05/2016	Scottish Borders	U	Not Examined: Advanced Autolysis
Pinniped	M222/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	09/05/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M223/16	<i>Phocoena phocoena</i>	Harbour porpoise	10/05/2016	Highland	U	Not Examined: Carcase Incomplete/Scavenger Damage
Cetacean	M234/16	<i>Mysticete (indeterminate species)</i>	Baleen whale (indeterminate species)	10/05/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M224/16	<i>Phocoena phocoena</i>	Harbour porpoise	11/05/2016	North Ayrshire	U	Not Examined: Advanced Autolysis
Cetacean	M225/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	11/05/2016	City of Dundee	U	Not Examined: Insufficient Data
Cetacean	M226/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	11/05/2016	City of Dundee	U	Not Examined: Insufficient Data
Pinniped	M227/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	12/05/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M228/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	13/05/2016	Highland	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M229/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	13/05/2016	Highland	U	Not Examined: Carcase Incomplete/Scavenger Damage
Cetacean	M230/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/05/2016	City of Aberdeen	U	Not Examined: Advanced Autolysis
Cetacean	M237/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/05/2016	Highland	U	Physical Trauma: Possible grey seal predation
Pinniped	M232/16	<i>Halichoerus grypus</i>	Grey seal	15/05/2016	Fife	U	Not Examined: Advanced Autolysis
Cetacean	M236/16	<i>Phocoena phocoena</i>	Harbour porpoise	16/05/2016	Argyll and Bute	U	Not Examined: Carcase Incomplete/Scavenger Damage
Cetacean	M250/16	<i>Phocoena phocoena</i>	Harbour porpoise	16/05/2016	Argyll and Bute	U	Physical Trauma: Possible grey seal predation
Pinniped	M231/16	<i>Halichoerus grypus</i>	Grey seal	17/05/2016	East Lothian	U	Not Examined: Not Priority
Pinniped	M233/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	18/05/2016	Fife	U	Not Examined: Removed by Tide
Pinniped	M235/16	<i>Halichoerus grypus</i>	Grey seal	20/05/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M239/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/05/2016	West	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Dunbartonshire							
Pinniped	M240/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	24/05/2016	East Lothian	M	Not Examined: Samples Taken
Pinniped	M241/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	24/05/2016	Highland	U	Not Examined: Insufficient Data
Pinniped	M243/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	24/05/2016	Argyll and Bute	U	Not Examined: Insufficient Data
Cetacean	M253/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/05/2016	Argyll and Bute	U	Not Examined: Delay in Reporting
Cetacean	M242/16	<i>Phocoena phocoena</i>	Harbour porpoise	26/05/2016	Angus	U	Not Examined: Insufficient Data
Cetacean	M244/16	<i>Mysticete (indeterminate species)</i>	Baleen whale (indeterminate species)	26/05/2016	Western Isles	U	Not Examined: At Sea
Pinniped	M245/16	<i>Halichoerus grypus</i>	Grey seal	28/05/2016	Argyll and Bute	M	Not Examined: Advanced Autolysis
Cetacean	M246/16	<i>Phocoena phocoena</i>	Harbour porpoise	29/05/2016	Moray	M	Maternal Separation/Starvation
Cetacean	M247/16	<i>Tursiops truncatus</i>	Bottlenose dolphin	29/05/2016	Highland	F	Live Stranding: Successful refloat
Cetacean	M249/16	<i>Balaenoptera acutorostrata</i>	Minke whale	30/05/2016	Western Isles	U	Not Examined: At Sea
Pinniped	M248/16	<i>Halichoerus grypus</i>	Grey seal	31/05/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M251/16	<i>Balaenoptera acutorostrata</i>	Minke whale	01/06/2016	Fife	M	Physical Trauma: Entanglement
Cetacean	M252/16	<i>Phocoena phocoena</i>	Harbour porpoise	01/06/2016	Fife	U	Physical Trauma: Possible grey seal predation
Cetacean	M254/16	<i>Grampus griseus</i>	Risso's dolphin	02/06/2016	Argyll and Bute	F	Not Examined: Advanced Autolysis
Pinniped	M255/16	<i>Phoca vitulina</i>	Seal (indeterminate species)	05/06/2016	Highland	U	Not Examined: Insufficient Data
Cetacean	M268/16	<i>Phocoena phocoena</i>	Harbour porpoise	05/06/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M256/16	<i>Halichoerus grypus</i>	Grey seal	06/06/2016	City of Aberdeen	U	Not Examined: Advanced Autolysis
Pinniped	M257/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	07/06/2016	Moray	U	Not Examined: Insufficient Data
Pinniped	M258/16	<i>Halichoerus grypus</i>	Grey seal	08/06/2016	Fife	M	Physical Trauma: Likely grey seal

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
							predation
Pinniped	M259/16	<i>Halichoerus grypus</i>	Grey seal	08/06/2016	Fife	M	Physical Trauma: Likely grey seal predation
Pinniped	M260/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	08/06/2016	Fife	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M262/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	08/06/2016	Orkney	U	Physical Trauma: Possible grey seal predation
Cetacean	M261/16	<i>Phocoena phocoena</i>	Harbour porpoise	09/06/2016	Highland	M	Not Examined: Samples Taken
Cetacean	M263/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	09/06/2016	Argyll and Bute	M	Not Examined: Samples Taken
Cetacean	M264/16	<i>Globicephala melas</i>	Long-finned pilot whale	09/06/2016	Western Isles	M	Not Examined: Advanced Autolysis
Pinniped	M270/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	10/06/2016	Fife	U	Physical Trauma: Possible grey seal predation
Pinniped	M271/16	<i>Halichoerus grypus</i>	Grey seal	10/06/2016	Fife	U	Physical Trauma: Possible grey seal predation
Pinniped	M272/16	<i>Halichoerus grypus</i>	Grey seal	10/06/2016	Fife	U	Physical Trauma: Possible grey seal predation
Pinniped	M265/16	<i>Halichoerus grypus</i>	Grey seal	11/06/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M266/16	<i>Phocoena phocoena</i>	Harbour porpoise	12/06/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M269/16	<i>Phocoena phocoena</i>	Harbour porpoise	12/06/2016	Western Isles	M	Not Examined: Not Priority
Cetacean	M267/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	13/06/2016	Highland	M	Live Stranding
Cetacean	M273/16	<i>Phocoena phocoena</i>	Harbour porpoise	15/06/2016	Moray	M	Generalised chronic debilitation
Pinniped	M309/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	15/06/2016	Orkney	U	Not Examined: Insufficient Data
Pinniped	M274/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	16/06/2016	Highland	U	Not Examined: Insufficient Data
Pinniped	M275/16	<i>Halichoerus grypus</i>	Grey seal	16/06/2016	Fife	F	Physical Trauma: Possible grey seal predation
Cetacean	M276/16	<i>Phocoena phocoena</i>	Harbour porpoise	16/06/2016	Highland	U	Not Examined: Carcase

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
							Incomplete/Scavenger Damage
Cetacean	M277/16	<i>Phocoena phocoena</i>	Harbour porpoise	16/06/2016	Moray	U	Physical Trauma: Possible grey seal predation
Pinniped	M278/16	<i>Halichoerus grypus</i>	Grey seal	17/06/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M279/16	<i>Tursiops truncatus</i>	Bottlenose dolphin	17/06/2016	Highland	M	Not Examined: Samples Taken
Cetacean	M280/16	<i>Phocoena phocoena</i>	Harbour porpoise	18/06/2016	Highland	F	Not Examined: Samples Taken
Cetacean	M283/16	<i>Phocoena phocoena</i>	Harbour porpoise	18/06/2016	Argyll and Bute	U	Not Examined: Samples Taken
Cetacean	M284/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	18/06/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M302/16	<i>Phocoena phocoena</i>	Harbour porpoise	19/06/2016	Aberdeenshire	U	Not Examined: Delay in Reporting
Pinniped	M281/16	<i>Halichoerus grypus</i>	Grey seal	20/06/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M282/16	<i>Phocoena phocoena</i>	Harbour porpoise	20/06/2016	Angus	M	Physical Trauma: Bottlenose Dolphin Attack
Pinniped	M285/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	20/06/2016	Shetland	F	Not Examined: Advanced Autolysis
Cetacean	M286/16	<i>Globicephala melas</i>	Long-finned pilot whale	21/06/2016	Shetland	U	Not Examined: Advanced Autolysis
Pinniped	M287/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	21/06/2016	Highland	U	Not Examined: Insufficient Data
Cetacean	M288/16	<i>Phocoena phocoena</i>	Harbour porpoise	22/06/2016	North Ayrshire	M	Maternal Separation/Starvation
Cetacean	M292/16	<i>Physeter macrocephalus</i>	Sperm whale	22/06/2016	Highland	M	Not Examined: Advanced Autolysis
Pinniped	M290/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	23/06/2016	Orkney	M	Not Examined: Not Priority
Pinniped	M291/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	23/06/2016	Orkney	F	Not Examined: Not Priority
Cetacean	M293/16	<i>Odontocete (indeterminate species)</i>	Dolphin (indeterminate species)	24/06/2016	North Ayrshire	F	Not Examined: Advanced Autolysis
Pinniped	M295/16	<i>Halichoerus grypus</i>	Grey seal	24/06/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M294/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	25/06/2016	Orkney	U	Not Examined: Insufficient Data

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M296/16	<i>Phocoena phocoena</i>	Harbour porpoise	25/06/2016	Inverclyde	M	Maternal Separation/Starvation
Pinniped	M297/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	25/06/2016	Highland	F	Physical Trauma: Likely Grey seal predation
Pinniped	M298/16	<i>Halichoerus grypus</i>	Grey seal	25/06/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M299/16	<i>Lagenorhynchus acutus</i>	Atlantic white-sided dolphin	27/06/2016	Highland	M	Live Stranding
Cetacean	M300/16	<i>Phocoena phocoena</i>	Harbour porpoise	29/06/2016	Orkney	U	Not Examined: Removed by Tide
Cetacean	M301/16	<i>Grampus griseus</i>	Risso's dolphin	29/06/2016	Western Isles	M	Not Examined: Samples Taken
Cetacean	M303/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	29/06/2016	Argyll and Bute	F	Not Examined: Samples Taken
Pinniped	M289/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	01/07/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M305/16	<i>Halichoerus grypus</i>	Grey seal	01/07/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M304/16	<i>Phocoena phocoena</i>	Harbour porpoise	03/07/2016	Highland	U	Not Examined: Weather/travel difficulties
Pinniped	M307/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	03/07/2016	Orkney	M	Physical Trauma: Entanglement
Pinniped	M308/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	03/07/2016	Orkney	F	Physical Trauma: Entanglement
Pinniped	M318/16	<i>Halichoerus grypus</i>	Grey seal	04/07/2016	Highland	U	Not Examined: Not Priority
Cetacean	M306/16	<i>Phocoena phocoena</i>	Harbour porpoise	05/07/2016	City of Aberdeen	U	Not Examined: Advanced Autolysis
Pinniped	M328/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	05/07/2016	Highland	U	Not Examined: Delay in reporting
Pinniped	M310/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	06/07/2016	Highland	F	Not Examined: Advanced Autolysis
Cetacean	M316/16	<i>Balaenoptera acutorostrata</i>	Minke whale	06/07/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M311/16	<i>Phocoena phocoena</i>	Harbour porpoise	09/07/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M312/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	10/07/2016	Highland	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M313/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	10/07/2016	Highland	F	Not Examined: Advanced Autolysis
Pinniped	M326/16	<i>Halichoerus grypus</i>	Grey seal	10/07/2016	Orkney	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M327/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	10/07/2016	Orkney	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M314/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	11/07/2016	Argyll and Bute	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M325/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	11/07/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M315/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	12/07/2016	Argyll and Bute	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M317/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	13/07/2016	Highland	F	Pending
Cetacean	M319/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	13/07/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M330/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	13/07/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Cetacean	M354/16	<i>Megaptera novaeangliae</i>	Humpback whale	13/07/2016	At sea	U	Not Examined: At Sea
Cetacean	M320/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/07/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M321/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/07/2016	Orkney	M	Live Stranding
Cetacean	M335/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/07/2016	Argyll and Bute	U	Not Examined: Delay in Reporting
Cetacean	M323/16	<i>Physeter macrocephalus</i>	Sperm whale	15/07/2016	At sea	U	Not Examined: At Sea
Cetacean	M324/16	<i>Megaptera novaeangliae</i>	Humpback whale	15/07/2016	At sea	U	Not Examined: At Sea
Pinniped	M329/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	16/07/2016	Highland	U	Not Examined: Weather/travel difficulties
Cetacean	M332/16	<i>Phocoena phocoena</i>	Harbour porpoise	16/07/2016	Argyll and Bute	M	Not Examined: Samples Taken
Pinniped	M333/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	16/07/2016	Highland	M	Not Examined: Samples Taken
Pinniped	M334/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	16/07/2016	Highland	M	Not Examined: Samples Taken

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M337/16	<i>Odontocete (indeterminate species)</i>	Short-beaked common dolphin/striped dolphin (indeterminate species)	16/07/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M336/16	<i>Phocoena phocoena</i>	Harbour porpoise	17/07/2016	Moray	M	Not Examined: Advanced Autolysis
Pinniped	M322/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	18/07/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M338/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	21/07/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M339/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	21/07/2016	Western Isles	F	Not Examined: Samples Taken
Pinniped	M340/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	22/07/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M341/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/07/2016	Dumfries and Galloway	U	Not Examined: Weather/travel difficulties
Pinniped	M342/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	26/07/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M343/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	29/07/2016	Argyll and Bute	U	Not Examined: Insufficient Data
Cetacean	M344/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	29/07/2016	Highland	M	Physical Trauma: Other
Pinniped	M345/16	<i>Halichoerus grypus</i>	Grey seal	29/07/2016	Moray	F	Not Examined: Not Priority
Pinniped	M346/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	29/07/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M347/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	30/07/2016	Argyll and Bute	U	Not Examined: Samples Taken
Cetacean	M348/16	<i>Globicephala melas</i>	Long-finned pilot whale	01/08/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M349/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	03/08/2016	Highland	U	Not Examined: Insufficient Data

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M350/16	<i>Odontocete (indeterminate species)</i>	Short-beaked common dolphin/striped dolphin (indeterminate species)	04/08/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M389/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	04/08/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M351/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	06/08/2016	North Ayrshire	U	Not Examined: Advanced Autolysis
Pinniped	M352/16	<i>Halichoerus grypus</i>	Grey seal	06/08/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M353/16	<i>Phocoena phocoena</i>	Harbour porpoise	06/08/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Pinniped	M355/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	08/08/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M356/16	<i>Halichoerus grypus</i>	Grey seal	08/08/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M357/16	<i>Lagenorhynchus acutus</i>	Atlantic white-sided dolphin	09/08/2016	Orkney	U	Live Stranding: Successful refloat
Cetacean	M359/16	<i>Grampus griseus</i>	Risso's dolphin	09/08/2016	Argyll and Bute	U	Not Examined: Samples Taken
Pinniped	M366/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	09/08/2016	Argyll and Bute	U	Not Examined: Weather/travel difficulties
Cetacean	M358/16	<i>Phocoena phocoena</i>	Harbour porpoise	10/08/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M364/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	10/08/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M365/16	<i>Halichoerus grypus</i>	Grey seal	10/08/2016	Angus	F	Not Examined: Samples Taken
Cetacean	M363/16	<i>Phocoena phocoena</i>	Harbour porpoise	11/08/2016	Orkney	U	Not Examined: Samples Taken
Pinniped	M360/16	<i>Halichoerus grypus</i>	Grey seal	12/08/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M361/16	<i>Halichoerus grypus</i>	Grey seal	12/08/2016	Western Isles	U	Not Examined: Not Priority
Cetacean	M390/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate)	12/08/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
			species)				
Pinniped	M362/16	<i>Halichoerus grypus</i>	Grey seal	15/08/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M391/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	15/08/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M367/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	16/08/2016	Western Isles	U	Not Examined: Insufficient Data
Cetacean	M368/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	16/08/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M369/16	<i>Phocoena phocoena</i>	Harbour porpoise	16/08/2016	Highland	F	Physical Trauma: Likely Grey seal predation
Pinniped	M370/16	<i>Halichoerus grypus</i>	Grey seal	17/08/2016	City of Aberdeen	U	Not Examined: Advanced Autolysis
Pinniped	M371/16	<i>Halichoerus grypus</i>	Grey seal	17/08/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M372/16	<i>Halichoerus grypus</i>	Grey seal	19/08/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M373/16	<i>Phocoena phocoena</i>	Harbour porpoise	19/08/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M374/16	<i>Halichoerus grypus</i>	Grey seal	20/08/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M375/16	<i>Halichoerus grypus</i>	Grey seal	23/08/2016	Highland	M	Not Examined: Samples Taken
Cetacean	M376/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/08/2016	Western Isles	F	Pending
Cetacean	M379/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	24/08/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M377/16	<i>Halichoerus grypus</i>	Grey seal	25/08/2016	Fife	U	Not Examined: Advanced Autolysis
Cetacean	M378/16	<i>Balaenoptera acutorostrata</i>	Minke whale	25/08/2016	Shetland	U	Not Examined: At Sea
Pinniped	M380/16	<i>Halichoerus grypus</i>	Grey seal	26/08/2016	Shetland	U	Not Examined: Advanced Autolysis
Cetacean	M381/16	<i>Phocoena phocoena</i>	Harbour porpoise	26/08/2016	Highland	F	Physical Trauma: Bottlenose Dolphin Attack
Pinniped	M382/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	30/08/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M383/16	<i>Phocoena phocoena</i>	Harbour porpoise	30/08/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M384/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	31/08/2016	Highland	U	Not Examined: Removed by Tide
Cetacean	M385/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	01/09/2016	Highland	M	Live Stranding
Pinniped	M386/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	01/09/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M387/16	<i>Halichoerus grypus</i>	Grey seal	02/09/2016	North Ayrshire	U	Not Examined: Advanced Autolysis
Pinniped	M388/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	05/09/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M392/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	08/09/2016	Argyll and Bute	U	Not Examined: Other
Cetacean	M393/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	08/09/2016	Orkney	M	Not Examined: Samples Taken
Pinniped	M394/16	<i>Halichoerus grypus</i>	Grey seal	08/09/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M395/16	<i>Halichoerus grypus</i>	Grey seal	10/09/2016	North Ayrshire	M	Not Examined: Samples Taken
Pinniped	M398/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	10/09/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M401/16	<i>Halichoerus grypus</i>	Grey seal	10/09/2016	Highland	U	Not Examined: Delay in reporting
Cetacean	M396/16	<i>Grampus griseus</i>	Risso's dolphin	11/09/2016	Orkney	M	Developmental abnormality
Pinniped	M397/16	<i>Halichoerus grypus</i>	Grey seal	11/09/2016	Fife	U	Not Examined: Weather/travel difficulties
Pinniped	M399/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	13/09/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M400/16	<i>Balaenoptera physalus</i>	Fin whale	14/09/2016	Shetland	M	Live Stranding
Cetacean	M402/16	<i>Odontocete (indeterminate species)</i>	Dolphin (indeterminate species)	18/09/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M406/16	<i>Halichoerus grypus</i>	Grey seal	19/09/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M403/16	<i>Halichoerus grypus</i>	Grey seal	20/09/2016	Highland	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M404/16	<i>Balaenoptera acutorostrata</i>	Minke whale	22/09/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M405/16	<i>Halichoerus grypus</i>	Grey seal	25/09/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Pinniped	M413/16	<i>Halichoerus grypus</i>	Grey seal	26/09/2016	Shetland	U	Not Examined: Advanced Autolysis
Cetacean	M407/16	<i>Odontocete (indeterminate species)</i>	Short-beaked common dolphin/striped dolphin (indeterminate species)	27/09/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Cetacean	M408/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	28/09/2016	Western Isles	U	Not Examined: Weather/travel difficulties
Cetacean	M409/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	30/09/2016	Western Isles	F	Generalised Bacterial Infection
Pinniped	M410/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	30/09/2016	Argyll and Bute	U	Not Examined: Insufficient Data
Pinniped	M411/16	<i>Halichoerus grypus</i>	Grey seal	30/09/2016	South Ayrshire	U	Not Examined: Advanced Autolysis
Cetacean	M476/16	<i>Odontocete (indeterminate species)</i>	Short-beaked common dolphin/striped dolphin (indeterminate species)	30/09/2016	Western Isles	U	Not Examined: Carcase Incomplete/Scavenger Damage
Cetacean	M486/16	<i>Phocoena phocoena</i>	Harbour porpoise	30/09/2016	North Ayrshire	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M412/16	<i>Halichoerus grypus</i>	Grey seal	01/10/2016	Shetland	U	Not Examined: Advanced Autolysis
Pinniped	M414/16	<i>Halichoerus grypus</i>	Grey seal	03/10/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M415/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	04/10/2016	Fife	M	Physical Trauma: Likely Grey seal predation
Pinniped	M503/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	04/10/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Cetacean	M416/16	<i>Phocoena phocoena</i>	Harbour porpoise	06/10/2016	North Ayrshire	U	Not Examined: Samples Taken

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M417/16	<i>Halichoerus grypus</i>	Grey seal	06/10/2016	South Ayrshire	M	Not Examined: Advanced Autolysis
Cetacean	M418/16	<i>Phocoena phocoena</i>	Harbour porpoise	06/10/2016	North Ayrshire	U	Not Examined: Advanced Autolysis
Cetacean	M419/16	<i>Phocoena phocoena</i>	Harbour porpoise	06/10/2016	Fife	F	Starvation/Hypothermia
Cetacean	M331/16	<i>Phocoena phocoena</i>	Harbour porpoise	08/10/2016	Aberdeenshire	M	Not Examined: Advanced autolysis
Cetacean	M420/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	08/10/2016	City of Edinburgh	F	Live Stranding
Cetacean	M421/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	09/10/2016	Highland	U	Not Examined: At Sea
Pinniped	M423/16	<i>Halichoerus grypus</i>	Grey seal	09/10/2016	Fife	M	Not Examined: Advanced Autolysis
Cetacean	M422/16	<i>Phocoena phocoena</i>	Harbour porpoise	13/10/2016	East Lothian	M	Physical Trauma: Bottlenose Dolphin Attack
Cetacean	M424/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/10/2016	City of Aberdeen	F	Gastritis and/or Enteritis
Cetacean	M425/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/10/2016	Western Isles	U	Not Examined: Weather/travel difficulties
Cetacean	M426/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/10/2016	Western Isles	U	Not Examined: Weather/travel difficulties
Cetacean	M427/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/10/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M432/16	<i>Halichoerus grypus</i>	Grey seal	14/10/2016	Orkney	M	Not Examined: Advanced Autolysis
Pinniped	M428/16	<i>Halichoerus grypus</i>	Grey seal	15/10/2016	Scottish Borders	U	Not Examined: Advanced Autolysis
Pinniped	M429/16	<i>Halichoerus grypus</i>	Grey seal	16/10/2016	Highland	F	Not Examined: Advanced Autolysis
Cetacean	M430/16	<i>Grampus griseus</i>	Risso's dolphin	17/10/2016	Orkney	M	Not Examined: Advanced Autolysis
Pinniped	M431/16	<i>Halichoerus grypus</i>	Grey seal	17/10/2016	Fife	U	Not Examined: Not Priority
Pinniped	M433/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	18/10/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M434/16	<i>Mysticete (indeterminate species)</i>	Baleen whale (indeterminate species)	18/10/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Cetacean	M435/16	<i>Balaenoptera acutorostrata</i>	Minke whale	18/10/2016	Shetland	U	Not Examined: At Sea

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M437/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	18/10/2016	Highland	U	Not Examined: Removed by Tide
Pinniped	M436/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	19/10/2016	North Ayrshire	U	Not Examined: Insufficient Data
Pinniped	M438/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	20/10/2016	East Lothian	M	Pneumonia: Parasitic
Cetacean	M439/16	<i>Phocoena phocoena</i>	Harbour porpoise	20/10/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M440/16	<i>Balaenoptera acutorostrata</i>	Minke whale	23/10/2016	Argyll and Bute	F	Not Examined: Samples Taken
Pinniped	M458/16	<i>Halichoerus grypus</i>	Grey seal	23/10/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M459/16	<i>Halichoerus grypus</i>	Grey seal	23/10/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M460/16	<i>Halichoerus grypus</i>	Grey seal	23/10/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M441/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	24/10/2016	Aberdeenshire	U	Not Examined: Insufficient Data
Pinniped	M442/16	<i>Halichoerus grypus</i>	Grey seal	24/10/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M443/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	24/10/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Cetacean	M456/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/10/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M444/16	<i>Halichoerus grypus</i>	Grey seal	26/10/2016	City of Edinburgh	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M445/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	26/10/2016	Highland	U	Not Examined: Removed by Tide
Pinniped	M446/16	<i>Halichoerus grypus</i>	Grey seal	26/10/2016	Fife	M	Not Examined: Advanced Autolysis
Pinniped	M447/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	27/10/2016	Highland	M	Not Examined: Advanced Autolysis
Cetacean	M448/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	27/10/2016	Orkney	M	Starvation/Hypothermia
Pinniped	M449/16	<i>Halichoerus grypus</i>	Grey seal	27/10/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M450/16	<i>Halichoerus grypus</i>	Grey seal	28/10/2016	Western Isles	U	Not Examined: Not Priority
Pinniped	M451/16	<i>Halichoerus grypus</i>	Grey seal	28/10/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M452/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	28/10/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M461/16	<i>Phocoena phocoena</i>	Harbour porpoise	28/10/2016	Argyll and Bute	U	Not Examined: Samples Taken
Cetacean	M463/16	<i>Phocoena phocoena</i>	Harbour porpoise	28/10/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M453/16	<i>Halichoerus grypus</i>	Grey seal	29/10/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M454/16	<i>Halichoerus grypus</i>	Grey seal	30/10/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M455/16	<i>Halichoerus grypus</i>	Grey seal	31/10/2016	East Lothian	U	Not Examined: Advanced Autolysis
Pinniped	M457/16	<i>Halichoerus grypus</i>	Grey seal	31/10/2016	Aberdeenshire	U	Not Examined: Not Priority
Pinniped	M462/16	<i>Halichoerus grypus</i>	Grey seal	01/11/2016	Fife	U	Not Examined: Advanced Autolysis
Cetacean	M464/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	01/11/2016	Shetland	F	Pneumonia: Bacterial
Pinniped	M465/16	<i>Halichoerus grypus</i>	Grey seal	02/11/2016	Aberdeenshire	U	Not Examined: Delay in reporting
Cetacean	M466/16	<i>Balaenoptera acutorostrata</i>	Minke whale	03/11/2016	Fife	M	Not Examined: Samples Taken
Cetacean	M467/16	<i>Phocoena phocoena</i>	Harbour porpoise	03/11/2016	South Ayrshire	U	Not Examined: Advanced Autolysis
Pinniped	M482/16	<i>Halichoerus grypus</i>	Grey seal	03/11/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M483/16	<i>Halichoerus grypus</i>	Grey seal	03/11/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M468/16	<i>Halichoerus grypus</i>	Grey seal	04/11/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M469/16	<i>Halichoerus grypus</i>	Grey seal	04/11/2016	Western Isles	U	Not Examined: Not Priority
Pinniped	M470/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	04/11/2016	Argyll and Bute	F	Not Examined: Samples Taken
Pinniped	M471/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	04/11/2016	South Ayrshire	U	Not Examined: Advanced Autolysis
Pinniped	M472/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	04/11/2016	Moray	U	Not Examined: Insufficient Data
Pinniped	M473/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	04/11/2016	Fife	U	Not Examined: Insufficient Data
Pinniped	M474/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	04/11/2016	Fife	U	Not Examined: Insufficient Data

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M477/16	<i>Halichoerus grypus</i>	Grey seal	04/11/2016	Western Isles	U	Not Examined: Not Priority
Pinniped	M478/16	<i>Halichoerus grypus</i>	Grey seal	04/11/2016	Western Isles	U	Not Examined: Not Priority
Pinniped	M479/16	<i>Halichoerus grypus</i>	Grey seal	04/11/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M480/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	04/11/2016	Western Isles	U	Not Examined: Insufficient Data
Cetacean	M658/16	<i>Physeter macrocephalus</i>	Sperm whale	04/11/2016	Western Isles	M	Not Examined: Advanced Autolysis
Cetacean	M475/16	<i>Phocoena phocoena</i>	Harbour porpoise	05/11/2016	North Ayrshire	U	Not Examined: Carcase Incomplete/Scavenger Damage
Pinniped	M487/16	<i>Halichoerus grypus</i>	Grey seal	05/11/2016	Moray	U	Not Examined: Advanced Autolysis
Cetacean	M485/16	<i>Stenella coeruleoalba</i>	Striped dolphin	06/11/2016	Western Isles	M	Meningoencephalitis
Cetacean	M481/16	<i>Phocoena phocoena</i>	Harbour porpoise	07/11/2016	North Ayrshire	U	Not Examined: Advanced Autolysis
Pinniped	M488/16	<i>Halichoerus grypus</i>	Grey seal	08/11/2016	Moray	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M484/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	10/11/2016	Aberdeenshire	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M489/16	<i>Halichoerus grypus</i>	Grey seal	11/11/2016	Orkney	M	Not Examined: Advanced Autolysis
Cetacean	M490/16	<i>Phocoena phocoena</i>	Harbour porpoise	12/11/2016	Fife	U	Not Examined: Removed by Tide
Pinniped	M491/16	<i>Halichoerus grypus</i>	Grey seal	13/11/2016	Aberdeenshire	F	Not Examined: Removed by Tide
Pinniped	M494/16	<i>Halichoerus grypus</i>	Grey seal	13/11/2016	Fife	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M492/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	14/11/2016	North Ayrshire	M	Pneumonia: Parasitic
Pinniped	M493/16	<i>Halichoerus grypus</i>	Grey seal	15/11/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M501/16	<i>Phocoena phocoena</i>	Harbour porpoise	15/11/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Pinniped	M665/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	15/11/2016	Argyll and Bute	U	Not Examined: Delay in reporting
Cetacean	M495/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	16/11/2016	Fife	F	Live Stranding
Cetacean	M496/16	<i>Globicephala melas</i>	Long-finned pilot whale	16/11/2016	Western Isles	U	Not Examined: Carcase Incomplete/Scavenger Damage

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M497/16	<i>Halichoerus grypus</i>	Grey seal	16/11/2016	North Ayrshire	U	Not Examined: Insufficient Data
Pinniped	M498/16	<i>Halichoerus grypus</i>	Grey seal	16/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M499/16	<i>Halichoerus grypus</i>	Grey seal	16/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M500/16	<i>Halichoerus grypus</i>	Grey seal	16/11/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Pinniped	M502/16	<i>Halichoerus grypus</i>	Grey seal	17/11/2016	Western Isles	U	Not Examined: Weather/travel difficulties
Cetacean	M504/16	<i>Phocoena phocoena</i>	Harbour porpoise	17/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M505/16	<i>Halichoerus grypus</i>	Grey seal	18/11/2016	Moray	U	Not Examined: Advanced Autolysis
Pinniped	M506/16	<i>Halichoerus grypus</i>	Grey seal	18/11/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M507/16	<i>Halichoerus grypus</i>	Grey seal	18/11/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M508/16	<i>Halichoerus grypus</i>	Grey seal	18/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M509/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	18/11/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M510/16	<i>Halichoerus grypus</i>	Grey seal	18/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M511/16	<i>Halichoerus grypus</i>	Grey seal	18/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M512/16	<i>Halichoerus grypus</i>	Grey seal	18/11/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M513/16	<i>Cetacean (indeterminate species)</i>	Cetacean (indeterminate species)	19/11/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M514/16	<i>Halichoerus grypus</i>	Grey seal	19/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M515/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	19/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M516/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	19/11/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M517/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M518/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M519/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Western Isles	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M520/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	20/11/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M521/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Shetland	U	Not Examined: Advanced Autolysis
Pinniped	M527/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M528/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M529/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M530/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M531/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M532/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M664/16	<i>Halichoerus grypus</i>	Grey seal	20/11/2016	Argyll and Bute	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M522/16	<i>Phocoena phocoena</i>	Harbour porpoise	21/11/2016	Angus	M	Not Examined: Advanced Autolysis
Pinniped	M533/16	<i>Halichoerus grypus</i>	Grey seal	22/11/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M534/16	<i>Halichoerus grypus</i>	Grey seal	22/11/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M535/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	22/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M536/16	<i>Halichoerus grypus</i>	Grey seal	22/11/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M538/16	<i>Halichoerus grypus</i>	Grey seal	23/11/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M539/16	<i>Halichoerus grypus</i>	Grey seal	23/11/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M540/16	<i>Halichoerus grypus</i>	Grey seal	23/11/2016	Highland	M	Not Examined: Advanced Autolysis
Pinniped	M541/16	<i>Halichoerus grypus</i>	Grey seal	23/11/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M542/16	<i>Halichoerus grypus</i>	Grey seal	23/11/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M543/16	<i>Halichoerus grypus</i>	Grey seal	23/11/2016	Highland	U	Not Examined: Insufficient Data
Pinniped	M544/16	<i>Halichoerus grypus</i>	Grey seal	23/11/2016	Highland	U	Physical Trauma: Possible spiral

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
							"Corkscrew" Lesions
Cetacean	M545/16	<i>Balaenoptera acutorostrata</i>	Minke whale	23/11/2016	Highland	F	Not Examined: At Sea
Pinniped	M546/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	23/11/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M547/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	23/11/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M548/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	23/11/2016	Western Isles	U	Not Examined: Insufficient Data
Cetacean	M549/16	<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	23/11/2016	Orkney	M	Not Examined: Advanced Autolysis
Pinniped	M550/16	<i>Halichoerus grypus</i>	Grey seal	24/11/2016	East Lothian	U	Not Examined: Advanced Autolysis
Pinniped	M551/16	<i>Halichoerus grypus</i>	Grey seal	24/11/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M552/16	<i>Halichoerus grypus</i>	Grey seal	24/11/2016	City of Edinburgh	U	Not Examined: Advanced Autolysis
Cetacean	M553/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	24/11/2016	Highland	F	Not Examined: Removed by Tide
Cetacean	M554/16	<i>Phocoena phocoena</i>	Harbour porpoise	24/11/2016	Shetland	M	Not Examined: Samples Taken
Cetacean	M555/16	<i>Delphinus delphis</i>	Short-beaked common dolphin	26/11/2016	Highland	F	Live Stranding
Cetacean	M556/16	<i>Phocoena phocoena</i>	Harbour porpoise	26/11/2016	Aberdeenshire	M	Not Examined: Removed by Tide
Cetacean	M557/16	<i>Phocoena phocoena</i>	Harbour porpoise	26/11/2016	Argyll and Bute	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M558/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	26/11/2016	Moray	M	Physical Trauma: Shot (Known)
Cetacean	M559/16	<i>Phocoena phocoena</i>	Harbour porpoise	26/11/2016	Fife	F	Physical Trauma: Likely Grey seal predation
Cetacean	M560/16	<i>Phocoena phocoena</i>	Harbour porpoise	27/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M561/16	<i>Phocoena phocoena</i>	Harbour porpoise	28/11/2016	Orkney	F	Physical Trauma: Likely Grey seal predation

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M562/16	<i>Halichoerus grypus</i>	Grey seal	28/11/2016	Aberdeenshire	U	Not Examined: Advanced Autolysis
Pinniped	M563/16	<i>Halichoerus grypus</i>	Grey seal	29/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M564/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	29/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M566/16	<i>Halichoerus grypus</i>	Grey seal	29/11/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M565/16	<i>Mesoplodon bidens</i>	Sowerby's beaked whale	30/11/2016	Highland	M	Live Stranding
Pinniped	M567/16	<i>Halichoerus grypus</i>	Grey seal	30/11/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M568/16	<i>Halichoerus grypus</i>	Grey seal	30/11/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M569/16	<i>Halichoerus grypus</i>	Grey seal	30/11/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M570/16	<i>Halichoerus grypus</i>	Grey seal	30/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M571/16	<i>Halichoerus grypus</i>	Grey seal	30/11/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M573/16	<i>Phocoena phocoena</i>	Harbour porpoise	30/11/2016	Highland	U	Not Examined: Removed by Tide
Cetacean	M663/16	<i>Phocoena phocoena</i>	Harbour porpoise	30/11/2016	Western Isles	U	Not Examined: Delay in reporting
Cetacean	M572/16	<i>Kogia breviceps</i>	Pygmy sperm whale	01/12/2016	Highland	M	Live Stranding
Pinniped	M574/16	<i>Halichoerus grypus</i>	Grey seal	01/12/2016	Highland	U	Not Examined: Not Priority
Pinniped	M576/16	<i>Halichoerus grypus</i>	Grey seal	02/12/2016	Orkney	U	Not Examined: Removed by Tide
Cetacean	M575/16	<i>Globicephala melas</i>	Long-finned pilot whale	03/12/2016	Orkney	M	Not Examined: Samples Taken
Pinniped	M577/16	<i>Halichoerus grypus</i>	Grey seal	03/12/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M578/16	<i>Halichoerus grypus</i>	Grey seal	03/12/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M579/16	<i>Halichoerus grypus</i>	Grey seal	03/12/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M580/16	<i>Halichoerus grypus</i>	Grey seal	04/12/2016	Fife	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M581/16	<i>Halichoerus grypus</i>	Grey seal	04/12/2016	Western Isles	M	Not Examined: Advanced Autolysis
Pinniped	M582/16	<i>Halichoerus grypus</i>	Grey seal	04/12/2016	Western Isles	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M583/16	<i>Halichoerus grypus</i>	Grey seal	04/12/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M584/16	<i>Halichoerus grypus</i>	Grey seal	04/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M597/16	<i>Halichoerus grypus</i>	Grey seal	04/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M585/16	<i>Balaenoptera acutorostrata</i>	Minke whale	05/12/2016	Argyll and Bute	F	Physical Trauma: Entanglement
Pinniped	M586/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M587/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	05/12/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M589/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M589/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Moray	U	Not Examined: Advanced Autolysis
Pinniped	M590/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M591/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M592/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M593/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M594/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M595/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M596/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M600/16	<i>Balaenoptera acutorostrata</i>	Minke whale	05/12/2016	Western Isles	F	Not Examined: Advanced Autolysis
Pinniped	M666/16	<i>Halichoerus grypus</i>	Grey seal	05/12/2016	Argyll and Bute	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Cetacean	M671/16	<i>Phocoena phocoena</i>	Harbour porpoise	05/12/2016	Highland	U	Not Examined: Delay in reporting
Pinniped	M598/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	06/12/2016	Orkney	U	Not Examined: Insufficient Data

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M599/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	06/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M601/16	<i>Halichoerus grypus</i>	Grey seal	07/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M602/16	<i>Halichoerus grypus</i>	Grey seal	07/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M603/16	<i>Halichoerus grypus</i>	Grey seal	07/12/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M604/16	<i>Halichoerus grypus</i>	Grey seal	07/12/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M605/16	<i>Halichoerus grypus</i>	Grey seal	07/12/2016	Highland	U	Not Examined: Not Priority
Pinniped	M631/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	08/12/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M606/16	<i>Halichoerus grypus</i>	Grey seal	09/12/2016	Orkney	M	Not Examined: Not Priority
Pinniped	M607/16	<i>Halichoerus grypus</i>	Grey seal	09/12/2016	Orkney	F	Not Examined: Not Priority
Cetacean	M608/16	<i>Phocoena phocoena</i>	Harbour porpoise	10/12/2016	North Ayrshire	U	Not Examined: Samples Taken
Pinniped	M609/16	<i>Halichoerus grypus</i>	Grey seal	10/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M610/16	<i>Halichoerus grypus</i>	Grey seal	10/12/2016	Inverclyde	U	Not Examined: Weather/travel difficulties
Pinniped	M612/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	10/12/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M667/16	<i>Halichoerus grypus</i>	Grey seal	10/12/2016	Argyll and Bute	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M611/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	11/12/2016	Shetland	U	Not Examined: Advanced Autolysis
Pinniped	M632/16	<i>Halichoerus grypus</i>	Grey seal	11/12/2016	Western Isles	U	Not Examined: Not Priority
Pinniped	M613/16	<i>Halichoerus grypus</i>	Grey seal	12/12/2016	Aberdeenshire	M	Not Examined: Advanced Autolysis
Cetacean	M614/16	<i>Phocoena phocoena</i>	Harbour porpoise	12/12/2016	South Ayrshire	F	Gastritis and/or Enteritis
Pinniped	M615/16	<i>Halichoerus grypus</i>	Grey seal	13/12/2016	Western Isles	U	Not Examined: Advanced Autolysis
Cetacean	M616/16	<i>Phocoena phocoena</i>	Harbour porpoise	14/12/2016	Aberdeenshire	F	Live Stranding
Pinniped	M617/16	<i>Halichoerus grypus</i>	Grey seal	14/12/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M618/16	<i>Phoca vitulina</i>	Harbour seal	16/12/2016	North Ayrshire	U	Pending

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
			(Common seal)				
Cetacean	M619/16	<i>Phocoena phocoena</i>	Harbour porpoise	16/12/2016	Western Isles	M	Not Examined: Removed by Tide
Pinniped	M628/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	16/12/2016	Highland	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M620/16	<i>Halichoerus grypus</i>	Grey seal	17/12/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M625/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	17/12/2016	Shetland	U	Not Examined: Advanced Autolysis
Pinniped	M644/16	<i>Halichoerus grypus</i>	Grey seal	17/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M621/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	18/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M622/16	<i>Halichoerus grypus</i>	Grey seal	18/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M623/16	<i>Halichoerus grypus</i>	Grey seal	18/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M624/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	18/12/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M626/16	<i>Halichoerus grypus</i>	Grey seal	18/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M627/16	<i>Halichoerus grypus</i>	Grey seal	18/12/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M629/16	<i>Halichoerus grypus</i>	Grey seal	18/12/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M633/16	<i>Halichoerus grypus</i>	Grey seal	19/12/2016	Highland	M	Not Examined: Advanced Autolysis
Pinniped	M643/16	<i>Halichoerus grypus</i>	Grey seal	19/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M669/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	20/12/2016	Western Isles	U	Not Examined: Delay in reporting
Pinniped	M634/16	<i>Halichoerus grypus</i>	Grey seal	22/12/2016	Orkney	U	Not Examined: Not Priority
Cetacean	M636/16	<i>Odontocete (indeterminate species)</i>	Dolphin (indeterminate species)	24/12/2016	Western Isles	U	Not Examined: Insufficient Data
Pinniped	M656/16	<i>Halichoerus grypus</i>	Grey seal	25/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Pinniped	M657/16	<i>Halichoerus grypus</i>	Grey seal	25/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M467/16	<i>Phocoena phocoena</i>	Harbour porpoise	27/12/2016	Dumfries and Galloway	U	Physical Trauma: Possible spiral "Corkscrew" Lesions

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Cetacean	M637/16	<i>Phocoena phocoena</i>	Harbour porpoise	27/12/2016	Argyll and Bute	M	Not Examined: Advanced Autolysis
Pinniped	M638/16	<i>Halichoerus grypus</i>	Grey seal	27/12/2016	Orkney	U	Not Examined: Advanced Autolysis
Cetacean	M647/16	<i>Phocoena phocoena</i>	Harbour porpoise	27/12/2016	Dumfries and Galloway	U	Not Examined: Delay in reporting
Cetacean	M648/16	<i>Globicephala melas</i>	Long-finned pilot whale	27/12/2016	Argyll and Bute	U	Not Examined: Morphometrics Taken
Cetacean	M655/16	<i>Phocoena phocoena</i>	Harbour porpoise	27/12/2016	Argyll and Bute	U	Not Examined: Advanced Autolysis
Pinniped	M642/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	28/12/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M670/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	28/12/2016	Highland	U	Not Examined: Delay in reporting
Pinniped	M639/16	<i>Halichoerus grypus</i>	Grey seal	29/12/2016	Orkney	U	Not Examined: Not Priority
Pinniped	M640/16	<i>Halichoerus grypus</i>	Grey seal	29/12/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M641/16	<i>Halichoerus grypus</i>	Grey seal	29/12/2016	Dumfries and Galloway	U	Not Examined: Not Priority
Pinniped	M649/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	29/12/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M659/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	29/12/2016	Orkney	U	Not Examined: Insufficient Data
Pinniped	M659/16	<i>Halichoerus grypus</i>	Grey seal	29/12/2016	Orkney	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M660/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	29/12/2016	Orkney	U	Not Examined: Insufficient Data
Pinniped	M660/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	29/12/2016	Orkney	U	Not Examined: Delay in reporting
Pinniped	M661/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	29/12/2016	Orkney	U	Not Examined: Insufficient Data
Pinniped	M661/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	29/12/2016	Orkney	U	Not Examined: Delay in reporting
Pinniped	M662/16	<i>Halichoerus grypus</i>	Grey seal	29/12/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis

Class	Ref	Species (scientific)	Species (common)	Date Found	Local Authority	Sex	Findings summary
Pinniped	M662/16	<i>Halichoerus grypus</i>	Grey seal	29/12/2016	Dumfries and Galloway	U	Not Examined: Delay in reporting
Pinniped	M668/16	<i>Phoca vitulina</i>	Harbour seal (Common seal)	29/12/2016	Orkney	U	Not Examined: Delay in reporting
Pinniped	M651/16	<i>Halichoerus grypus</i>	Grey seal	30/12/2016	Dumfries and Galloway	U	Not Examined: Advanced Autolysis
Pinniped	M645/16	<i>Halichoerus grypus</i>	Grey seal	31/12/2016	Highland	U	Not Examined: Advanced Autolysis
Pinniped	M646/16	<i>Halichoerus grypus</i>	Grey seal	31/12/2016	Highland	U	Not Examined: Advanced Autolysis
Cetacean	M650/16	<i>Balaenoptera acutorostrata</i>	Minke whale	31/12/2016	Fife	U	Not Examined: Advanced Autolysis
Pinniped	M652/16	<i>Halichoerus grypus</i>	Grey seal	31/12/2016	Western Isles	U	Physical Trauma: Possible spiral "Corkscrew" Lesions
Pinniped	M653/16	<i>Pinniped (indeterminate species)</i>	Seal (indeterminate species)	31/12/2016	Western Isles	U	Not Examined: Advanced Autolysis
Pinniped	M654/16	<i>Halichoerus grypus</i>	Grey seal	31/12/2016	Western Isles	U	Not Examined: Advanced Autolysis