Scottish Marine Animal Stranding Scheme

# Annual Report 2015

## 1 January to 31 December 2015

## for Marine Scotland, Scottish Government

M407/15 Cuvier's beaked whale, Harrapool, Skye, December 2015

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## Contents

## Section 1: Executive Summary

From the 1st January to 31st December 2015, 511 reports of 527 marine animals were reported to the Scottish Marine Animal Stranding Scheme (SMASS), comprising 306 seals, 216 cetaceans, three basking sharks and two marine turtles. Of these, 66 cases (12.5%), 46 cetaceans, 19 seals and one turtle were necropsied to establish a cause of death. A further 34 (6.5%) animals comprising 31 cetaceans, two 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. 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. There were six mass stranding events (MSE): two striped dolphins (*Stenella coeruleoalba*) in January, two long-finned pilot whales (*Globicephala melas*)in July, a large MSE involving 21 long-finned pilot whales on Skye at the beginning of June, and three events each involving two short-beaked common dolphins (*Delphinus delphis*); in January, August and November. Seals exhibiting spiral "corkscrew" lesions continue to be reported with 40 cases, mainly from Orkney and Highland during this period. The majority were grey seal weaners (*Halichoerus grypus*) reported in the winter months. Two harbour porpoise (*Phocoena phocoena*) were found with lesions consistent with predation due to grey seal attack, one in March and one in May. The volunteer network has continued to expand with three regions being targeted during 2015: Orkney, Thurso and the north coast and Ayrshire. Courses were run in each of these areas bringing the number of trained volunteers to 95 by the end of 2015. 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; MSE involving 21 long-finned pilot whales, a sub-adult female Humpback whale (*Megaptera novaeangliae*) that became entangled in creel lines off Helmsdale. A sub-adult female long-finned pilot whale that live stranded and was euthanised at Dunvegan (Skye) in October showed clear evidence of violent interactions with bottlenose dolphins. Of other media interest was the final publication of the investigation into potential causal factors of the 2011 long-finned pilot whales MSE at the Kyle of Durness.

### 1.1 *Project overview*

The principal requirement of this project is to provide a co-ordinated approach to surveillance of marine species (e.g. cetacean and seal) strandings and to investigate major causes of death of stranded marine mammals in 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 *Details of work*

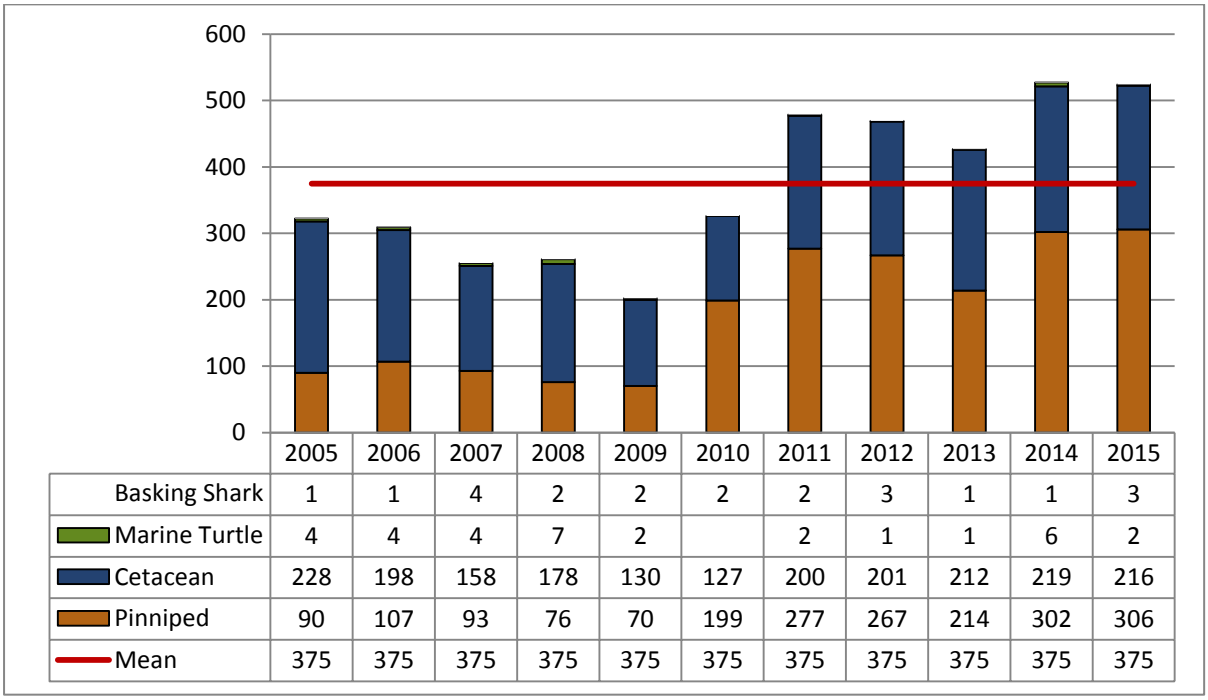
- To continue to collate, analyse and report data for all cetacean, seal, basking shark and marine turtle strandings across the Scottish coast. This will include determination of cause of death and surveillance of the incidence of disease.
- To undertake approximately 70 post mortems on cetaceans and seals stranded around the Scottish coast (approx. 20-30 cetaceans and 40-50 seals). A wide geographical spread of post mortems should be achieved unless specified otherwise.
- To provide an overall Scottish sample of both species of seal, including areas of harbour seal decline, to determine cause of death and any potential contributing factors.
- Contribute to the production of strandings training material and workshop events and raise awareness through publicity.
- Standardise the current protocols for necropsies where appropriate.
- Review any papers compiled using samples or data provided from the scheme as a means of quality control.
- 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.
- Continue to expand and maintain a Scotland-wide volunteer network to assist with identification, triage and possible measurement and sampling of cases reported to the stranding scheme and include a range of individuals and organisations. This should allow for improved depth, accuracy and efficiency in the information recoverable from strandings.
- Continue to provide 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.
- To investigate specific cases of strandings/causes of death as requested by Marine Scotland.
- 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.
- To maintain a Scottish database for seal strandings, which brings together accurate and geo-referenced data on both strandings and necropsy information. 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).

- Ongoing review of techniques used to determine the causes of death aimed at improving their accuracy, efficiency and cost-effectiveness.
- Review options for developing an online, secure searchable archive for data derived from the necropsies and ancillary tests.
- Maintain a public-facing website to provide relevant information about reported cases back to the public to maintain interest, and act as a knowledge exchange medium.

# Section 2: Strandings

## 2.1 *Strandings overview*

From 1st January to 31st December 2015, 511 reports comprising 527 marine animals were reported to the Scottish Marine Animal Stranding Scheme (SMASS) consisting of 306 seals, 216 cetaceans, three basking sharks and two marine turtles (Table 1). Of these, 66 cases (12.5%) 46 cetaceans, 19 seals and one turtle were necropsied to establish a cause of death. A further 34 (6.5%) animals comprising 31 cetaceans, two seals and one basking shark were sampled by trained volunteers. In the cases not necropsied, advanced autolysis or logistical constraints were the most common reasons precluding further examination. Figure 1 presents the total number of strandings reported to SMASS since 2005 and shows that, like in 2014 when 528 animals were reported, 2015 had a higher number of animals reported than the previous years. Figure 2 shows the breakdown of strandings by subclass for 2015. Figure 3 shows the number of strandings by month since 2011.

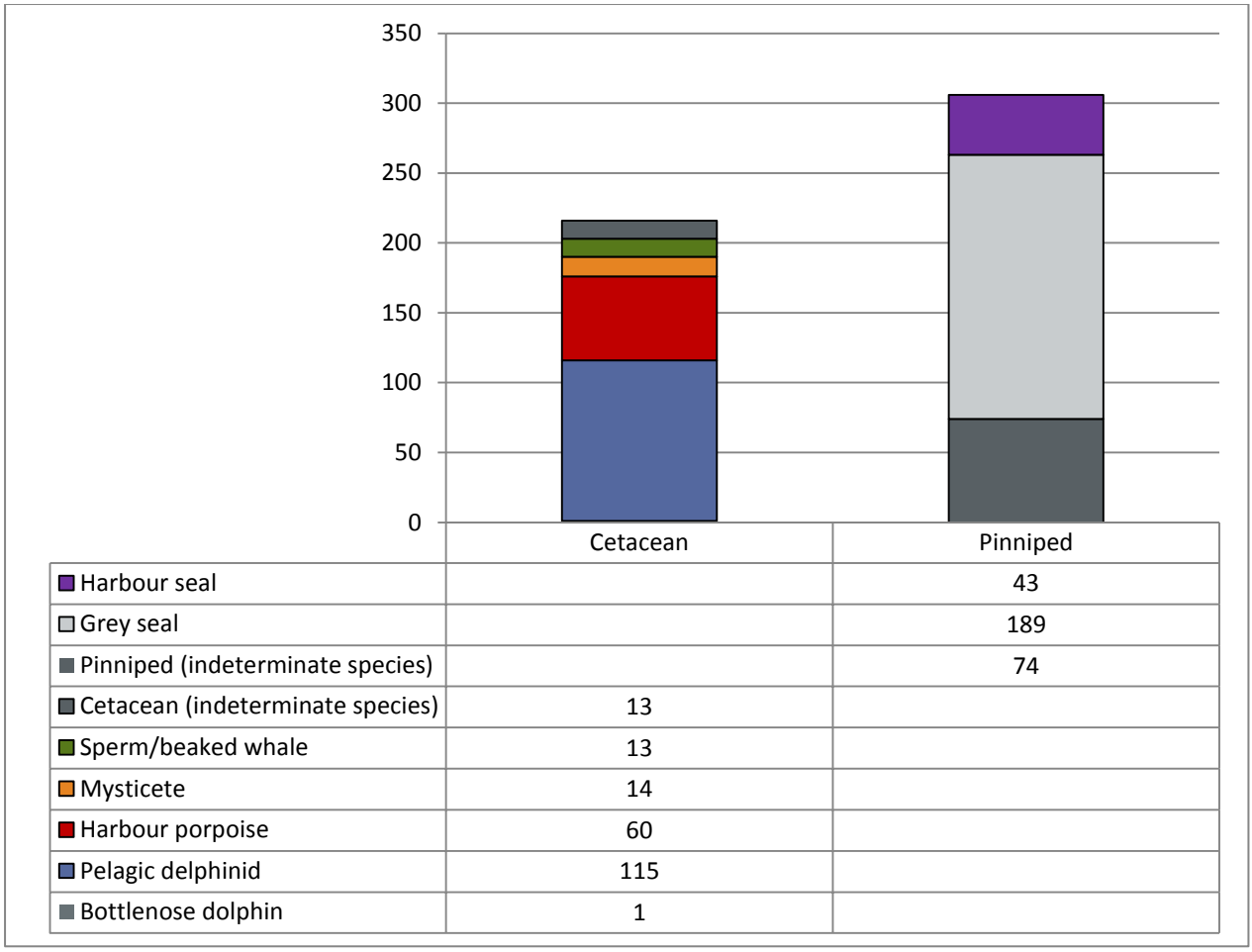



| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Basking Shark | 1 | 1 | 4 | 2 | 2 | 2 | 2 | 3 | 1 | 1 | 3 |
| Marine Turtle | 4 | 4 | 4 | 7 | 2 | | 2 | 1 | 1 | 6 | 2 |
| Cetacean | 228 | 198 | 158 | 178 | 130 | 127 | 200 | 201 | 212 | 219 | 216 |
| Pinniped | 90 | 107 | 93 | 76 | 70 | 199 | 277 | 267 | 214 | 302 | 306 |
| Mean | 375 | 375 | 375 | 375 | 375 | 375 | 375 | 375 | 375 | 375 | 375 |

**Figure 1: Total number of strandings reported 2005-2015. Red line shows the mean number of strandings over this period**

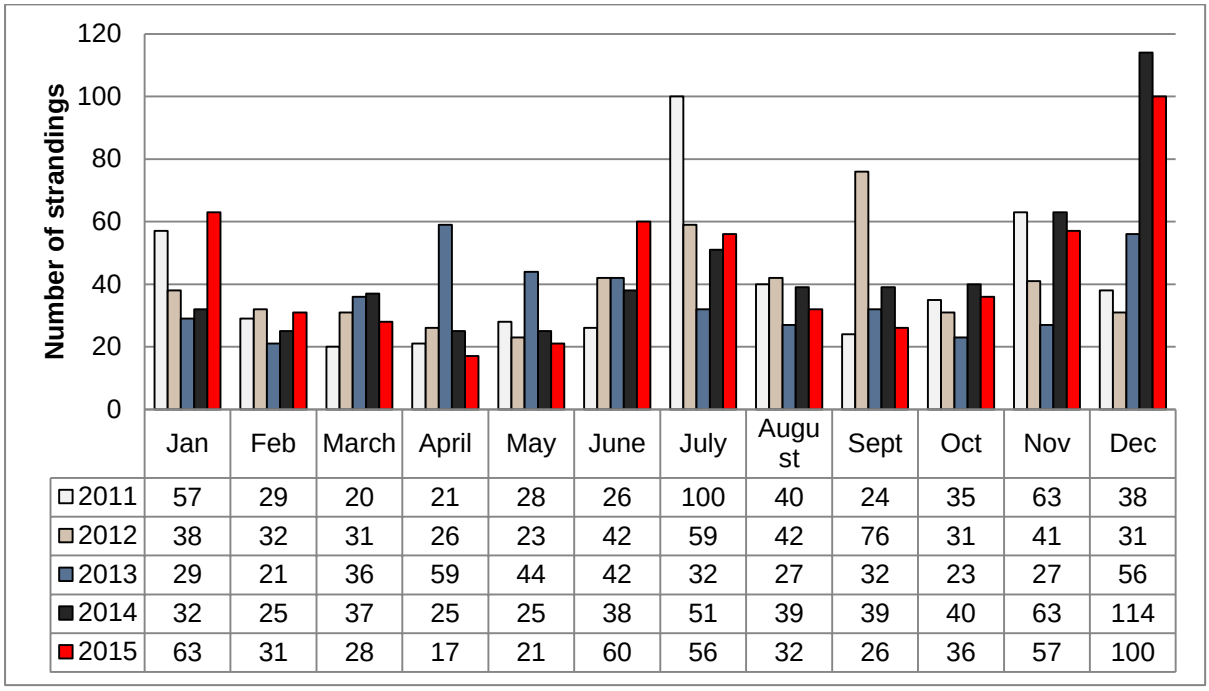
Table 1: Summary of stranded animals 2015

| Species | Sent for Necropsy | Sampled | Not Examined | Total |
|---|---|---|---|---|
| **Cetaceans** | | | | **216** |
| Atlantic white-sided dolphin (*Lagenorhynchus acutus*) | | | 2 | **2** |
| Bottlenose dolphin (*Tursiops truncatus*) | | | 1 | **1** |
| Cuvier's beaked whale (*Ziphius cavirostris*) | 1 | 1 | 4 | **6** |
| Harbour porpoise (*Phocoena phocoena*) | 13 | 5 | 42 | **60** |
| Humpback whale (*Megaptera novaeangliae*) | 1 | | | **1** |
| Killer whale (*Orcinus orca*) | | 1 | 1 | **2** |
| Long-finned pilot whale (*Globicephala melas*) | 11 | 5 | 29 | **45** |
| Minke whale (*Balaenoptera acutorostrata*) | 4 | 2 | 6 | **12** |
| Risso's dolphin *(Grampus griseus*) | 2 | 1 | 4 | **7** |
| Short-beaked common dolphin (*Delphinus delphis*) | 6 | 7 | 21 | **34** |
| Sowerby's beaked whale (*Mesoplodon bidens*) | 1 | | 1 | **2** |
| Sperm whale (*Physeter Macrocephalus)* | | 2 | 3 | **5** |
| Striped dolphin (*Stenella coeruleoalba*) | 4 | 1 | 6 | **11** |
| White-beaked dolphin (*Lagenorhynchus albirostris*) | 3 | 5 | 4 | **12** |
| Cetacean (indeterminate species) | | 1 | 16 | **17** |
| **Pinnipeds** | | | | **306** |
| Grey seal (*Halichoerus grypus*) | 10 | 3 | 176 | **189** |
| Harbour seal (*Phoca vitulina*) | 9 | | 34 | **43** |
| Seal (indeterminate species) | | | 74 | **74** |
| **Marine Turtle & Basking Shark** | | | | **5** |
| Basking shark (*Cetorhinus maximus*) | | 2 | 1 | **3** |
| Kemps Ridley turtle (*Lepidochelys kempii*) | | | 1 | **1** |
| Loggerhead turtle (*Caretta caretta*) | 1 | | | **1** |
| **GRAND TOTAL** | **66** | **36** | **425** | **527** |



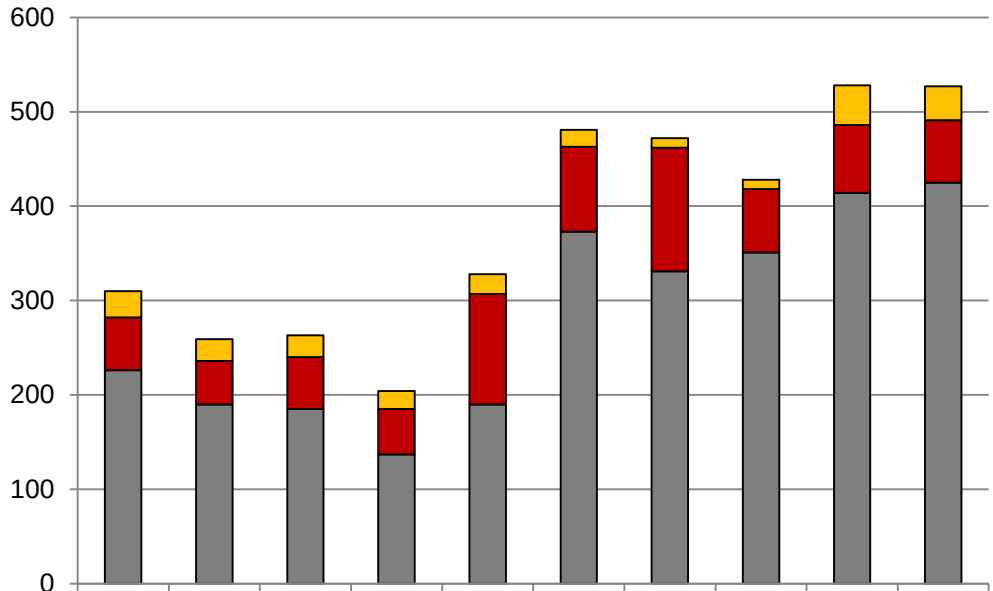

| | Cetacean | Pinniped |
|---|---|---|
| Harbour seal | | 43 |
| Grey seal | | 189 |
| Pinniped (indeterminate species) | | 74 |
| Cetacean (indeterminate species) | 13 | |
| Sperm/beaked whale | 13 | |
| Mysticete | 14 | |
| Harbour porpoise | 60 | |
| Pelagic delphinid | 115 | |
| Bottlenose dolphin | 1 | |

Figure 2: Total number of species reported in 2015, by subclass




| | Jan | Feb | March | April | May | June | July | August | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 | 57 | 29 | 20 | 21 | 28 | 26 | 100 | 40 | 24 | 35 | 63 | 38 |
| 2012 | 38 | 32 | 31 | 26 | 23 | 42 | 59 | 42 | 76 | 31 | 41 | 31 |
| 2013 | 29 | 21 | 36 | 59 | 44 | 42 | 32 | 27 | 32 | 23 | 27 | 56 |
| 2014 | 32 | 25 | 37 | 25 | 25 | 38 | 51 | 39 | 39 | 40 | 63 | 114 |
| 2015 | 63 | 31 | 28 | 17 | 21 | 60 | 56 | 32 | 26 | 36 | 57 | 100 |

Figure 3: Total number of cases all species by month for 2011 - 2015




| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampled | 28 | 23 | 23 | 19 | 21 | 18 | 10 | 10 | 42 | 36 |
| Necropsied | 56 | 46 | 55 | 48 | 117 | 90 | 131 | 67 | 72 | 66 |
| Not necropsied | 226 | 190 | 185 | 137 | 190 | 373 | 331 | 351 | 414 | 425 |

**Figure 4: Cases necropsied and sampled 2006-2015**

Figure 4 shows the number of cases necropsied, sampled, and not necropsied respectively during 2015. Cases may be unsuitable for collection for a number of factors, with autolysis being the most common reason. Cases which were not suitable for necropsy 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 with a bias towards eastern Scotland and Orkney (Figure 5). As in previous years, notable clusters are present around Fife, the Forth, Tay and Moray Firths and the Uists. In contrast to other years 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 island communities such as the Western Isles and Shetland. Recovery of carcases 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 is 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 2015. 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.

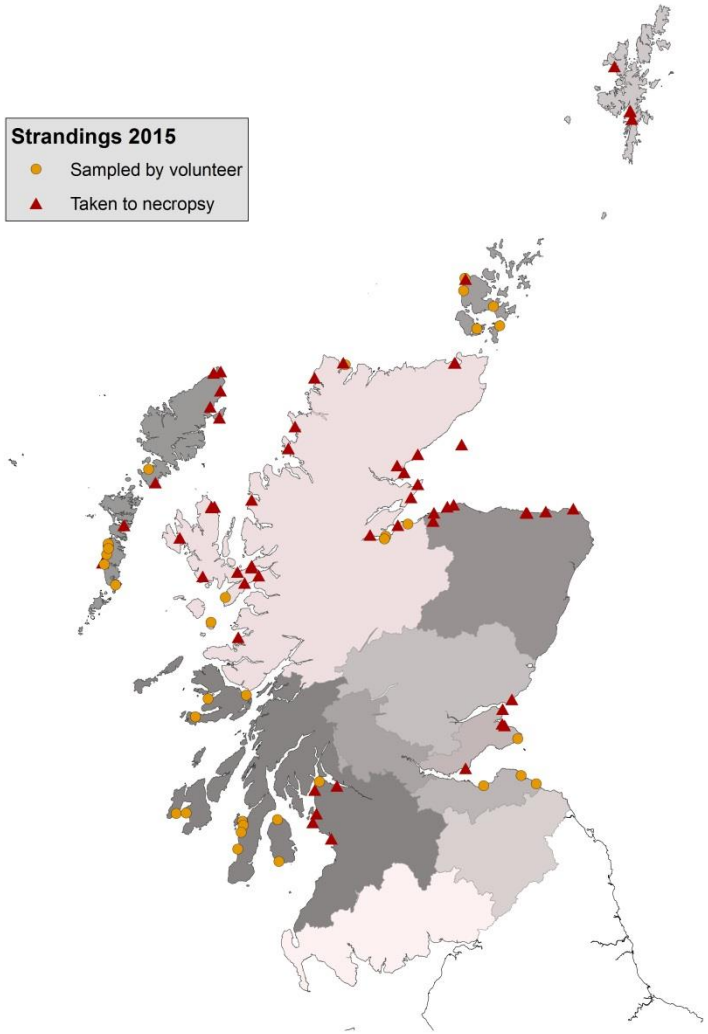



Figure 5: Strandings necropsied or sampled

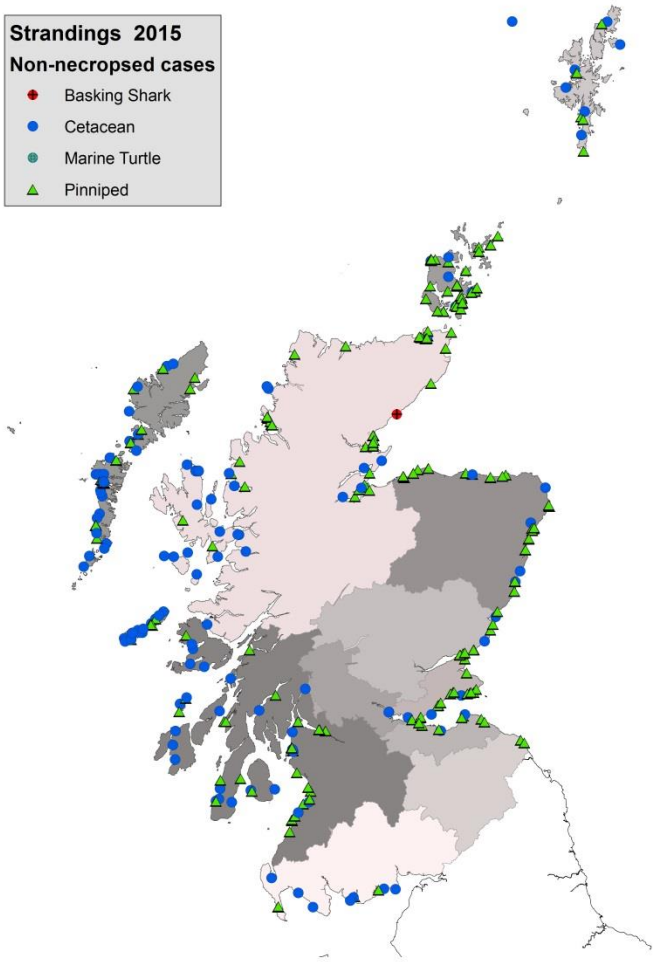



Figure 6: Strandings not necropsied or sampled

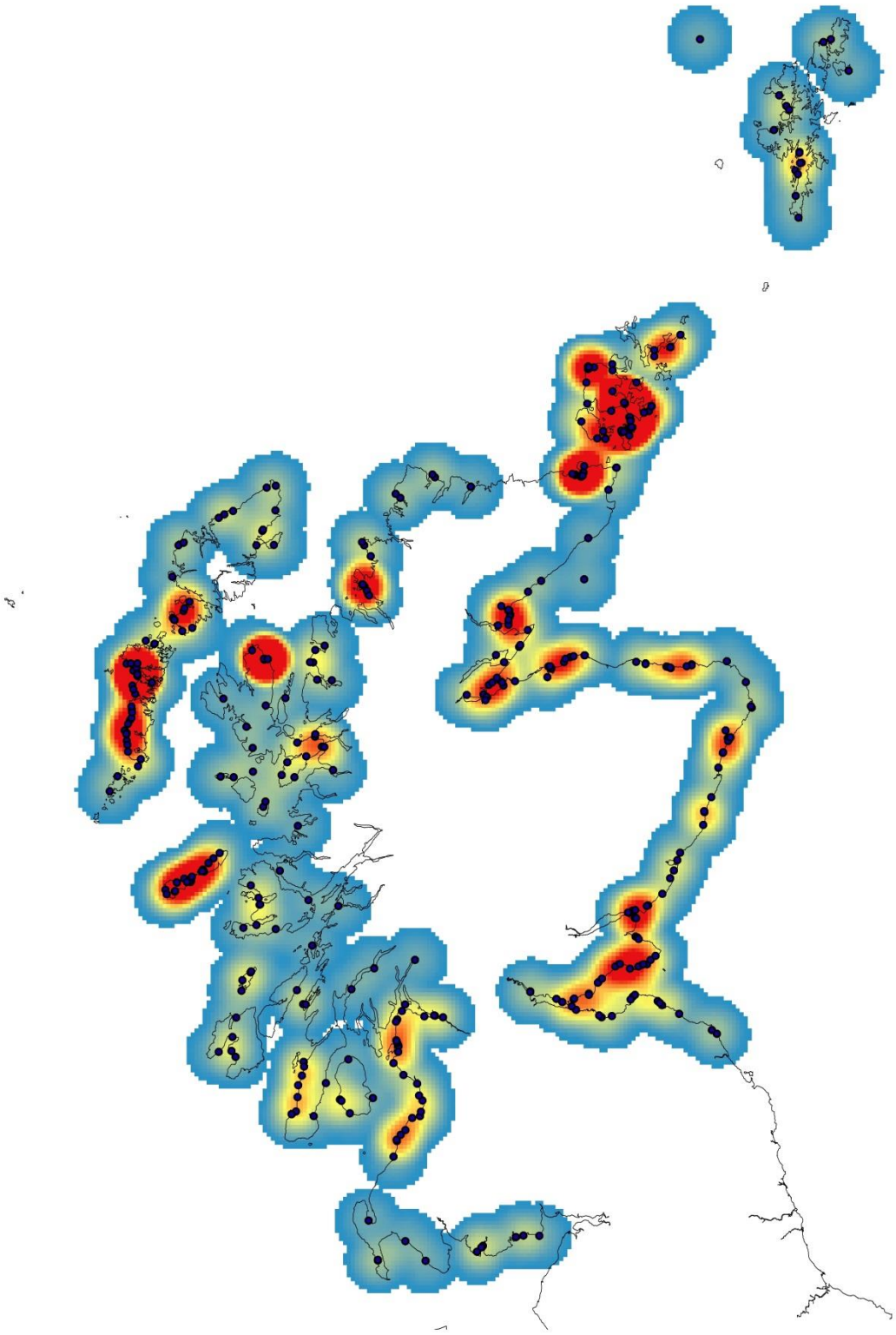


Figure 7: Kernel density plot of all strandings 2015. Colour spectrum from blue (low) to red (high)

## 2.3 *Pinniped strandings*

Three hundred and five seals were reported to SMASS in 2015 comprising of 188 grey seals (*Halichoerus grypus*), 43 harbour seals (*Phoca vitulina*) and 74 pinnipeds were too autolysed or data deficient for accurate speciation (Figure 8, Table 2). Of those reported, a large proportion (93%) 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 carcase or poor information attainable about the case. Two seal cases were additionally sampled by volunteers.

Nineteen animals (6.3%) were recovered for necropsy. Physical trauma was the most common finding in pinnipeds, both anthropogenic and attributable to grey seal predation. One animal was found to have a parasitic pneumonia, see section 7.

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:

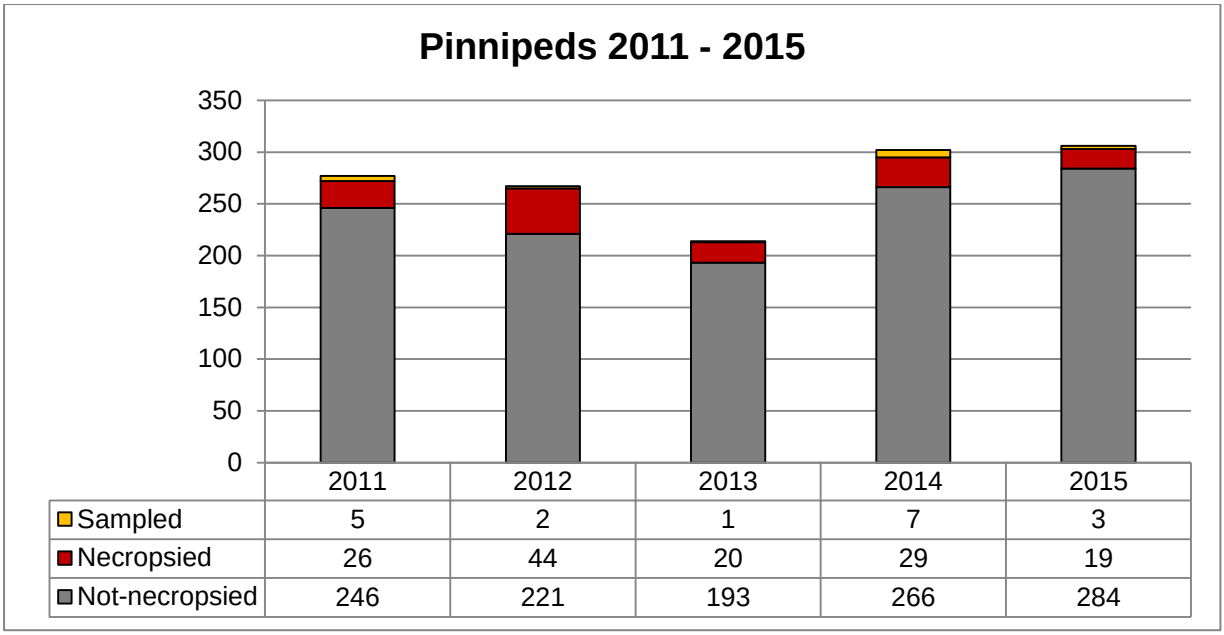
http://www.scotland.gov.uk/topics/marine/licensing/seallicensing.

### 2.3.1 'Corkscrew' or spiral trauma cases

Four (one grey and three harbour seals) were found to be definite or possible spiral trauma cases, at necropsy. An additional 34 cases (24 grey, three harbour, and seven 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

Fourteen animals were either reported as being shot, or diagnosed as such at necropsy. They consisted of one harbour and 13 grey seals Five of these animals were examined at necropsy. A further two grey and two harbour seals were reported as suspected being shot.




| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| Sampled | 5 | 2 | 1 | 7 | 3 |
| Necropsied | 26 | 44 | 20 | 29 | 19 |
| Not-necropsied | 246 | 221 | 193 | 266 | 284 |

**Figure 8: Pinniped strandings (all species) 2011-2015, separated by level of examination**

## 2.4 *Pinniped age structure*

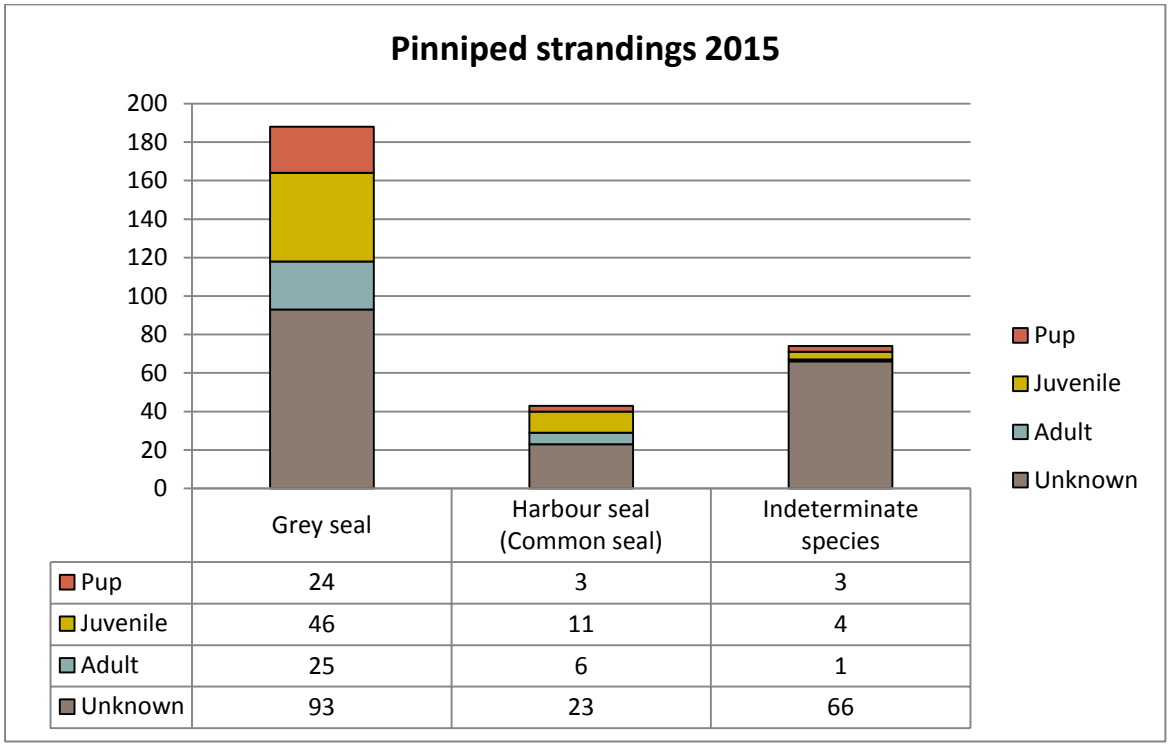
Table 2 shows the age structure of pinnipeds reported to SMASS for a 5 year period from January 2011 to December 2015. Figure 9 graphs the structure for 2015 only.

Between 2011 and 2015, there were 1365 strandings of seals, of which the age could not reliably be established in 77.9% of cases. Of those where the age could be determined, 63% were juveniles or younger and 37% were adult animals. By species, adults made up 33% of grey seals and 50% of harbour seal strandings.

In 2015 this pattern was slightly better as the age could not be established for only 60% of the 305 reported strandings. Of those where the age could be determined, 74% were juveniles or younger and 26% therefore adults. By species, adults made up 26% of grey seals and 30% of harbour seal strandings.

Table 2: Age structure of pinniped strandings 2011-15

| | Pup | Juvenile | Adult | Unknown | Grand Total |
|---|---|---|---|---|---|
| **Grey seal** | 43 | 99 | 71 | 474 | **687** |
| **Harbour seal (Common seal)** | 11 | 28 | 39 | 152 | **230** |
| **Bearded seal** | | 1 | | | **1** |
| **Hooded seal** | | | | 2 | **2** |
| **Seal (indeterminate species)** | 4 | 5 | 1 | 435 | **445** |
| **Grand Total** | **58** | **133** | **111** | **1063** | **1365** |




| | Grey seal | Harbour seal (Common seal) | Indeterminate species |
|---|---|---|---|
| Pup | 24 | 3 | 3 |
| Juvenile | 46 | 11 | 4 |
| Adult | 25 | 6 | 1 |
| Unknown | 93 | 23 | 66 |

Figure 9:- Age structure of pinniped strandings 2015, by age group and species

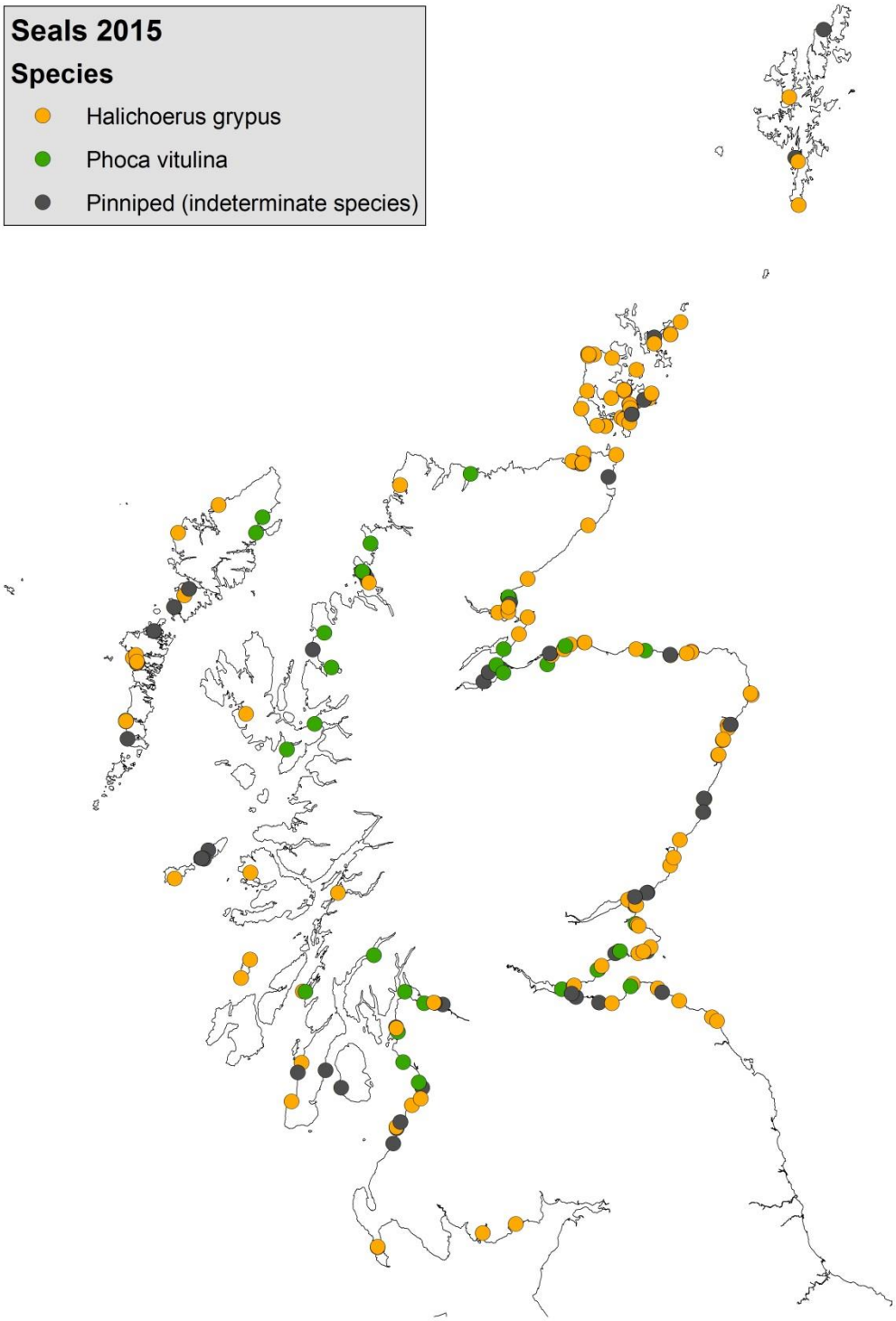
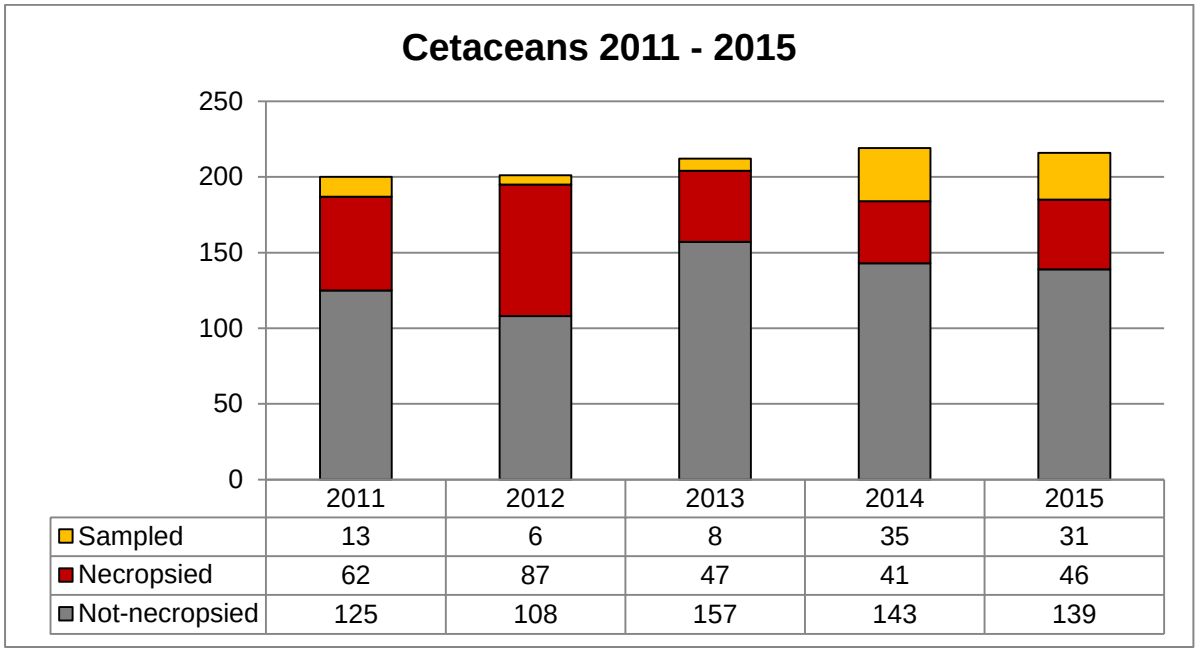



Figure 10: Pinniped strandings 2015

## 2.5 *Cetacean strandings*

Two hundred and sixteen cetaceans comprising of 14 different species were reported to SMASS in 2015. The most frequently reported species was the harbour porpoise (n=60, 28%). Long-finned pilot whales (n=45, 21%) were the second most commonly reported, largely due to a part of a mass stranding event (MSE) on Skye (see section 4). Short-beaked common dolphins comprised 34 strandings (16%) and white-beaked dolphins and minke whales both accounted for 12 cases (5.5%). Only 16 (7.4%) animals were reported that could not be identified to a species level. This is a great 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 nine species all of which, with the exception of striped dolphin (n=11, 5%) were single figure strandings, Risso's dolphin (n=7, 3%), Cuvier's beaked whale (n=6, 2.7%) and sperm whale (n=5, 2.3%) were the most common. The remaining species were in descending order: Atlantic white-sided dolphin (n=2, 0.9%), killer whale (n=2, 0.9%), Sowerby's beaked whale (n=2, 0.9%) bottlenose dolphin (n=1, 0.4%), and humpback whale (n=1, 0.4%).

Of the 216 animals, 46 (21%) cases were necropsied. This was an increase in numbers compared to 2014 (Figure 11), however this is in part due to the mass stranding event. Of those animals that were not necropsied 31 (14%) were sampled by volunteers. Figure 12 shows the spatial distribution (excluding harbour porpoise) of cetaceans for 2015.




| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| Sampled | 13 | 6 | 8 | 35 | 31 |
| Necropsied | 62 | 87 | 47 | 41 | 46 |
| Not-necropsied | 125 | 108 | 157 | 143 | 139 |

**Figure 11: Cetacean strandings 2011-2015, all species**

Thirteen harbour porpoise were subjected to necropsy and the most common cause of death was found to be bottlenose dolphin attack (23%), a slight decrease than in 2014. As in previous years, the most common cause of death for other cetaceans was live stranding (65.3%). 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 2015. An overview of the findings/cause of death of all cetaceans necropsied, sampled and not necropsied in 2015 can be found in tables 3 and 4 in Section 3 of this report.

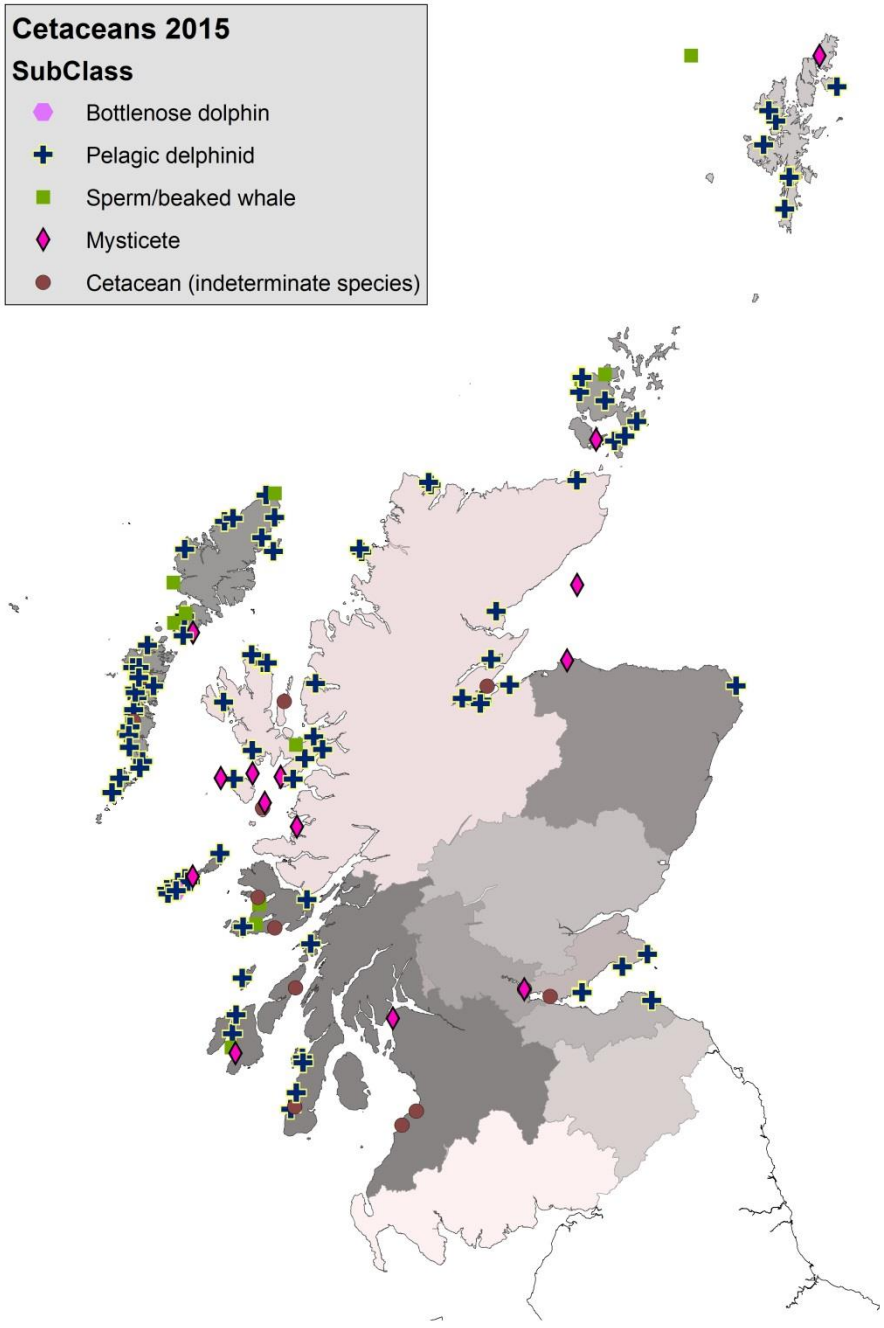



**Figure 12: All cetacean strandings excluding harbour porpoise 2015**

## 2.6 *Harbour porpoise strandings 2015*

The number of harbour porpoise strandings (n=60) showed a 40% drop in 2015. This comprises of 28% of the total cetacean strandings in 2015, compared to nearly half the reported strandings in 2014. 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, possibly 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.

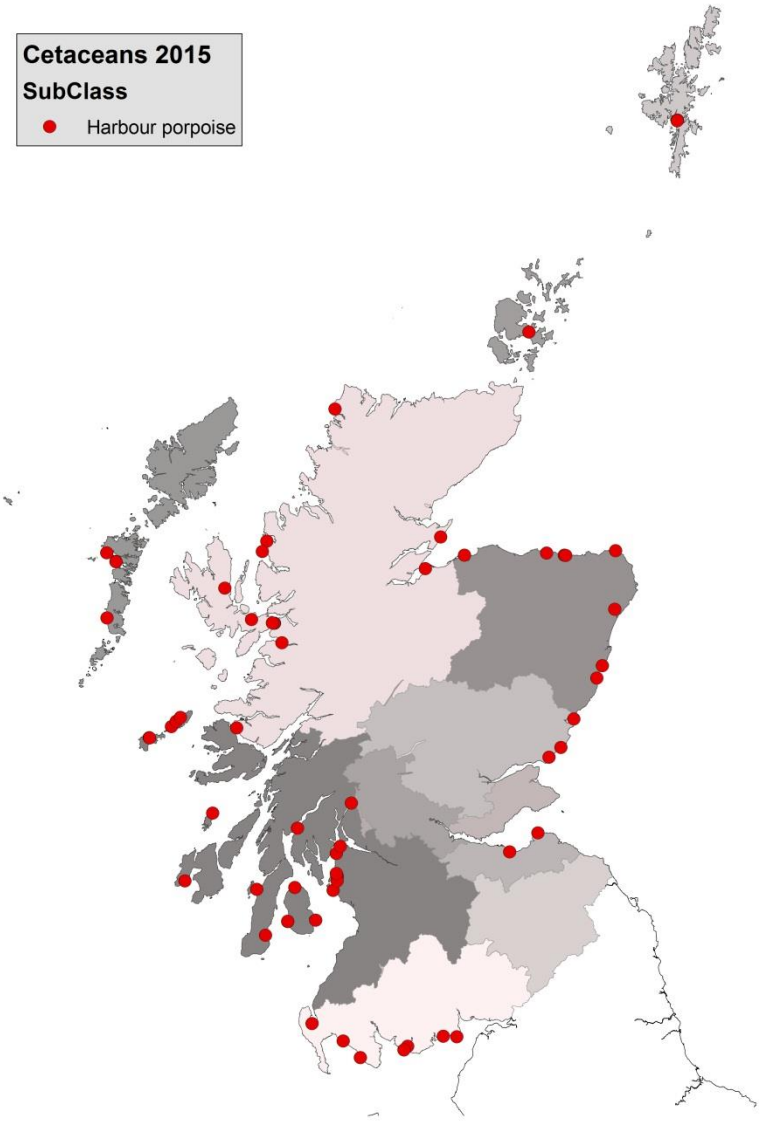



Figure 13: Spatial distribution of Harbour porpoise strandings 2015

## Section 3: Cause of death/findings summary tables

Table 3: Cause of death/findings for cetaceans reported 2015

| | | Total Necropsied | Gastritis and/or Enteritis | Generalised Bacterial Infection | Live Stranding | Live Stranding: Unsuccessful refloat | Physical Trauma: Bycatch | Physical Trauma: BND Attack | Physical Trauma: Entanglement | Physical Trauma: Entanglement (Known) | Physical Trauma: Grey Seal Attack | Physical Trauma: Shot (Known) | Starvation/Hypothermia | Maternal Separation/Starvation | Dystocia/Stillborn | Meningoencephalitis | Neoplasia | Other | Total Sampled | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bottlenose dolphin | | | | | | | | | | | | | | | | | | | | 0 |
| Harbour porpoise | | 13 | | | | 1 | 3 | | | 2 | | 1 | 1 | 3 | | | 1 | 1 | 5 | 18 |
| Mysticete | Humpback whale | 1 | | | | | | | 1 | | | | | | | | | | | 1 |
| | Minke whale | 4 | 1 | | | | | 2 | 1 | | | | | | | | | | 2 | 6 |
| Pelagic delphinid | Atlantic white-sided dolphin | | | | | | | | | | | | | | | | | | | 0 |
| | Killer whale | | | | | | | | | | | | | | | | | | 1 | 1 |
| | Long-finned pilot whale | 11 | | | 7 | 2 | | 1 | | | | | | | 1 | | | | 5 | 16 |
| | Risso's dolphin | 2 | | | | | | | | | 1 | | | | | 1 | | | 1 | 3 |
| | Short-beaked common dolphin | 6 | | 1 | 3 | 1 | | | | | | 1 | | | | | | | 7 | 13 |
| | Striped dolphin | 4 | | | 1 | | | | | | | | | | | 3 | | | 1 | 5 |
| | White-beaked dolphin | 3 | | | 3 | | | | | | | | | | | | | | 5 | 8 |
| Sperm/beaked whale | Cuvier's beaked whale | 1 | | | 1 | | | | | | | | | | | | | | 1 | 2 |
| | Sowerby's beaked whale | 1 | | | | | | | | | | | | | | 1 | | | | 1 |
| | Sperm whale | | | | | | | | | | | | | | | | | | 2 | 2 |
| Indeterminate species | Baleen whale | | | | | | | | | | | | | | | | | | | 0 |
| | Cetacean | | | | | | | | | | | | | | | | | | | 0 |
| | Dolphin | | | | | | | | | | | | | | | | | | 1 | 1 |
| | Common/Striped dolphin | | | | | | | | | | | | | | | | | | | 0 |
| Grand Total | | 46 | 1 | 1 | 15 | 3 | 1 | 4 | 2 | 2 | 2 | 1 | 2 | 1 | 3 | 1 | 5 | 1 | 1 | 31 | 77 |

Table 4: Not examined cetaceans reported 2015

| | | Not Examined: | Live Stranding | Live Stranding: Successful refloat | Advanced Autolysis | At Sea | Carcase Incomplete | Carcase Unrecoverable | Delay in Reporting | Insufficient Data | Morphometrics Taken | Removed by Council | Removed by Tide | Logistical difficulties | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bottlenose dolphin | | | 1 | | | | | | | | | | | | 1 |
| Harbour porpoise | | | | 1 | 18 | 2 | 6 | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 42 |
| Mysticete | Humpback whale | | | | | | | | | | | | | | 0 |
| | Minke whale | | | | 4 | | 1 | | | | 1 | | | | 6 |
| Pelagic delphinid | Atlantic white-sided dolphin | | | | 1 | | | | 1 | | | | | | 2 |
| | Killer whale | | | | 1 | | | | | | | | | | 1 |
| | Long-finned pilot whale | | | 15 | 10 | | 1 | | | | 1 | | | 2 | 29 |
| | Risso's dolphin | | | | 4 | | | | | | | | | | 4 |
| | Short-beaked common dolphin | | | 3 | 9 | | 2 | | | | 3 | | | 4 | 21 |
| | Striped dolphin | | | | 2 | | 2 | | | | 1 | | | 1 | 6 |
| | White-beaked dolphin | | | | 3 | | 1 | | | | | | | | 4 |
| Sperm/beaked whale | Cuvier's beaked whale | | | | 3 | | 1 | | | | | | | | 4 |
| | Sowerby's beaked whale | | | | | | 1 | | | | | | | | 1 |
| | Sperm whale | | | | 2 | 1 | | | | | | | | | 3 |
| Indeterminate species | Baleen whale | | | | | | | | | 1 | | | | | 1 |
| | Cetacean | | | | | | 1 | | 1 | 3 | | | 1 | | 6 |
| | Dolphin | | | | 1 | | | | | | | | | | 1 |
| | Common/Striped dolphin | | | | 2 | | 4 | | | | 1 | | | | 7 |
| Grand Total | | | 1 | 19 | 60 | 3 | 20 | 1 | 5 | 7 | 8 | 1 | 4 | 10 | 139 |

Table 5: Cause of death/findings for pinnipeds, basking sharks and marine turtles reported 2015

| | Pinnipeds | | | Marine turtle | | | Grand Total |
|---|---|---|---|---|---|---|---|
| | Grey seal | Harbour seal (Common seal) | Seal (indeterminate species) | Kemp's Ridley Turtle | Loggerhead turtle | Basking shark | |
| **Necropsied** | **10** | **9** | | | **1** | | **20** |
| Pending | | | | | 1 | | 1 |
| Physical Trauma: Other | | 2 | | | | | 2 |
| Physical Trauma: Shot | 3 | | | | | | 3 |
| Physical Trauma: Shot | 1 | | | | | | 1 |
| Physical Trauma: Shot (Known) | 4 | 1 | | | | | 5 |
| Physical Trauma: Spiral "Corkscrew" Lesions | 1 | 3 | | | | | 4 |
| Physical Trauma: Other | 1 | | | | | | 1 |
| Pneumonia: Parasitic | | 2 | | | | | 2 |
| Starvation/Hypothermia | | 1 | | | | | 1 |
| **Sampled** | **3** | | | | | **2** | **5** |
| Not Examined: Samples Taken | 3 | | | | | 2 | 5 |
| **Not necropsied** | **175** | **34** | **74** | **1** | | **1** | **286** |
| Not Examined: Advanced Autolysis | 79 | 18 | 17 | | | | 114 |
| Not Examined: At Sea | | 1 | | | | | 1 |
| Not Examined: Carcase Incomplete/Scavenger Damage | 11 | 1 | 9 | | | 1 | 22 |
| Not Examined: Insufficient Data | 10 | 2 | 42 | | | | 54 |
| Not Examined: Morphometrics Taken | 8 | 3 | 1 | 1 | | | 13 |
| Not Examined: Not Priority | 28 | 2 | 2 | | | | 32 |
| Not Examined: Removed by Council | 1 | | | | | | 1 |
| Not Examined: Removed by Tide | 1 | 1 | | | | | 2 |
| Not Examined: Weather/travel difficulties | | 2 | | | | | 2 |
| Physical Trauma: Possible spiral "Corkscrew" Lesions | 29 | 2 | 3 | | | | 35 |
| Physical Trauma: Shot (Known) | 6 | | | | | | 6 |
| Physical Trauma: Shot (suspected) | 2 | 2 | | | | | 4 |
| **Grand Total** | **188** | **43** | **74** | **1** | **1** | **3** | **311** |

# Section 4: Mass stranding events (MSE's) and unusual mortality events (UME'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.

### 4.1 *M23.1- M23.2/15 Striped dolphin (Stenella coeruleoalba)*

Two badly decomposed and heavily scavenged striped dolphins were found at Earlesferry on 10 January. Unfortunately neither animal was suitable for collection for necropsy. Striped dolphins are not a particularly common stranding on the East coast with only 18 records since 1992.

**Figure 14: M23.1/15 one of the striped dolphin (*Stenella coeruleoalba*) from Earlesferry.**

### 4.2 *M32.1- M32.1/15 short-beaked common dolphin (Delphinus delphis)*

Two short-beaked common dolphins; an adult female and a juvenile male, were found dead at Grimsay, North Uist. Both were very fresh and were collected for necropsy. The adult female common dolphin (M32.1/15) was pregnant in the left horn with a normal 30cm

foetus and evidence of concurrent lactation. It is possible that the juvenile male found with this case (M32.2/15) is a maternally or socially dependent calf. There was no recent feeding and the lungs contained fluid consistent with water aspiration, indicating a period of live stranding. However there was no sand detected. The brain was grossly unremarkable. Bacteriology produced a few colonies of *Brucella ceti* from the liver and moderate growth of the same organism from the spleen; however this organism was not recovered from either the brain or the CSF. Histology showed a moderate, sub-acute, multifocal necrotising non-suppurative hepatitis and a mild, sub-acute, multifocal necrotising non-suppurative splenitis. The hepatic and splenic lesions in the dam are probably the result of the *Brucella ceti* infection and, considering the stress this pregnant and lactating animal was experiencing, would have been a significant factor in the stranding. The juvenile common dolphin (M32.2/15) had lung asymmetry suggestive of live stranding, the animal had not fed recently but the appearance of the liver, blubber and muscle did not indicate prolonged catabolism. The meninges appeared mildly thickened. The remainder of the carcase did not show any marked pathology and the animal appeared healthy and in moderate body condition. Bacteriology on the brain and visceral organs did not reveal any significant isolates. Acute live stranding is the proximal cause of death; plausibly due to being socially dependant on the female and following the older animal into shore.

**Figure 15: M32.1/15 adult female short-beaked common dolphin (*Delphinus delphis*) North Uist.**

## 4.3 *M161.1- M161.21/15 long-finned pilot whales (Globicephala melas) MSE Staffin, Isle of Skye.*

### 4.3.1 Stranding overview

On the evening of 1st June a number of long finned pilot whales were reported swimming close to shore off Brogaig beach, a 1300m crescent shaped, relatively steeply shelving, pebble and sand beach on the Trottenish peninsular of Skye (NG479687). Around high tide at

03:00h on 2nd June, 21 animals stranded in the bay. One of the animals stranded was observed to be a pregnant female in apparent distress. Medics from British Divers Marine Life Rescue (BDMLR) and members of the public managed to refloat 18 individuals of the initial stranding. Two animals died on Brogaig beach and a female animal was left stranded by the falling tide and was seen to be in respiratory distress. Palpation by local veterinarian indicated a dystocia with a dead calf in utero. Following assessment by the same veterinarian, the animal was euthanised by a trained marksman on welfare grounds. Eleven of the refloated animals appeared to restrand on the south west side of Staffin Island (NG493688) a short while later (04:30h). This added obvious logistical complications to the rescue. Assistance was provided by local wildlife tour operators and crew from Marine Scotland's vessel 'Hirta' who provided vessel support to transport BDMLR medics and volunteers onto Staffin island to provide first aid to the stranded animals. SMASS arrived on site around 12.30h. By this time there were 11 animals on Staffin Island, nine of them still alive. Two juvenile animals were dead, apparently crushed by a larger animal during the stranding process. Of the nine live animals, one was in the water being held upright by BDMLR medics and eight were fully stranded on the kelp covered rocky foreshore. Detail flowchart is given in Figure 16. The tidal range on that day was 4.1m with most animals stranded at the top of the tide cycle. SMASS assessed the health of the remaining stranded animals and the decision was made to euthanize two animals on welfare grounds. This was due to significant evidence of distress, eg prolonged elevated respiratory rate, vomiting or severe muscular spasms and hence a very poor prognosis of survival. Euthanasia was carried out by a trained marksman under direction from SMASS consisted of a single lateral shot through the cranial cortex. Death appeared to be immediate. The remaining six animals were successfully refloated from the rocks by BDMLR on the rising tide around 18:00h that evening. A single adult animal was tagged through the dorsal fin with a *Sirtrack™* satellite tag, this was unfortunately dislodged by the animal rolling over a skerry as the animal regained balance during the refloat.

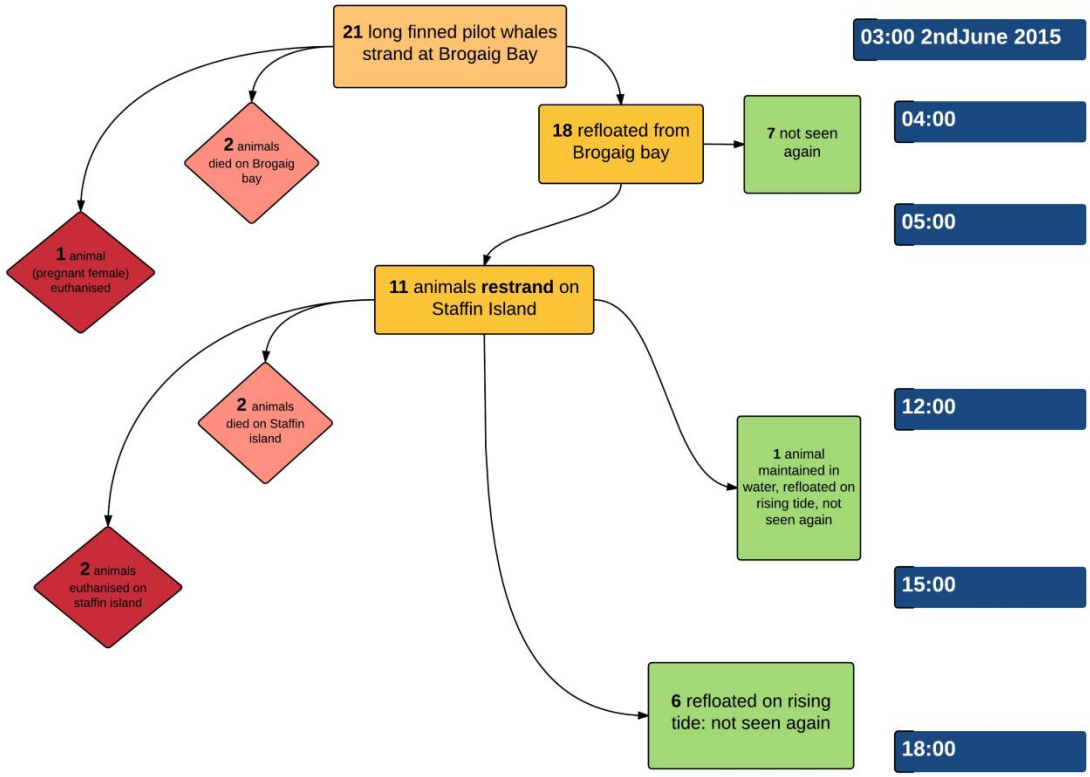



Figure 16: Flowchart of LFPW MSE

### 4.3.2 Carcase recovery and necropsy

The two dead and two euthanased animals were recovered from Staffin Island to the slipway at Garafad (NG494681) with help of the local Coastguard. One of the two animals which died as part of the first wave of strandings was also towed here from Staffin bay. Ears from this animal were removed and fixed in formol saline around 21:00h (16-18h post mortem). The carcase necropsies were performed the following day (3rd June) either on site at the Garafad slipway (5 animals) or on the beach at Brogaig (1 full necropsy and 1 sampled animal). Removal and fixation of ears and brain tissue was prioritised. The animals necropsied at the slipway were buried on site by the Highland Council the following day. Access problems precluded the carcases on Brogaig beach from being moved or plant being brought in for burial.

Gross necropsies of the animals recovered dead found pathology strongly indicative of mortality caused by the stranding process, but no significant evidence for underlying or pre-existing disease or trauma. The animal recovered from the beach (M161.1/15) exhibited fine sand and silt in the airways and throughout the bronchial tree, indicating the animal likely drowned from water aspiration in the surf line. Of interest was case M161.6/15, the euthanised pregnant female. Placenta and uterine tissues were grossly unremarkable and the foetus was full term, measuring 181cm. This is within normal range for this species and there was no evidence that the calf had died significantly before the dam. Nonetheless,

foetal presentation was abnormal, with both the head and tail presenting together and the dam exhibited a prolapsed vagina, indicating prolonged straining.

### 4.3.3 Ancillary diagnostic testing

#### 4.3.3.1 *Bacteriology*

Bacteriology was carried out in house and resulted in the isolation of *Edwardsiella tarda* from three animals, *E.coli* (both haemolytic and non-haemolytic) from three animals, *Hafnia alvei* from two animals, *Photobacterium damselae* (both haemolytic and non-haemolytic) from two animals *Serratia odorifera* from one animal, *Enterococcus faecalis* from one animal,, a *Streptococcus sp*. from one animal, an *Actinobacillus sp.* from one animal, a *Corynebacterium sp*. from one animal and *Aeromonas hydrophila* from one animal. None of these isolates are considered significant pathogens. Significantly *Brucella ceti* was not isolated from any animal.

#### 4.3.3.2 Histopathology

Histopathological examination was carried out by the Moredun Research Institute (MRI) on samples from all 6 necropsied animals.

Gastric parasitism was found in two animals involving the fluke *Pholeter gastrophilus.* Verminous pneumonia was found in three animals and was more acute in the younger animals however it is assumed most juveniles exhibit a significant lung parasite phase prior to mounting a competent immune response to mitigate the parasitism. Verminous mastitis was found in four animals and the parasitism did not appear to have significantly impacted on the health of animals which were in good nutritional condition. Myocyte degeneration and congestion was found in the skeletal muscles of all the animals examined and is consistent with a live-stranding as is the fatty degeneration of the centrilobular hepatocytes, as these cells are sensitive to hypoxia or nutritional deficit. The increased severity of the degeneration in the dorsal muscle compared to the ventral muscle in M161.1/15 was unexpected. This may indicate hyperthermia is more problematic than pressure with respect to per-acute necrosis in these muscles.

M161.6/15 - the animal euthanised whilst trying to give birth showed a severe, sub-acute, generalised hepatic lipidosis and a severe, chronic, focal uterine abscessation. The fatty change in the liver is consistent with an animal that has been under metabolic/nutritional stress for some time. The uterine abscess is suggestive of a bacterial infection that has been walled off. The significance of this lesion is unknown. This animal appears to have live stranded whilst attempting to give birth unsuccessfully (dystocia) and the observed close proximity of other animals during the initial stranding would support the hypothesis that several members of the pod were attempting to remain close to this distressed female.

There was no evidence of any infectious process in these animals that would account for the MSE.

#### 4.3.3.3 Biochemistry and Haematology

Animal M161.3/15 had a very high creatine kinase (CK) level and azotaemia suggesting renal failure secondary to myoglobin deposition. Aspartate aminotransferase (AST) was also very high, suggesting that muscle and possible liver damage was significant. Gamma-glutamyltransferase (GGT) was also high and may reflect cholestasis/hepatobiliary disease.

The red blood cell parameters were raised in the second animal, presumably due to dehydration but it may reflect splenic contraction. This confirms the animal had been live stranded for some time and not a suitable candidate for refloating.

M161.2/15 the azotaemia, CK and GGT rises are less marked than in the other euthanased animal but still consistent with a significant rhabdomyolysis likey associated with stranding. Unfortunatly the blood taken from M161.3/15 was not suitable for haematological examination.

#### 4.3.3.4 Acoustic trauma investigations

Ears extracted within 18 hours of death were and fixed in formol saline and sent to University of British Columbia (UBC) Canada for decalcification and subsequent imaging using transmission electron microscopy to assess hair cell integrity. Final results are awaited but initial imaging did not identify any lesions which would be consistent with overexposure to underwater noise and subsequent hearing loss. There is therefore no pathological indication of an acoustic factor in this MSE.

#### 4.3.3.5 Domoic acid investigations.

Domoic acid testing was carried out on 5 animals and all proved below the limit of detection.

| Species | SMASS Number | Cause of death | DA Faeces ng/g | DA Urine ng/ml |
|---|---|---|---|---|
| Pilot whale | M161.1 | Live Stranding | <LOD | <LOD |
| Pilot whale | M161.2 | Live Stranding | <LOD | <LOD |
| Pilot whale | M161.3 | Live Stranding | | <LOD |
| Pilot whale | M161.4 | Live Stranding | | <LOD |
| Pilot whale | M161.6 | Live Stranding | <LOD | |

### 4.3.4 External and environmental factors

Requests made to the coastguard for shipping activity or AIS logs did not yield any response. Requests made to the MOD for activity logs for this region for a period 19/05 to 09/06 were responded to and did not suggest any abnormal intensity, duration or nature of activity. However, as no baseline is available regarding ‘usual’ activity in that region, any potential impact from anthropogenic noise of military origin is hard to assess.

Details as follows:

- Ministry of Defence shipping (including submarines) movements and Activity

    - 1 frigate transiting southward through The Minches overnight Sat 30 May/Sun 31 May. A standard navigational echo sounder will have been in use operating around 40 KHz. No other transmissions or activity of note.
    - No other movements in the area.
- Ministry of Defence Range activity at Cape Wrath (including Garvy Island) and Hebrides Range (Benbecula).
    - Ranges not in use.
- Ministry of Defence Test and Evaluation Centre (BUTEC)
    - UAV Glider testing with locator signal of 14Khz at 198 dB
        - 2/6/15 - 1225 to 1415 & 1510 to 1600
        - 3/6/15 - 0950 to 1140, 1330 to 1407 & 1520 to 1618
        - 4/6/15 - 1000 to 1137

### 4.3.5 Subsequent sightings and strandings

On 3rd June a pod of 5 animals were sighted in shallow water between Scalpay and Strollamus (NG594275). This group spent most of the subsequent week in this area and did not appear to be exhibiting distress, although it is unlikely they were able to successfully feed in those waters.

On 6th June a large male was observed to have become live stranded at the falling tide at the adjacent Caolas Scalpay (NG600272), however this animal was successfully refloated by members of the public and no carcases were subsequently reported from this area.

In addition to the strandings noted above, a 365cm female *G. melas* was found dead stranded on 4th June at the Kyle of Lochalsh. This case was necropsied on 6th June and the animal was found to have live stranded, with no significant underlying gross pathology but indications of a previous stranding. Dorsal fin identification did not match any of the animals refloated from Staffin Island, however, as no dorsal fin photographs were taken at the original refloat from Brogaig beach, it is not known if this animal was one of the original group stranding.

Figure 17: Initial mass stranding location Brogaig Beach, Staffin (photo Steph Waterston BDMLR)

Figure 18: Subsequent mass stranding location Staffin Island, Staffin (photo Martin Boon BDMLR)

Figure 19: Primary necropsy site Garafad, Staffin


Figure 20: Location of LFPW mass stranding event

### 4.3.6 Summary

Subsequent teeth aging of the stranded animals Indicated M161.6/15 was 19-20 years old. Sexual maturity in females of this species is around 8 so it is unlikely this was her first calf. Nonetheless, in the absence of evidence for other significant factors, it is plausible that this animal was having difficulty giving birth and this dystocia was a trigger for the stranding event. This is supported the behavioural observations from members of the public made prior to the stranding, of an animal in apparent distress being circled by other members of the pod.

## 4.4 *M242.1- M242.2/15 long-finned pilot whales (Globicephala melas) MSE Inverness, Highland.*

On 24th July a report was received of two dead long-finned pilot whales (*Globicephala melas*) found close together on a beach near to the Longman landfill site Inverness. They had been reported to the SeaWatch foundation by a French tourist who had found them on 20th July. The beach itself is not easy to access or visible from any nearby road and seldom visited by anyone so the likelihood of a member of the public finding them if they had live stranded would be small. SMASS visited the site on 24th July and found two adult animals, a male and female. Both animals were in a very advanced state of decomposition so necropsies were not undertaken, but accurate measurement and samples of skin and muscle were taken. Earlier in the month (2nd July) a single dead female long-finned pilot whale was seen floating approximately half a mile east of the Kessock Bridge in the Moray Firth, eventually coming ashore at Rosemarkie. This animal was also in an advanced state of decomposition so a necropsy wasn't undertaken. On 7th July another single dead adult male long-finned pilot whale was reported at Nairn on the south coast of the Moray Firth in an advanced state of decomposition. Both of these animals were sampled by SMASS. There had been no reports of pods of long-finned pilot whales in the area prior to or after these strandings. Clearly all the animals had been dead for some time so it was neither possible to tell whether the animals found close to Inverness had live stranded or just washed up together already dead, nor if any of these stranding events are related.

Figure 21: M242.2 /15 long-finned pilot whale (*Globicephala melas*) one of the animals from Inverness.

## 4.5 *M267.1- M267.2/15 short-beaked common dolphins (Delphinus delphis) MSE Burntisland, Fife.*

On 8th August two short-beaked common dolphins live stranded on mud flats close to Burntisland, Fife. They were attended to by a BDMLR vet and three medics. Both animals were found to be juvenile females. One animal had a superficial wound to the right eye and both were thought to be in good condition and were refloated. Both animals swam of strongly however one did come close to the shore before heading out to deeper water. A single animal was found stranded dead close to the area on 9th August this animal was confirmed by BDMLR as one of the live stranded animals. This animal was secured by a BDMLR volunteer for collection, however before this could take place the local council removed the animal. It was eventually recovered by SMASS for investigation. This juvenile female common dolphin exhibited indications of a second live stranding: notably aspirated beach debris in airways, hypostatic congestion and asymmetry of lungs, ventral bruising and abrasions to flukes and fins. There was also notable intracranial haemorrhage but no subdural bleeding. This was possibly agonal or indicated a neurological cause to the original stranding. There was no evidence of recent feeding and the parasite burden was low. All the visceral organs were largely unremarkable. Bacteriology did not reveal any significant isolates.

**Figure 22: M267.2/15 the second juvenile female short-beaked common dolphin (*Delphinus delphis*) live stranded at Burntisland, Fife.**

## 4.6 *M360.1- M360.1/15 short-beaked common dolphins (Delphinus delphis) MSE Beauly Firth Highland.*

This very freshly dead adult female common dolphin was found stranded in the muddy and highly tidal area of the Beauly Firth on 8 November. Prior to this a younger animal, assumed to be its calf, was refloated by the Scottish Society for the Prevention of Cruelty to Animals (SSPCA) from a stretch of beach approximately 1km to the east of where the female was found. The adult female was dehydrated, with tacky meninges and evidence of agonal live stranding based on lung asymmetry and silt ingestion. There was no silt aspiration although the lungs contained excess fluid, likely seawater. The animal was lactating and pregnant with a 10.5cm foetus in the left horn. Green turbid fluid was noted in the amnion and the placenta, and the vascular of the uterine wall appeared dilated and hyperaemic suggesting possible pyometra. There was no evidence of recent feeding, and the parasite burden was low. Live stranding following an aberrant calf is a possibility, however underlying infection/sepsis in reproductive tract cannot be ruled out. Bacteriology did not reveal any single significant pathogen, however a heavy growth of mixed organisms isolated from the placenta, foetus and uterine fluid in a fresh case suggests a uterine infection may have been significant enough to debilitate the animal.

**Figure 23: M360.1/15 the adult female short-beaked common dolphin (*Delphinus delphis*) found dead stranded in the Beauly firth, Highland.**

## 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. Many 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.

In addition to those cases listed below, BDMLR attempted to release an entangled humpback whale in Loch Sleat on 28th October. Bad weather meant they had to abandon the attempt. It is believed that this same animal may have been found and released from the entangled gear by fishermen approximately a week later.

## 5.1 *M163/15 – Humpback whale (Megaptera novaeangliae)*

This sub-adult humpback whale was seen alive entangled in creel ropes on 4 June 2015. It was found dead floating at sea on 6 June 2015. The carcase was recovered and towed to Helmsdale for necropsy and removal by Big Wave Productions for ITV documentary purposes. Members of both SMASS and the CSIP were involved in the necropsy and were filmed by Big Wave for their documentary. There was evidence of chronic entanglement around the pectoral fins, and of acute entanglement around the tail stock. There was significant skin remodelling around the chronic sites though the animal was in a good condition otherwise. The cause of death was confirmed as drowning, rather than emaciation and/or infection.

**Figure 24: M163/14 Andrew being interviewed about the Humpback whale (*Megaptera novaeangliae*) by STV news, Helmsdale.**

**Figure 25: M163/15 Humpback whale (*Megaptera novaeangliae*), members of SMASS and CSIP being filmed by Big Wave productions for an ITV documentary**

## *M180/15 – Minke whale (Balaenoptera acutorostrata)*

This juvenile male minke whale was observed slow moving in shallow waters at Boirseam, Harris on 16 June, with an identifiable encircling ligature around the lower jaw and dorsal excoriations and blistering of the skin. The animal was left stranded by the tide, and was euthanised via three shots to the head by a local marksman. The encircling lesion was relatively chronic (< 3 weeks) and several visceral tissues; namely kidney, heart, spleen, and intestine, showed petechiation and dilated vasculature suggestive of sepsis although this was not definitively confirmed be bacteriology. The animal was in moderate condition indicating a systemic illness , rather than starvation or exhaustion, was the reason for morbidity. There was no significant evidence of recent feeding.

**Figure 26: M180/15 minke whale (*Balaenoptera acutorostrata*) showing close up of entanglement. Boirseam, Harris.**

## 5.2 *M262/15 – Long-finned pilot whale (Globicephala melas)*

This sub-adult male long-finned pilot whale was found in very fresh condition at the shallow end of Loch Na Daal, Skye on 5 August, with a necropsy was carried out on site. It was in very fresh condition and showed evidence of live stranding. There were faint encircling lesions/marks around the tailstock and head and linear excoriations on the left pectoral fin not inconsistent with acute entanglement. However there was neither indication of tissue changes suggestive of long term entanglement or indication of water aspiration. The stomachs were empty and the animal was in moderate condition. The CSF appeared normal and the brain and visceral organs otherwise grossly normal. The animal appeared to be

sexually mature and had a low and likely clinically insignificant parasite burden. Bacteriology did not reveal any significant organisms. Cause of death is live stranding but the possibility of a previous acute entanglement cannot be ruled out.

**Figure 27: M262/15 long-finned pilot whale (*Globicephala melas*) from Loch Na Dal, Skye.**

## 5.3 *M285/15 – Minke whale (Balaenoptera acutorostrata)*

This sub-adult female minke whale was seen floating off Arisaig and subsequently stranded at Glen Uig on 31 August. There was very clear evidence of acute entanglement with rope marks around the tailstock, and another rope notch mark in the ventral side at the base of the tail flukes, and bilateral rope marks over the dorsal side of the tail flukes (see photos below). Both lungs were very congested and bilaterally heavy and fluid filled. No stable foam was present however. There was a large amount of fish digesta in the cardiac stomach (> 4kg, bones, tissue, otoliths) suggests this animal had been feeding recently. No foreign bodies or plastic were seen in the intestinal tract. Visceral organs appeared grossly unremarkable, though kidneys, liver, and lymph nodes were autolysed. The animal may have been possibly pyrexic/hyperthermic at death based on the degree of autolysis of the visceral organs. Bacteriology was unrewarding with all organs cultured proving contaminated. This animal died as a result of acute entanglement involving tail fluke only with subsequent drowning from water aspiration more likely than anoxia.

**Figure 28: M285/15 minke whale (*Balaenoptera acutorostrata*) from Glenuig, showing entanglement marks around tail flukes arrowed.**

## 5.4 *M396-15 – Minke whale (Balaenoptera acutorostrata)*

This juvenile female minke whale was found drifting off Inverkip on 26 November and made landfall largely due to a very inflated pharynx. There was consequently little discernible pathology as the visceral organs were very autolysed. The stomachs had herniated into the thorax and ruptured, most likely due to post mortem gas build up. There was evidence of recent feeding and good blubber deposits. There was also clear evidence of rope entanglement around the tailstock with parallel lesions on the ventral surface of the flukes this was associated with haemorrhage and bruising indicating this was ante mortem. Bacteriology did not reveal any significant isolates. The congestion and fluid in the lungs confirmed drowning as a result of acute entanglement as the most plausible cause of death.

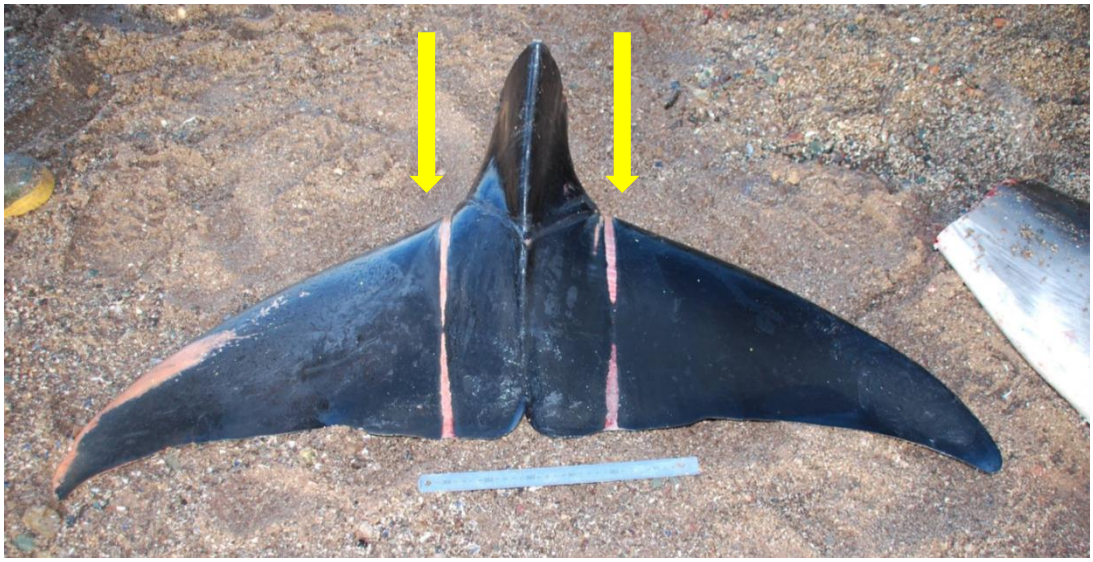


**Figure 29: M396/15 minke whale (*Balaenoptera acutorostrata*) from Glenuig, showing entanglement marks around tail flukes arrowed.**

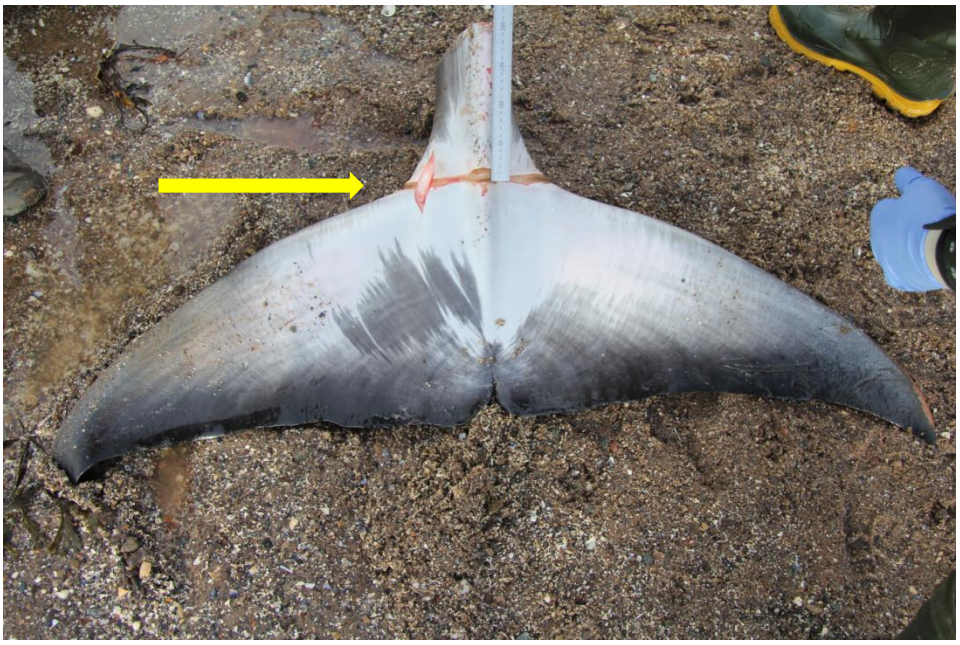


**Figure 30: M396/15 minke whale (*Balaenoptera acutorostrata*) from Glenuig, showing entanglement marks around tail flukes arrowed.**

## Section 6: Grey seal attack (cetaceans).

This newly described phenomena 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.

### 6.1 *M103/15 – Harbour porpoise (Phocoena phocoena)*

A harbour porpoise was found on 16th March at Archerfield beach, East Lothian. The animal had lesions consistent with predation by a grey seal (*Halichoerus grypus*). The rib cage was exposed and significant areas of tissue were missing. The wound appeared to have a straight edge very similar, if not identical, to cases seen in the Netherlands.

**Figure 31: M103/15 harbour porpoise (*Phocoena phocoena*) with lesions consistent with grey seal predation.**

### 6.2 *M144/15 – Harbour porpoise (Phocoena phocoena)*

This juvenile female harbour porpoise was observed being possibly predated on by a seal at sea at Port Henderson near Gairloch on the 8th May. It drifted ashore and was recovered and secured away from any potential scavengers pending collection the following day. There was extensive evidence of bite marks, puncture wounds and tissue defects, most notably the near complete removal of the *longissimus dorsi* muscle from both sides of the thoracic vertebrae. Of note were several micro-haemorrhages associated with the puncture marks

which suggest this was an attack on a live animal and not scavenging of a carcase. This would be consistent with grey seal predation cases seen in the Netherlands. There was some evidence of avian scavenger damage, most notably over the ribs. There was no evidence of any underlying disease, the animal was in good condition and had recently fed. The stable foam in the lung and water stomach contents would be consistent with anoxic drowning and possible aspiration and or ingestion of sea water. The isolation of a *Pasteurella sp*. from the lung is thought to be an incidental finding. Given the possible observed attack, seal predation is the most probable cause of death of this otherwise healthy animal.

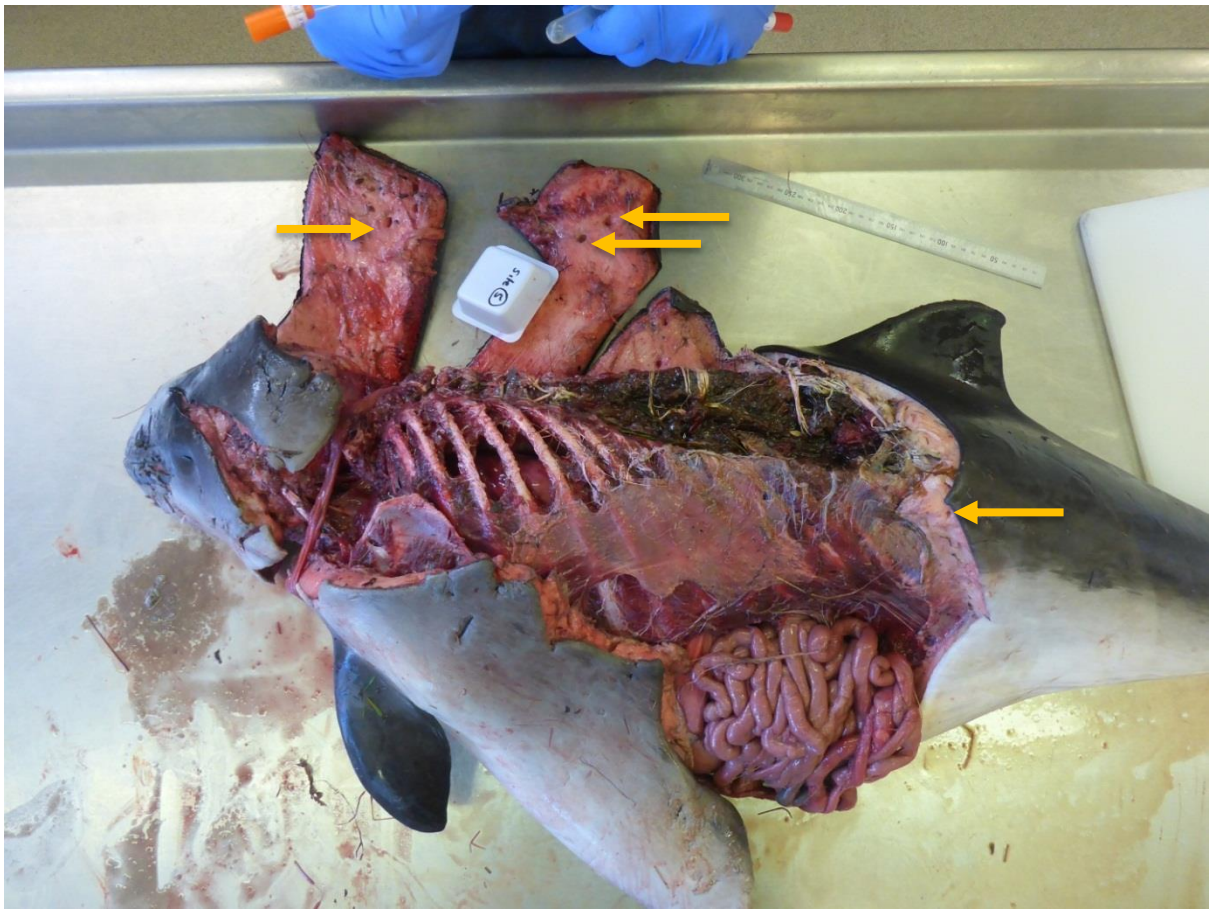


**Figure 32: M144/15 Harbour porpoise (*Phocoena phocoena*) from Port Henderson, Gairloch. Arrows show possible Grey seal teeth puncture marks.**

## Section 7: Other notable single strandings

### 7.1 *M33/15 – Striped dolphin (Stenella coeruleoalba)*

This sub-adult female striped dolphin was found dead on South Uist on 17 January following heavy seas. Both the rostrum and jaw were fractured and there was some associated haemorrhage, but no remodelling or definite indication the trauma was ante mortem. The lungs showed asymmetry consistent with live stranding. There was no indication of recent feeding and the liver was congested. An excess (20-30ml) of sanguineous, mildly turbid cerebral spinal fluid was evident. The cerebral ventricles were dilated and the meninges thickened. Histology showed severe, sub-acute to chronic, generalised lympho-plasmacytic meningo-encephalitis. There was also a severe, chronic, generalised eosinophilic lymphadenitis (mesenteric lymph node) and a moderate, chronic, multi-focal suppurative lymphadenitis (pulmonary lymph node). This together with the pure growth of *Brucella ceti* from the CSF indicates live stranding as a result of a meningoencephalitis due to neurobrucellosis.

**Figure 33: M13/14 striped dolphin (*Stenella coeruleoalba*) South Uist**

## 7.2 *M55/15 – Killer whale (Orcinus orca)*

This male killer whale was found dead stranded on the QinetiQ missile range South Uist by the MOD range safety officer on 27 January. It was in an advanced state of decomposition and not suitable for necropsy. However a team from the National Museum of Scotland (NMS) travelled to collect the skeleton to add to their archive and in the process collected tissue samples for toxicology, DNA and teeth for aging the animal.

**Figure 34: M55/14 killer whale (*Orcinus orca*) South Uist**

## 7.3 *M64/14 – Risso's dolphin (Grampus griseus)*

This sub-adult/juvenile Risso's dolphin was seen alive swimming in shallow water in Loch Fleet. Two days later on 3 February it was seen at the same location, stranding on ebbing tide and was euthanised by two gunshots to the head. This caused severe trauma to the cranial vault and brain precluding detailed neuro-histopathology. Viscerally the animal was dehydrated and had no digesta in the stomach but was otherwise unremarkable and an low parasite burden and moderate lymph node enlargement do not indicate any significant infectious process. It is possible there is either a neurological or behavioural cause to the animal spending several days not feeding in Loch Fleet before dehydrating and live stranding. Bacteriology did not reveal any significant isolates. Histology showed a moderate to severe, acute, generalised systemic congestion. The brain lesions are consistent with being shot and the pulmonary lesions with live-stranding although we were unable to determine a reason for the behaviour displayed by this animal prior to stranding.

Figure 35: M64/15 Risso's dolphin (*Grampus griseus*) from Loch Fleet

## 7.4 *M101/15 – Striped dolphin (Stenella coeruleoalba)*

This sub-adult/juvenile striped dolphin was seen to live strand on 8 March and was unsuccessfully refloated by members of the public before re-stranding and dying. There was mild lung asymmetry, congestion and water aspiration, consistent with live stranding. However, an excess of mildly turbid CSF and dilated cerebral ventricles, *Brucella ceti* was isolated from the brain and CSF. The testes were also very small (approx. 10cm in length) and penis was vestigial, possibly indicating impaired sexual development. No gross ovarian tissue was noted but possibility of an intersex will be assessed histologically at the University of Aberdeen. Histology revealed a severe, sub-acute to chronic, generalised lymphocytic meningoencephalitis consistent with neurobrucellosis. This would explain the animal's stranding and eventual death.

Figure 36: M101/15 striped dolphin (*Stenella coeruleoalba*) from Skye.

## 7.5 *M187/15 – Sowerby's beaked whale (Mesoplodon bidens)*

This sub-adult male Sowerby's beaked whale was found freshly dead, stranded on Port Ness beach, Isle of Lewis on 22nd June. It was necropsied 40 hours later, by which time significant epidermal loss from avian predation had occurred. The animal was in good nutritional condition. The lower left jaw was fractured on the mid horizontal ramus and associated haemorrhage indicated this was ante-mortem. There was however no swelling or remodelling of the tissues observed, indicating this was likely a peri-mortem event (within 24 hours). There was no evidence of recent feeding, however the blubber and muscle condition was good and the liver did not indicate prolonged anorexia. The visceral organs were very congested, including the lungs. The brain had extremely dilated ventricles which contained in excess of 150 ml of turbid cerebral spinal fluid (CSF). *Brucella ceti* was isolated from the CSF, ventricles and choroid plexus. Histology revealed a severe, sub-acute to chronic, focally extensive lymphocytic encephalitis and mild meningitis. These findings are consistent with neurobrucellosis reported in other species of cetacean.
This is the first case of this condition in this species and genus and was the subject of a poster presentation at the European Cetacean Society (ECS) Conference in Funchal, Madeira.

**Figure 37: M187/15 Sowerby's beaked whale (*Mesoplodon bidens)* from Port of Ness, Lewis.**

## 7.6 *M257/15 – Harbour porpoise (Phocoena phocoena)*

This aged male harbour porpoise was found dead stranded in fresh condition in Fraserburgh Aberdeenshire on 1 August. It was in thin bodily condition. There were profound and extensive infiltrative tumour-like masses, pale cream and lymphoid in appearance throughout the viscera. These were particularly focused around the thymus and heart base, pulmonary associated lymph nodes, peri-renal and colorectal lymphatics. The spleen in particular was tennis ball sized with normal splenic tissue almost entirely replaced by lymphoid tissue. The stomachs were empty with no evidence of recent feeding. Lung, liver and heart appeared completely normal; however the pleural cavity contained a significant volume (~200ml) of turbid, mildly fibrinous haemogenous fluid. Parasitic burden was low and the brain and CSF were unremarkable. Bacteriology did not recover any significant isolates. Histopathology showed a severe, chronic, generalised lymphoid tumour affecting multiple lymph nodes and the spleen Cause of death is likely vascular compromise from extensive neoplasia, likely lymphoma; however this will be confirmed by further analysis.

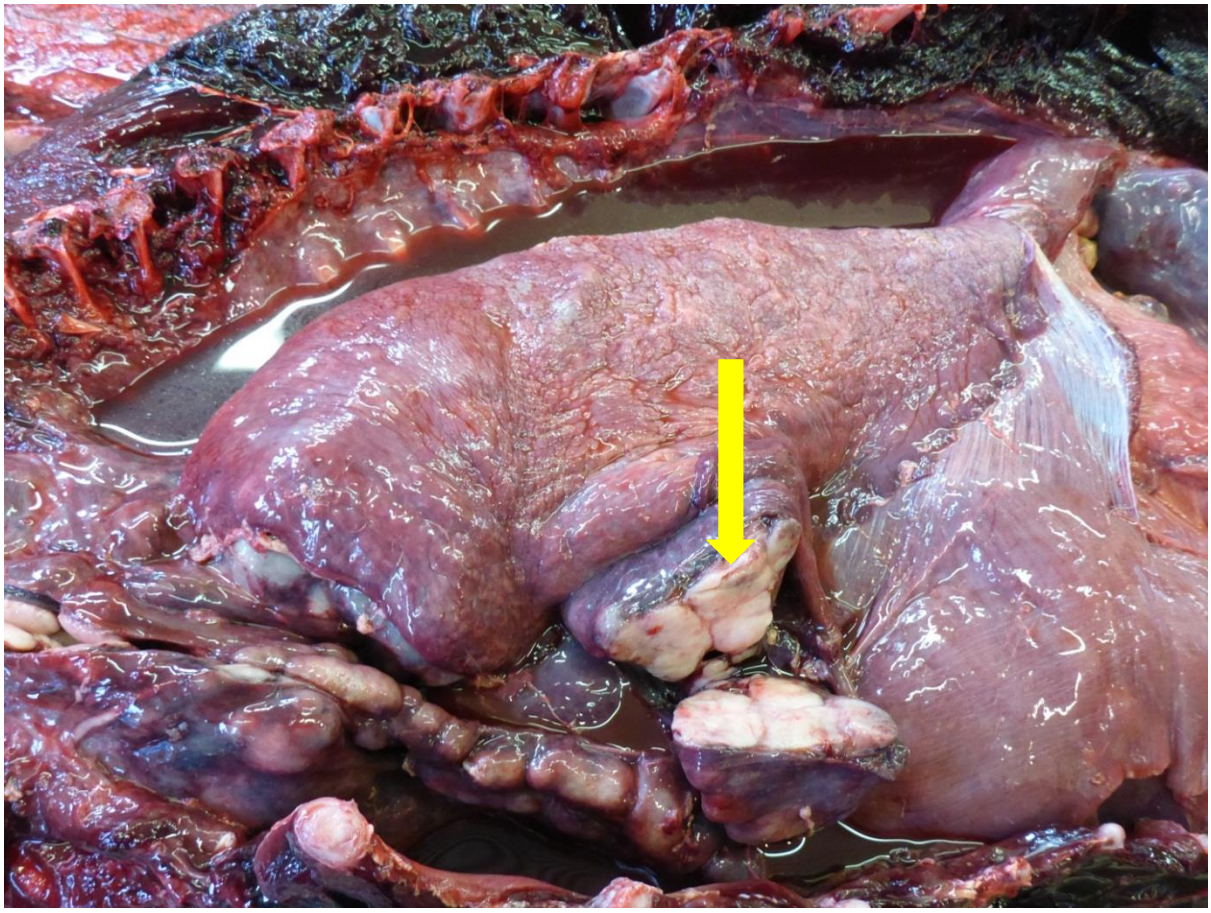


**Figure 38: M257/15 Harbour porpoise (*Phocoena phocoena*) from Fraserburgh showing lymphoid tumour masses around pulmonary associated lymph node (arrow).**

## 7.7 *M269/15 – Harbour porpoise (Phocoena phocoena)*

This sub-adult female harbour porpoise was found dead stranded at Culbin Point on 11 August. It was in good bodily condition and exhibited typical trauma associated with a bottlenose dolphin attack. There were multiple fresh rake marks 10-13 mm apart over several areas of the body. There were multiple fractures to the ribs on both sides, the spine was fractured and both the right lung and liver were ruptured. There was evidence of recent feeding with recent digesta in all sections of the stomachs. Interestingly there were a number of healed rake marks over the tailstock suggestive of a previous interaction with a bottlenose dolphin from which the animal survived. Cause of death was a trauma due to a bottlenose dolphin attack.

**Figure 39: M269/15 harbour porpoise (*Phocoena phocoena*) from Culbin point Moray.**

## 7.8 *M319/15 – Minke whale (Balaenoptera acutorostrata)*

This young juvenile male minke was in an emaciated condition and exhibited signs of likely proximal live stranding on 10 October. Both lungs were congested and there were excoriations and bruising on the ventral abdomen and loss of epidermis on the leading edge of the tail flukes. It had a severe intestinal parasite burden with the hookworm *Bolbosoma balaenae* (identified by the Natural History Museum London) present in much of the intestine. These parasites extended through the gut wall onto the serosal surface and caused reactive changes in the associated LN's. Similar parasites were present in the omentum and peritoneum. It is not clear where in the immune compromise-debilitation-parasitism cycle this animal is, however this combination is likely significant and the reason for the stranding.

**Figure 40: M319/15 minke whale (*Balaenoptera acutorostrata*) intestine a heavy burden of the hookworm *Bolbosoma balaenae***

## 7.9 *M325/15 – Long-finned pilot whale (Globicephala melas)*

This neonatal long-finned pilot whale was found live stranded on Garry beach Tolsta, Isle of Lewis on 16 October. It was recovered and chilled for one week prior to necropsy. It exhibited multiple rake marks on both sides of the body, dorsal fin and ventral surface.

These were 5-6mm apart shallow with evidence of mild petechiation but no extensive haemorrhages or trauma in underlying structures. The stomach, contained milk confirming this was a maternally dependant animal. They lungs were mildly asymmetric suggestive of live stranding. There was a mild nematode burden in the terminal bronchi mainly in the apex of the lungs, suggesting either trans-placental or peri-parturent infection. Aside from the pathology associated with stranding no obvious developmental, traumatic or infectious cause was evident from the gross pathology. The isolation of the Haemophilus-like organism from the lungs is not thought to be significant. The rake marks are too finely spaced for conspecific or bottlenose dolphin the latter particularly due also to the absence of deep trauma. However other cetacean interactions cannot be ruled out in particular common or striped dolphins which have similar interdental spacing as the rake marks seen in this animal. Live stranding is the primary cause of death.

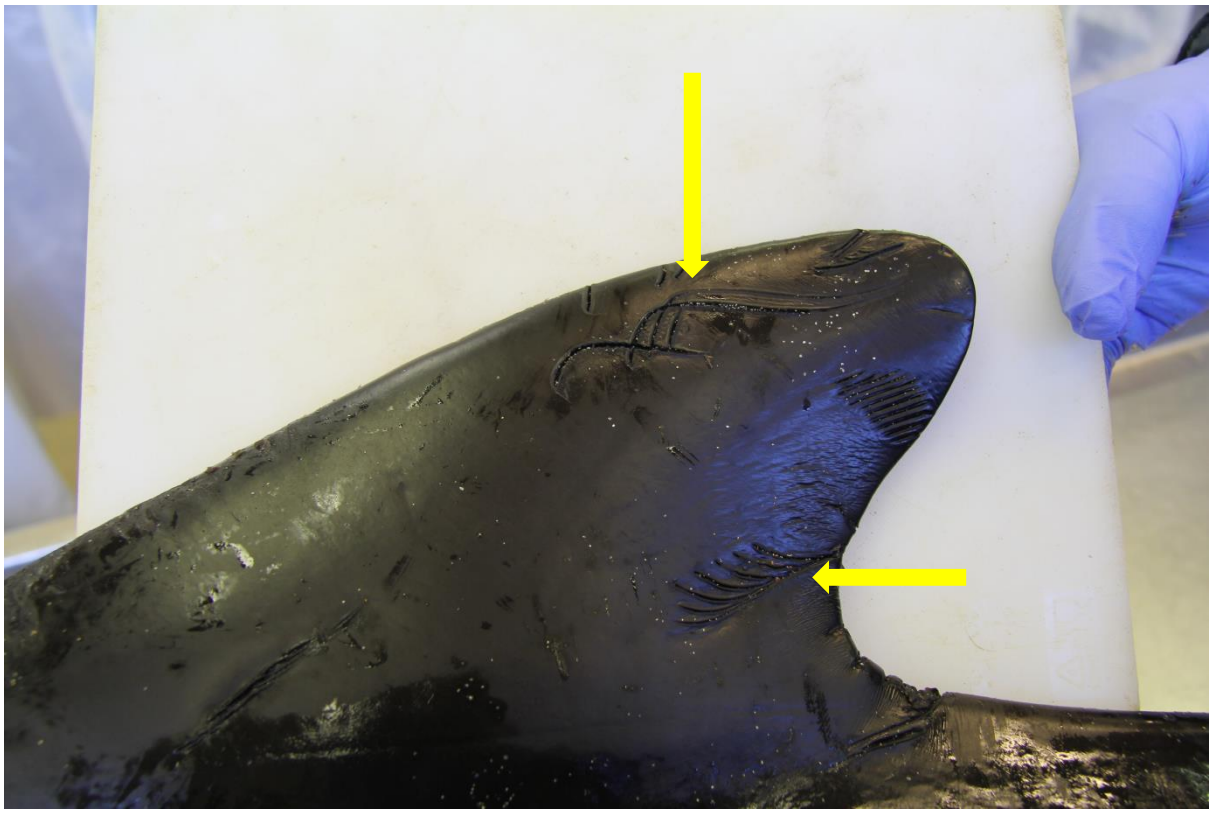


**Figure 41: M325/15 long-finned pilot whale (*Globicephala melas*) dorsal fin showing rake marks arrowed.**

## 7.10 *M338/15 – Striped dolphin (Stenella coeruleoalba)*

This juvenile male striped dolphin was live stranded at the Brough of Birsay, Orkney and refloated by members of the public on 25 October. It re-stranded soon after, was refloated for a second time after which it swam off erratically but strongly. The animal was found dead at the same location three days later. The animal was in a moderate to poor body condition. There was sand present in the mouth, oesophagus, all sections of the stomach and the proximal intestine. There was no evidence of recent feeding. The lungs exhibited a mild nematode burden and moderate asymmetry with the right lung hyper inflated. There were excoriations to the leading edge of the tail fluke and pectoral fins, and damage to the tip of the beak, all consistent with a live stranding event. The brain contained a moderate

amount of red stained CSF, the right ventricle appeared enlarged and choroid plexus haemorrhagic, this along with the isolation of *Brucella ceti* from the brain and CSF is highly suggestive of neurobrucellosis indicating there may have been a potential neurological cause to the original stranding.

**Figure 42: M338/15 striped dolphin (*Stenella coeruleoalba*)**

## 7.11 *M339/15 – Long-finned pilot whale (Globicephala melas)*

This Juvenile female long finned pilot whale was found live stranded on a high tidal beach in Loch Dunvegan, Skye on 27 October. It had been euthanased with three lateral shots with a .308 calibre rifle to the skull which had obliterated the cranial vault and led to massive brain trauma. Death was likely instantaneous. It had multiple deep parallel lacerations 10-12mm apart on the flank and tail stock, severe laceration to the trailing edge of the left pectoral fin, and bite and drag marks over the dorsal fin and tail fluke. The rake marks were associated with moderate blubber- and subcutaneous bruising. There were no fractures, but there was gelatinous oedema over areas of the flank, which would be consistent with focal blunt trauma from either live stranding or bottlenose dolphin attack. The animal was otherwise in a good body condition and had squid beaks and chyme in the stomach, suggestive of relatively recent feeding. There was no evidence of significant disease or parasitism although purulent material in the uterine body and vaginal discharge may be significant. Bacteriology produced a mixed growth of NH *E. coli* and *Photobacterium damselae* from the uterine fluid, *P. damselae* was also isolated in pure growth from the lungs and in mixed culture with an unidentified gram negative irregular rod from the brain and CSF. The *P. damselae* and *E. coli* are not thought to be significant. The rake marks could be conspecific, but due to the similarity to those injuries associated with a bottlenose

dolphin (BND) attacks seen in harbour porpoise it is probable that this is the cause for the stranding. If so, this would be only the second reported case of violent interactions between bottlenose dolphins and this species.


**Figure 43: M339/15 long-finned pilot whale (*Globicephala melas*) tail stock showing rake marks 10-12mm apart.**

## 7.12 *M388/15 – Striped dolphin (Stenella coeruleoalba)*

This juvenile male striped dolphin showed evidence suggestive of live stranding on 24 November. There was asymmetry of the lungs and submandibular bruising. There was no evidence of recent feeding with all stomach sections empty apart from a moderate nematode burden. All visceral organs were unremarkable with no obvious evidence of infectious disease. The brain had dilated ventricles, hypertrophic choroid plexus and an excess of CSF. Lesions were confirmed on histopathology, and alongside the isolation of *Brucella ceti* from the CSF confirms a diagnosis of meningoencephalitis due to neurobrucellosis.

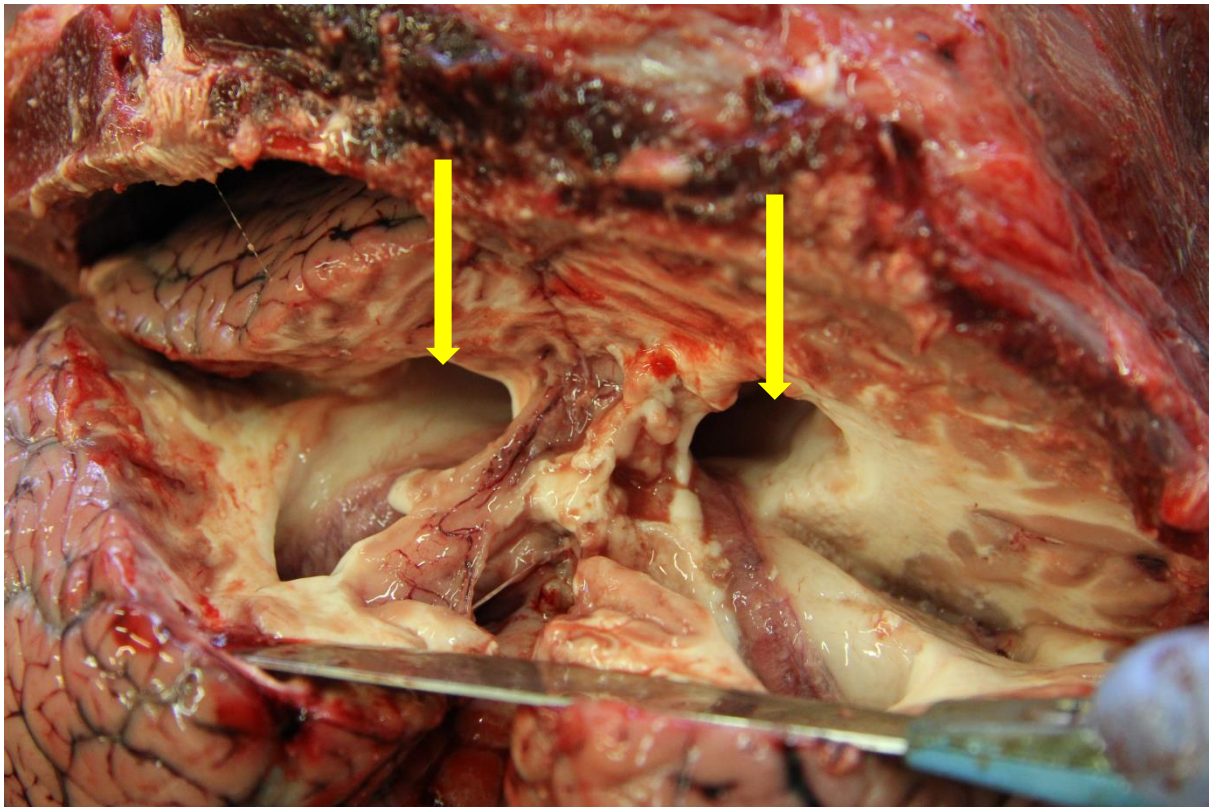


**Figure 44: M388/15 striped dolphin (*Stenella coeruleoalba*) brain showing dilated ventricles - arrowed.**

## 7.13 *M407/15 – Cuvier's beaked whale (Ziphius cavirostris)*

This adult male Cuvier's beaked whale was found live stranded in shallow water off Harrapool, near Broadford, Skye. It was euthanised by two shots to the head which cracked but did not appear to have penetrated the skull. The animal was partially submerged during the necropsy which made it largely a sample collection exercise. Among the notable pathology was multiple purulent foci associated with a nematode burden in the renal parenchyma. A severe impaction of plastic debris, mainly bags, was observed in all stomach compartments and significantly through the pyloric sphincter and into the proximal duodenum. This was diphtheritic and showed significant associated mucosal pressure necrosis. The gastric mucosa was generally irritated and inflamed. The brain showed dilated ventricles and contained a notable volume of CSF which was slightly turbid. The choroid plexus were pronounced. No significant damage to the brain from the gunshot was observed. Cultures from the kidney lesion produced a profuse growth of *Clostridium sordellii* and a few *E. coli*. The significance of the Clostridium isolate is uncertain. The cultures from the remaining tissues were unremarkable. Histopathology revealed a severe, sub-acute, generalised gastritis/enteritis and a severe, chronic-active, focally extensive necro-suppurative nephritis. The hepatic and pancreatic lesions suggest chronic parasitism but no actual parasites were present in the sections examined.

There were many disease processes occurring in this animal. Primarily, the gut lesions are severe and show pressure necrosis due to impaction from plastic ingesta. It is also likely this impaction was causing significant abdominal discomfort, ie colic. This may also have contributed to the likelihood of stranding.


**Figure 45: M407/15 live stranded Cuvier's beaked whale (*Ziphius cavirostris*) image credit © Sam Harrild Nicholson.**

**Figure 46: M407/15 Cuvier's beaked whale (*Ziphius cavirostris*) plastic removed from stomach.**

## Section 8: Spiral “corkscrew” trauma seal cases

Thirty-eight seals were reported as having trauma consistent with spiral or corkscrew injuries. These cases were mainly reported from Orkney and Highland, although there were also reports from other areas including Argyll and Bute, North Ayrshire and the Western Isles. Unlike previous years where high numbers were reported from Fife, this year saw only two cases. The majority of these were grey seals (*Halichoerus grypus*) (n=26, 68.4%) there remaining 31.5 % being split equally between harbour seals (*Phoca vitulina* n=6) and those too decomposed or data deficient to be identified (n=6). 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 47 below shows the spatial distribution of cases across Scotland, while Figure 48 shows Orkney only (where most cases were reported) in greater detail.

**Figure 47: M251/15 harbour seal (*Phoca vitulina*) from Achiltibuie, Highland showing typical corkscrew/grey seal predation lesions.**

Table 6: Scoring of suspected spiral trauma cases 2015

| SMASS ID | Species (common) | Date found | Region | GR100 | Sex | Would lesions fit with the archetypal 'corkscrew'/spiralled seal pattern? | Likelihood of Grey seal Predation |
|---|---|---|---|---|---|---|---|
| **M8/15** | Grey seal | 05/01/2015 | Orkney | ND | **U** | **Possible** | **Unlikely** |
| **M12/15** | Grey seal | 07/01/2015 | Highland | ND | **U** | **Possible** | **Unlikely** |
| **M29/15** | Grey seal | 14/01/2015 | Orkney | NS | **U** | **Possible** | **Unlikely** |
| **M40/15** | Harbour Seal (Common Seal) | 19/01/2015 | South Ayrshire | NH | **U** | **Possible** | **Likely** |
| **M54/15** | Grey seal | 26/01/2015 | Highland | HY | **U** | **No Data** | **No Data** |
| **M77/15** | Grey seal | 11/02/2015 | Orkney | NC | **M** | **Likely** | **Possible** |
| **M94/15** | Grey seal | 02/03/2015 | Highland | NO | **U** | **Possible** | **Possible** |
| **M227/15** | Harbour Seal (Common Seal) | 17/07/2015 | Fife | NC | **M** | **Likely** | **Possible** |
| **M251/15** | Harbour Seal (Common Seal) | 26/07/2015 | Highland | NO | **F** | **Likely** | **Possible** |
| **M249/15** | Harbour Seal (Common Seal) | 27/07/2015 | Highland | NC | **F** | **Likely** | **Possible** |
| **M259/15** | Grey seal | 30/07/2015 | Fife | NC | **F** | **Likely** | **Likely** |
| **M509/15** | Grey seal | 14/08/2015 | Orkney | HY | **U** | **No Data** | **No Data** |
| **M290/15** | Seal (indeterminate species) | 04/09/2015 | Highland | NR | **U** | **Possible** | **Possible** |
| **M288/15** | Seal (indeterminate species) | 04/09/2015 | Highland | NH | **U** | **Possible** | **Unlikely** |
| **M349/15** | Harbour Seal (Common Seal) | 26/10/2015 | Argyll and Bute | HY | **U** | **Likely** | **Likely** |
| **M374/15** | Grey seal | 14/11/2015 | Western Isles | NC | **U** | **Likely** | **Likely** |
| **M400/15** | Grey seal | 15/11/2015 | Western Isles | NG | **U** | **Likely** | **Likely** |
| **M368/15** | Harbour Seal (Common Seal) | 15/11/2015 | Orkney | NF | **U** | **Likely** | **Likely** |
| **M381/15** | Grey seal | 21/11/2015 | Orkney | HY | **U** | **Likely** | **Likely** |
| **M443/15** | Grey seal | 13/12/2015 | Orkney | HY | **U** | **Possible** | **Likely** |

| SMASS ID | Species (common) | Date found | Region | GR100 | Sex | Would lesions fit with the archetypal 'corkscrew'/spiralled seal pattern? | Likelihood of Grey seal Predation |
|---|---|---|---|---|---|---|---|
| **M442/15** | Grey seal | 13/12/2015 | Orkney | HY | **U** | **No Data** | **No Data** |
| **M441/15** | Grey seal | 13/12/2015 | Orkney | HY | **U** | **Likely** | **Possible** |
| **M444/15** | Seal (indeterminate species) | 13/12/2015 | Orkney | HY | **U** | **Likely** | **Possible** |
| **M448/15** | Grey seal | 13/12/2015 | Orkney | HY | **U** | **Likely** | **Possible** |
| **M456/15** | Grey seal | 13/12/2015 | Orkney | ND | **U** | **Likely** | **Possible** |
| **M446/15** | Grey seal | 13/12/2015 | Orkney | HY | **U** | **Possible** | **Unlikely** |
| **M489/15** | Seal (indeterminate species) | 20/12/2015 | Orkney | HY | **U** | **No Data** | **No Data** |
| **M490/15** | Seal (indeterminate species) | 20/12/2015 | Orkney | HY | **U** | **No Data** | **No Data** |
| **M491/15** | Seal (indeterminate species) | 20/12/2015 | Orkney | HY | **U** | **No Data** | **No Data** |
| **M467/15** | Grey seal | 26/12/2015 | Orkney | HY | **U** | **Likely** | **Likely** |
| **M464/15** | Grey seal | 26/12/2015 | Orkney | HY | **U** | **Likely** | **Possible** |
| **M485/15** | Grey seal | 26/12/2015 | Orkney | HY | **U** | **Likely** | **Possible** |
| **M476/15** | Grey seal | 26/12/2015 | Orkney | HY | **U** | **Possible** | **Unlikely** |
| **M477/15** | Grey seal | 26/12/2015 | Orkney | HY | **U** | **Possible** | **Unlikely** |
| **M480/15** | Grey seal | 26/12/2015 | Orkney | HY | **U** | **Possible** | **Unlikely** |
| **M505/15** | Grey seal | 27/12/2015 | Orkney | HY | **U** | **Possible** | **Possible** |
| **M488/15** | Grey seal | 27/12/2015 | Orkney | ND | **U** | **Possible** | **Unlikely** |
| **M493/15** | Grey seal | 28/12/2015 | Orkney | ND | **U** | **Likely** | **Possible** |

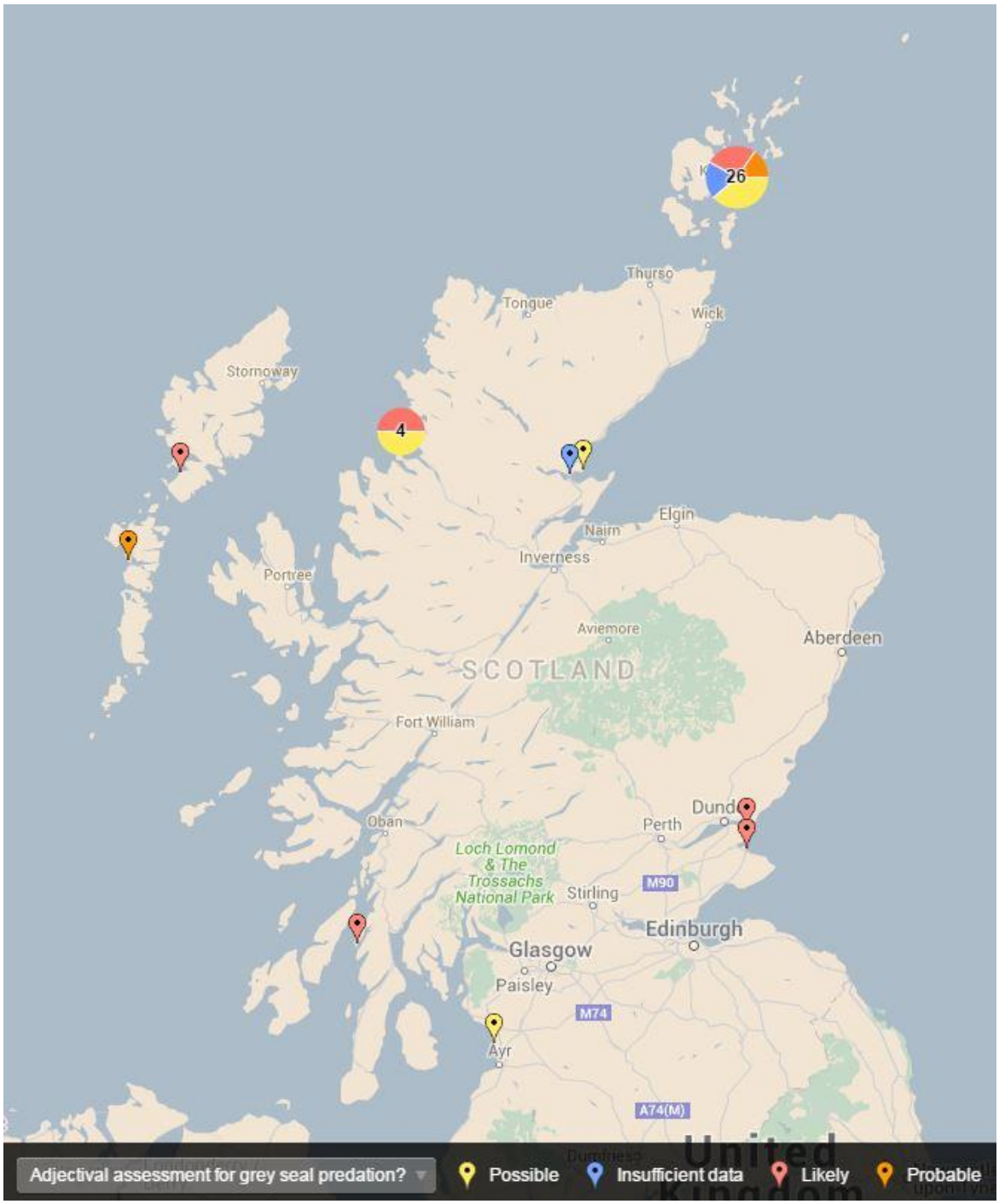



Figure 48: Distribution of seal "spiral" trauma cases in 2015

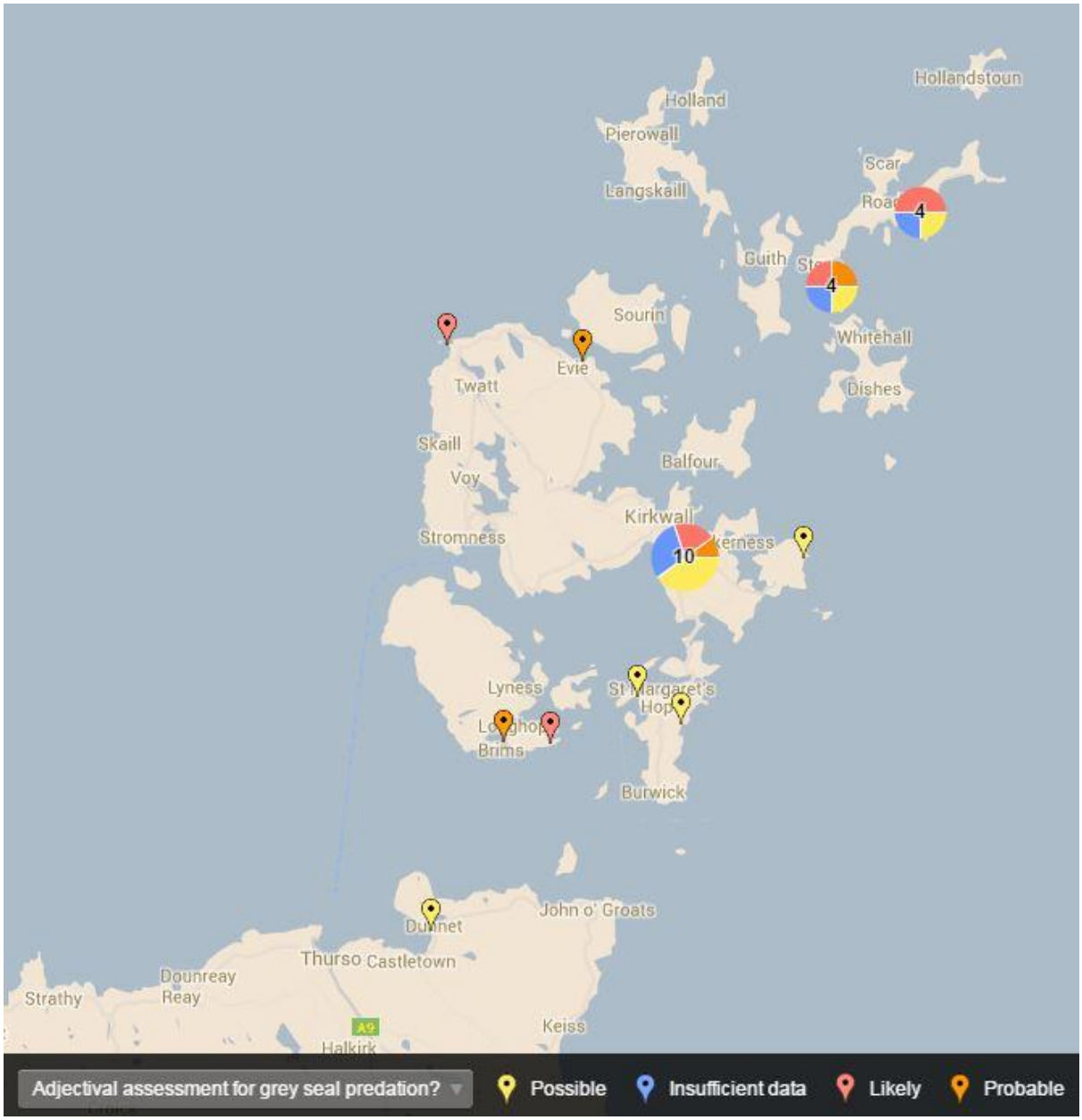



Figure 49: Distribution of seal "spiral" trauma cases on Orkney in 2015

## Section 9: Other single pinniped strandings

### 9.1 *M147/15 – Harbour seal (Phoca vitulina)*

This was an adult male harbour seal was found on 14 May at Port of Glasgow in thin condition with poor blubber deposits. There was a linear diagonal lesion approx. 25 cm long on the left ventral-lateral side of the pelvic area. This appeared to be granulating indicating an ante mortem trauma. There was evidence of a recent peritonitis with a large volume of red/brown fluid present within the peritoneum. There was distinct shortening (concertinaed section) of the duodenum 40-50cm and the proximal small intestine caused by a length of fishing line including hook, bead and weight. The hook was embedded 4-5cm along the small intestine and the weight at least 50cm distal to this however given the line was ~ 27cm in length this had caused severe shortening of the small intestine. The line had eroded through the mesenteric border of the intestines in at least two points. There was a small intussusception noted around the bead causing a point of weakness in the gut. Due to the mineral concretions evident on the fishing gear and the thin condition of the animal, it is likely this was a chronic condition with mortality due to eventual perforation of the gut and resultant peritonitis. The skin lesion is possibly the result of boat/prop strike and no doubt contributed to the morbidity of an already compromised animal, but was not in itself fatal. Bacteriology did not reveal any significant isolates.

Figure 50: M147/15 Embedded fishing line within intestinal mesentery

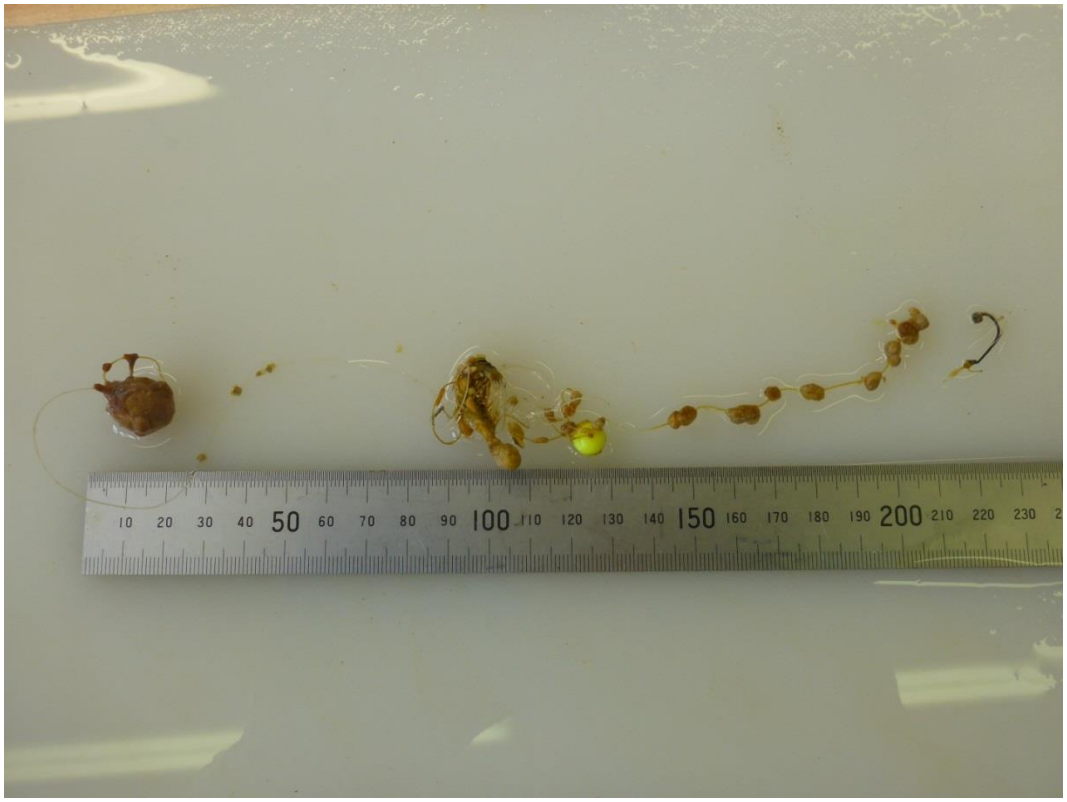



**Figure 51: M147/15 length of fishing line with bead, hook and weight attached, recovered from the intestine of the common seal.**

## 9.1 *M275/15 – Grey seal (Halichoerus grypus)*

This adult pregnant grey seal was found in a moribund condition at Brora and euthanised by a shot to the head after attendance by BDMLR and consultation from a vet on 25 August. There was evidence of moderate to severe dehydration, lung congestion, and emphysema and a minor pelvic deformity. The pup appeared normal and the placenta unremarkable. No recent feeding was evident, but the large volume of faecal material suggests this was an acute anorexia. No brain tissue remained, so a neurological cause cannot be ruled out. However, the lung pathology and evidence of acute stress, through lymph node and adrenal enlargement, may account for the observed morbidity.

**Figure 52: M275/15 moribund grey seal (*Halichoerus grypus*) from Brora.**

# Section 10: Basking shark and marine turtle

## 10.1 *Basking sharks (Cetorhinus maximus)*

There were three basking sharks (*Cetorhinus maximus*) stranding in this period. M291/15 on 7th September at Grogarry on South Uist. This was a 615cm male and although not necropsied samples were taken for on-going research into the genetics of this species by Aberdeen University. The other two were much decomposed animals reported in October, one from Highland (M320/15) and the other (M332/15) from Arran.

**Figure 53: M291/15 Basking shark (*Cetorhinus maximus*), Grogarry, South Uist.**

## 10.2 *Marine turtles*

There were two marine turtle strandings reported in 2015, a Kemp's Ridley turtle (*Lepidochelys kempii*) in January and Loggerhead turtle (*Caretta caretta*) in December.

### 10.2.1 M19/15 – Kemps Ridley turtle (*Lepidochelys kempii*)

A juvenile Kemps Ridley Turtle was reported from the Isle of Tiree on 10 January. Due to autolysis it was not recovered for necropsy but did go to the National Museum of Scotland. The Kemps Ridley Turtle is the rarest sea turtle and is critically endangered.

Figure 54: M19/15 Kemps Ridley turtle (*Lepidochelys kempii*) from Tiree.

### 10.2.2 M408/15 Loggerhead turtle (*Caretta caretta*)

This sub-adult female loggerhead turtle was found alive but moribund on Irving beach on 5 December. It was taken to rehab, given fluids, but died overnight. The animal was then frozen. Internal pathology was unremarkable, with moderate to good body condition yet no evidence of recent feeding. The fight flipper was malformed being much smaller than the contralateral and with much reduced flexion and rotation. No joint capsule fibrosis or articular pathology was noted, indicating this was likely a developmental abnormality rather than a result of trauma or disease. This deformity however appeared to have led to impaired propulsion, with a very heavy goose barnacle burden attached to the right side of the animal. This burden appeared to have caused some exfoliation of the underlying carapace scutes. Bacteriology did not reveal any significant isolates. Given this, cold shock is the most plausible cause of death with impaired mobility a likely factor in its presence in Scottish waters in early winter.

Figure 55: M408/15 loggerhead turtle (*Caretta caretta*) from Irvine.

# Section 11: Bacteriology

## 11.1 *Brucella sp.*

*Brucella ceti* was isolated seven times during this year. Once from the liver and spleen of a short-beaked common dolphin the significance of this isolate is uncertain. *B. ceti* was also isolated from four striped dolphins all from the cerebral spinal fluid (CSF) and in the two cases the brain also. These are possible cases of meningoencephalitis.

The most significant isolation of *Brucella ceti* during this period from a juvenile male Sowerby's beaked whale (see above). The organism was isolated in mixed culture from the CSF, choroid plexus and in pure culture from the brain ventricle surface. This would suggest a *Brucella* meningoencephalitis, if this is confirmed by histology it would be the first instance of this condition in this species.

There were two isolations of *B. pinnipedialis* during this period both from harbour seals al the significance of the isolates is a present uncertain as recent studies suggest that this species of *Brucella* may not be a pathogen in seals.

The number of different species from which Brucella sp. has been isolated remains the same as last year at 13, nine cetaceans and 4 seals.

## 11.2 *Vibrio sp.*

*Photobacterium damselae* was isolated in mixed culture from the lung of a Risso's dolphin. The significance of this however is uncertain. *Photobacterium damselae* was isolated in mixed culture from the lung and in pure culture from the kidney of a pilot whale. The same organism was isolated in pure culture from another pilot whale both animals were involved in the Staffin MSE this is thought to be an incidental finding. The same organism was isolated in pure culture from the kidney and brain and in mixed culture from a single pilot whale that was found at Kyle of Lochalsh and may have been involved in the Staffin MSE. It was also isolated in mixed culture from the brain and CSF of a Sowerby's beaked whale and from the lung, brain, CSF and uterine fluid a juvenile pilot whale from Skye. *P. damselae* was also isolated from the liver, kidney and CSF of a Cuvier's beaked whale. The same organism was isolated from various organs of three white-beaked dolphins.

*Vibrio alginolyticus* was isolated in mixed culture from the lung and in pure culture from the liver of a harbour porpoise this is thought to be an incidental finding.

## 11.3 *Pasteurellaceae*

*Actinonbacillus delphinicola* was isolated from a harbour porpoise this is thought to be an incidental finding. The same organism was also isolated from the lungs of a white-beaked dolphin and the brain, placenta and foetus of a short-beaked common dolphin.

A *Pasteurella* sp. with a profile not seen before was isolated as an incidental finding from a harbour porpoise. A similar but not identical organism was isolated from the lungs of a white-beaked dolphin and a harbour porpoise.

*Actinonacillus Scotiae-like* organism was isolated from the CSF of one of pilot whales involved in the Staffin MSE this is thought to be an incidental finding.

*Haemophilus-like* organism was isolated from the lung of two long-finned pilot whales; this is thought to be an incidental finding. A similar but not identical organism was isolated from the lung of a harbour porpoise again this was thought to be an incidental finding.

## 11.4 *Granulicatella balaenopterae.*

This is a gram positive irregular rod only found in minke whales. This organism was isolated from three animals, two entanglement cases and an emaciated juvenile. All were from the lung and CSF, except the juvenile where it was also isolated from the liver.

## 11.5 *Streptococcus sp,*

*Streptococcus phocae* a pyogenic species adapted to seals was isolated from the liver of a moribund grey seal, and the lungs of two harbour seals the significance of this isolate in this case is uncertain.

An *α* haemolytic *Streptococcus sp.* with a profile not seen before was isolated from the liver and CSF of a striped dolphin.

## 11.6 *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 a kidney lesion in a Cuvier's beaked whale.

## 11.7 *Mycoplasma sp.*

A *Mycoplasma sp.* that could not be identified and did not match any of the known species was recovered from in mixed culture from the lung of a Risso's dolphin. This is the first time we have recovered a Mycoplasma sp. from a Risso's dolphin. The 16S rRNA sequence on the isolate did not give a clear match. From the 663bp sequence we obtained the closest matches were: M. equigenitalium (98%); M. elephantitis (98%) and Mycoplasma sp. ex phocoena (97%). It is therefore likely to be related to Mycoplasma sp. ex phocoena (which has been isolated from harbour porpoise); however the significance of this isolate is at present uncertain.

# Section 12: 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.

## 12.1 *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.

## 12.2 *Training courses*

### 12.2.1 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 we 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.

### 12.2.2 Kit contents

All those that pass the assessment will be issued a stranding kit which consists of:

- Lunch box containing:
- PM knife
- Sampling pots
- Sampling bags
- Rule
- Measuring tape
- Cut proof gloves
- Disposable gloves
- Scale bar
- Pen
- Pencil
- Pliers
- Bio bottle (for sending samples)
- Stranding Tags and cable ties
- Field sampling guide (report form)
- Stranding posters
- Prepaid postage labels
- Reference guides for sampling and posting
- CSIP leaflet (to aid with species identification)

These kits cost around £24-26 each in materials and are designed to be small enough to be easily carried and stored in the volunteers car. With the exception of the gloves, bio bottle and cut resistant gloves, most components are sourced from supermarkets or basic hardware stores.

Figure 56: Volunteer Stranding kit (cut resistant glove and bio bottle not shown)

### 12.2.3 Courses run 2015

Three courses were run in 2015 targeting Orkney, the north coast and Ayrshire

1. 8th-9th February 2015 Training course, necropsy demonstration and lecture on the stranding scheme for volunteers from the Orkney Field Club and the Orkney environmental health held in Kirkwall and at the NorthVets practice over two days.
2. 26th June 2015 course at Thurso SAC to Highland Council Countryside Rangers, SSPCA and BDMLR medics. This was particularly useful as we were able to train most of the Higland Ranger service in this region.
3. 9th December 2015 at Hessilhead Wildlife Rescue Trust near Beith, North Ayrshire. Hessilhead deserve particular thanks as they not only sample cases for SMASS but have made space for a freezer and will collect and store carcases waiting for necropsy. Given the travel time from Inverness to Ayrshire we are particularly grateful for this assistance

Figure 57: Volunteer training course Thurso SAC 26TH June 2015.

Since beginning this initiative in 2014, we have had 97 people attending courses, of which 95 were considered competent to be issued with a kit and wished to be a volunteer.

Figure 58: Orkney Stranding Volunteers training day one, 8th February 2015

Figure 59: Orkney Stranding Volunteers training day two, 9th February 2015

## 12.3 *Make up of volunteers*

Volunteers come from quite a wide range of backgrounds however most have some affiliation to NGO's, statutory body or education institutions

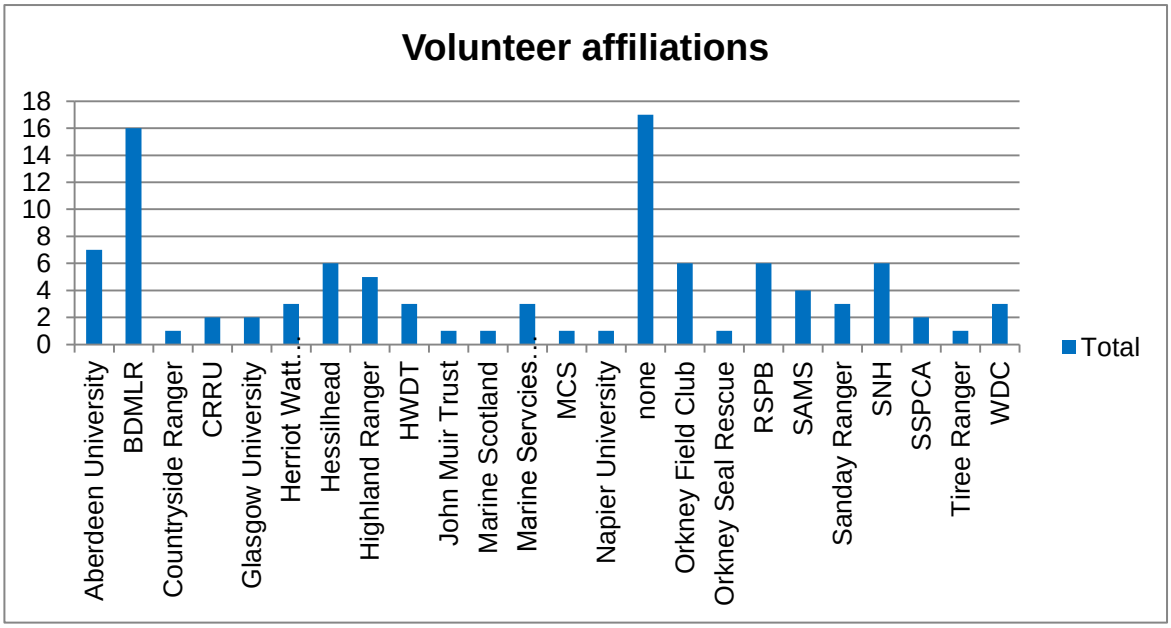



Figure 60: Volunteer affiliations

## 12.4 *Engagement with scheme since training.*

Since attending a course 63 different volunteers (62.3%) have been asked to attend a stranding. Of those 55 (87.3%) were able to go and, of the 55, 26 (47.2%) of those actually sampled an animal. Thirty-eight (37.6%) volunteers have yet to be asked to attend a stranding, largely due to no cases being reported in their area of coverage.

## 12.5 *Number of sampling visits by year*

In 2015 there were 20 sampling visits by trained volunteers with five volunteers sampling at least 2 animals and a further seven sampling one animal. These samples were from six species of cetacean and one species of seal.

## 12.6 *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 both the lecture, demonstration and support documentation. To date no health and safety issues have been encountered with trained volunteers, however an unsolicited sample sent by an untrained member of the public in 2014 did leak in the post. This highlighted the need to make sure samples are correctly packaged and our volunteers have bio bottles to enable the safe transportation of samples.

## 12.7 *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.

## 12.8 *Help with carcase collection*

Several volunteers have helped with the collection of carcases 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 was even able to organise transport of an adult leatherback turtle to the National Museum of Scotland at Granton where we were able to necropsy it.

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

## 12.9 *Volunteer coverage*

By the end of January 2016 SMASS has a total of 101 trained stranding volunteers with at least one volunteer on North, East and West coasts. There are two volunteers on Shetland and Eigg. There are also three volunteers on Mull (all 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 22 trained volunteers on Orkney and 16 volunteers able to cover the Caithness and Sutherland. However some volunteers have moved which means we have lost our only trained volunteer on Lewis and Harris but gained one on Colonsay and one in Fort William.

Figure 61: 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 Lewis, Harris, the Uists 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 proving difficult. Dumfries and Galloway is also lacking any volunteers and despite efforts we have yet to attract anyone, we are discussing this with the local BDMLR group in the hope of training some of them. Although not obvious from the map the course run at Hessilhead Wildlife Rescue Trust in December means we have good coverage of North and South Ayrshire. We also hope to increase our coverage in Shetland by running a course at Hillswick Wildlife Sanctuary in July 2016.

### 12.10 *Untrained samplers*

We have at present 4 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 and one on Orkney.

### 12.11 *Future work*

Obviously as shown above there are some gaps in our coverage. Notably the Western Isles in particular Lewis and Harris and Skye but also a lot of the smaller islands including Arran, Coll, Islay and Jura. We also only have two volunteers on Shetland. So 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 this; at the moment there is a definite net benefit to SMASS, in addition to more general engagement of the public in marine ecology and citizen science. We however will need to assess if the samples are being utilised by ourselves and our collaborators to justify this component of the programme.

## Section 13: 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.

- 24/1/15 Necropsy demonstration to Glasgow Veterinary School fourth and final year veterinary students
- 12/2/15 Necropsy demonstration for Aberdeen University Marine Science MSc students.

- 27/6/15 Talk to the residents of Sanday, Orkney followed by a necropsy demonstration on the following day
- 22/07/15 Necropsy demonstration to Catarina Fogaça a Vet from Portugal working with the CRRU visited us for advice on setting up a stranding network in Portugal.
- 04/08/15 Necropsy demonstration for the Cetacean Research and Rescue Unit (CRRU).
- 11/9/201515 Talk on the strandings project at the Black Isle sea kayak symposium hosted by the Aberdeen University lighthouse field station.
- 23/10/15 Necropsy demonstration for SMRU Masters students at Inverness.

Figure 62: Necropsy demonstration for veterinary students at Glasgow Vet School.

Figure 63: Necropsy Demonstration for Aberdeen University Masters students at Inverness.


Figure 64: Andrew giving a talk on the Stranding Scheme to the residents of Sanday, Orkney 27th June 2015

Figure 65: M251/15 Necropsy Demonstration for the Cetacean Research and Rescue Unit (CRRU).

Figure 66: M325/15 Necropsy Demonstration for SMRU Masters students at inverness.

Figure 67: M329/15 volunteer training course and necropsy demonstration at Hessilhead Wildlife Rescue Trust near Beith, North Ayrshire.

# Section 14: Outputs

## 14.1 *Overview*

In 2015, staff at the Scottish Marine Animal Strandings Scheme generated a total of eleven peer reviewed papers, eighteen conference presentations, and one conference poster.

## 14.2 *Publications*

- Monteiro, Sílvia, Marisa Ferreira, José V Vingada, Alfredo López, **Andrew Brownlow**, and Paula Méndez-fernandez. 2015. "Application of Stable Isotopes to Assess the Feeding Ecology of Long-Finned Pilot Whale (*Globicephala melas*) in the Northeast Atlantic Ocean." Journal of Experimental Marine Biology and Ecology 465: 56–63.

- Jensen, Silje-Kristin, Jean-Pierre Lacaze, Guillaume Hermann, Joanna Kershaw, **Andrew Brownlow**, Andrew Turner, and Ailsa Hall. 2015. "Detection and Effects of Harmful Algal Toxins in Scottish Harbour Seals and Potential Links to Population Decline." Toxicon 97: 1–14.

- Karen B. Register, Yury V. Ivanov, Eric T. Harvill, **Nick Davison** and **Geoffrey Foster**. (2015) Novel, host-restricted genotypes of *Bordetella bronchiseptica* associated with respiratory tract isolates. Microbiology 161, 580-592

- James Barnett, Akbar Dastjerdi, **Nick Davison**, Rob Deaville, David Everest, Julie Peake, Christopher Finnegan, Paul Jepson, Falko Steinbach. 2015. Identification of

Novel Cetacean Poxviruses in Cetaceans Stranded in South West England PLoS ONE 10(6): e0124315.

- Fernández, R., Schubert, M., Vargas-Velázquez, A.M., **Brownlow, A.,** Vikingsson, G.A., Siebert, U., Jensen, L.F., Øien, N., Wall, D., Rogan, E., Mikkelsen, B., Dabin, W., Alfarhan, A.H., Alquraishi, S.A., Al-Rasheid, A.S., Guillot, G., Orlando, L., 2015. A genome wide catalogue of single nucleotide polymorphisms in white-beaked and Atlantic white-sided dolphins. Molecular Ecology Resources, doi: 10.1111/1755-0998.12427.

- Sinéad Murphy, Jonathan L Barber, Jennifer A. Learmonth, Fiona L. Read, Robert Deaville, Matthew W. Perkins, **Andrew Brownlow, Nick Davison,** Rod Penrose, Graham J. Pierce, Robin J. Law, Paul D. Jepson. 2015 Reproductive Failure in UK Harbour Porpoises *Phocoena phocoena*: Legacy of Pollutant Exposure? PLOS ONE | DOI:10.1371/journal.pone.0131085 July 22, 2015.

- **Geoffrey Foster**, Adrian M. Whatmore, Mark P. Dagleish, Johanna L. Baily, Rob Deaville, **Nicholas J. Davison**, Mark S. Koylass, Lorraine L. Perrett, Emma J. Stubberfield, Robert J. Reid, and **Andrew C. Brownlow**. 2015 Isolation of Brucella ceti from a Long-finned Pilot Whale (*Globicephala melas*) and a Sowerby's Beaked Whale (*Mesoplodon bidens*) DOI: 10.7589/2014-04-112 Journal of Wildlife Diseases, 51(4).

- Sílvia S. Monteiro1, Paula Méndez-Fernandez, Stuart Piertney, Colin F. Moffat, Marisa Ferreira, José V. Vingada, Alfredo López, **Andrew Brownlow**, Paul Jepson, Bjarni Mikkelsen, Misty Niemeyer, José Carlos Carvalho, Graham J. Pierce. 2015 Long-finned pilot whale population diversity and structure in Atlantic waters assessed through biogeochemical and genetic markers. Marine Ecology Progress Series Vol. 536: 243–257 doi: 10.3354/meps11455

- **Nicholas J. Davison, Andrew Brownlow, Barry McGovern**, Mark P. Dagleish, Lorraine L. Perrett, Emma-Jane Dale, Mark Koylass, **Geoffrey Foster**. 2015 First report of Brucella ceti-associated meningoencephalitis in a long-finned pilot whale *Globicephala melas.* Diseases of Aquatic Organisms 116;237-241 doi:10.3354/dao02926 27/10/15

- 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)* in Science of the Total Environment 545-546:407-413.

- Sílvia S. Monteiro, Paula Méndez-Fernandez, Stuart Piertney, Colin F. Moffat, Marisa Ferreira, José V. Vingada, Alfredo López, **Andrew Brownlow**, Paul Jepson, Bjarni Mikkelsen, Misty Niemeyer, José Carlos Carvalho, Graham J. Pierce 2015. Population diversity and structure of long-finned pilot whale *Globicephala melas* in Atlantic

waters assessed through biogeochemical and genetic markers. in Marine Ecology Progress Series 536

## 14.3 *Conference Presentations*

- Long-term trends in diet and mortality in harbour porpoises in Scottish waters. Graham Pierce, Jessica Torode, Iris Thomsen, **Andrew Brownlow, Nicholas Davison,** Jennifer Learmonth , Fiona Read, Colin MacLeod , M. Begoña Santos. Presentation: European Cetacean Society Annual Conference in St Julians Malta 23rd-25th March 2015.
- 100 not out- a century of strandings monitoring in the UK. Deaville, R., Barnett, J., **Brownlow, A.,** Clery, M., **Davison, N.J.,** Lyal, R., Penrose, R., Perkins, M., Smith, B., Williams, R. and Jepson, P.D. Presentation: European Cetacean Society Annual Conference in St Julians Malta 23rd-25th March 2015.
- Global pollution (PCB) hotspots and European dolphin declines. Paul Jepson , Rob Deaville , Jonathan Barber , Àlex Aguilar , Asunción Borrell, Sinéad Murphy, Jon Barry, **Andrew Brownlow**, James Barnett , Simon Berrow , Andrew Cunningham, **Nick Davison**, Ruth Esteban, Marisa Ferreira, Andrew Foote, Tilen Genov , Joan Giménez , Jan Loveridge ,Ángela Llavona , Vidal Martin, David Maxwell , Alexandra Papachlimitzou , Rod Penrose , Matthew Perkins, Brian Smith , Renaud de Stephanis , Nick Tregenza, Philippe Verborgh, Antonio Fernandez. Presentation: European Cetacean Society Annual Conference in St Julians Malta 23rd-25th March 2015.
- Reproductive failure in UK harbour porpoises *Phocoena phocoena*: legacy of pollutant exposure? Murphy, S., Barber, J., Learmonth, J.A., Read, F.L, Deaville, R., Perkins, M., **Brownlow, A., Davison, N.,** Pierce, G.J., Law, R.J. and P.D. Jepson. Presentation: European Cetacean Society Annual Conference in St Julians Malta 23rd-25th March 2015.
- Evidence of acoustic trauma in long-finned pilot whale (September 2012 mass stranding, Scotland) Maria Morel, **Andrew Brownlow**, Robert E. Shad wick, Michel André Presentation: European Cetacean Society Annual Conference in St Julians Malta 23rd-25th March 2015.
- Application of stable isotopes to assess the feeding ecology of long-finned pilot whale (*Globicephala melas*) in the northeast Atlantic Ocean Silvia Monteiro , Marisa Ferreira , José V. Vingada, Alfredo López, **Andrew Brownlow**, Paula Méndez-Fernández. Presentation: European Cetacean Society Annual Conference in St Julians Malta 23rd-25th March 2015.
- Dead useful? Improving the ecological value of the strandings record as a monitoring tool. **Andrew Brownlow, Mariel ten Doeschate, Nick Davison**, Rob Deaville, Paul Jepson, Paul Thompson. Presentation: European Cetacean Society Annual Conference in St Julians Malta 23rd-25th March 2015.
- **Mariel ten Doeschate, Andrew Brownlow, Nick Davison**, Rob Deaville, Paul Jepson, Graham Pierce, Fiona Read, Paul Thompson. "The pathology of strandings data: methods to improve the ecological value of the strandings record as a monitoring tool". at ICES in Copenhagen, Denmark 24/09/2015.
- Rob Deaville, James Barnett, **Andrew Brownlow,** Molly Clery, **Nicholas Davison,** Rebecca Lyal, Roderick Penrose, Perkins Matthew, Brian Smith, Ruth Williams, Paul

Jepson. 100 not out- a century of strandings monitoring in the UK. At the 21ST Biennial Conference on the Biology of Marine Mammals San Francisco 13-18th December 2015

- Maria Morell, **Andrew Brownlow, Barry McGovern**, Robert Shadwick, Michel André Acoustic trauma compatible lesions in a long-finned pilot whale mass-stranded individual. At the 21st Biennial Conference on the Biology of Marine Mammals San Francisco 13-18th December 2015
- Dave Thompson, Joseph Onoufriou, Amanda Bishop, **Andrew Brownlow**. Not ships or sharks? Predation by grey seals may explain corkscrew seal deaths. At the 21st Biennial Conference on the Biology of Marine Mammals San Francisco 13-18th December 2015
- Joseph Onoufriou, Dave Thompson, Simon Moss, **Andrew Brownlow**. Pathological assessment of damage to grey seal carcases inflicted by a tidal turbine blade. At the 21st Biennial Conference on the Biology of Marine Mammals San Francisco 13-18th December 2015
- Milaja Nykanen, Marie Louis, Kristin Kaschner, Simon Ingram, Valentina Islas-Villanueva, Klaas Post, Henry Van der Es, Nathan Wales, **Andrew Brownlow, Nicholas Davison**, Rob Deaville, Vincent Ridoux, Willy Dabin, Emer Rogan, Andrew Foote. Reconstructing the post-glacial colonization of the northern extreme of the range of a top marine predator, the bottlenose dolphin. At the 21st Biennial Conference on the Biology of Marine Mammals San Francisco 13-18th December 2015.
- Joanna Kershaw, **Andrew Brownlow, Nicholas Davison**, Ailsa Hall. The Pleiotropic Role of Cetacean Blubber. At the 21st Biennial Conference on the Biology of Marine Mammals San Francisco 13-18th December 2015.
- Paul Jepson, Rob Deaville, Jonathan Barber, Alex Aguilar, Asunción Borrell, Sinead Murphy, Jon Barry, **Andrew Brownlow**, James Barnett, Simon Berrow, Andrew Cunningham, **Nicholas Davison**, Ruth Esteban, Marisa Ferreira, Andrew Foote, Tilen Genov, Joan Giménez, Jan Loveridge, Angela Llavona, Vidal Martin, David Maxwell, Alexandra Papachlimitzou, Roderick Penrose, Matthew Perkins, Brian Smith, Renaud de Stephanis, Nick Tregenza, Philippe Verborgh, Antonio Fernández, Robin Law. Toxic legacy? Severe PCB pollution in European dolphins. At the 21st Biennial Conference on the Biology of Marine Mammals San Francisco 13-18th December 2015.
- **Andrew Brownlow**, Joseph Onoufriou, **Nicholas Davison, Mariel ten Doeschate**, Steve Bexton, Dave Thompson. Emergence of the grey seal as a potentially significant predator of marine mammals. At the 21st Biennial Conference on the Biology of Marine Mammals San Francisco 13-18th December 2015.
- **Andrew Brownlow**, Paul Jepson. IWC workshop 2015 Small cetacean mass strandings UK. Andrew was an invited speaker at an IWC workshop on investigations of large mortality events, mass strandings, and international stranding response. San Francisco from 11/12/15 - 12/12/15
- **Andrew Brownlow, Nick Davison, Mariel ten Doeschate**, Rob Deaville, Paul Jepson. SMM workshop 2015 G. melas MSE, Staffin, Skye 13/12/15 Andrew presented a talk on the UK mass stranding response at a workshop prior to the Society for marine Mammalogy Biennial conference, San Francisco

## 14.4 *Conference Posters*

- Malta fever in a minke whale; the first confirmed report of the isolation of Brucella ceti in a minke whale (*Balaenoptera acutorostrata*) with associated pathology. **Nick J. Davison**, Lorraine L. Perrett, Claire Dawson, Mark Koylass, Mark P. Dagleish, Gary Haskins, Kate Hannigan, **Andrew Brownlow, Geoffrey Foster**. Poster presentation: European Cetacean Society Annual Conference in St Julians Malta 23rd-25th March 2015

## 14.5 *Other reports*

- The Report into the 2011 Kyle of Durness pilot whale Mass Stranding Event (MSE) was published on the DEFRA website and on the Strandings website. http://www.strandings.org/reports/Kyle_of_Durness_Mass_Stranding_Report.pdf

## 14.6 *Media*

There was a small amount of media interest in a Risso's dolphin that live stranded and was euthanased at Embo on 4th February.
http://www.scotsman.com/news/environment/rare-dolphin-dies-after-loch-fleet-stranding-1-3682633

A report on 4th February describing corkscrew seal injuries being inflicted on grey seal weaners by an adult male grey seal produced by SMRU and Marine Scotland did not result in a huge amount of media attention as first thought.
http://news.scotland.gov.uk/News/Research-into-seal-deaths-1597.aspx

http://www.bbc.co.uk/news/uk-scotland-31146971

http://www.dailymail.co.uk/news/article-2960808/Bizarre-seal-deaths-British-shores-featuring-corkscrew-injuries-blamed-cannibalism-hungry-adult-males.html

http://news.stv.tv/highlands-islands/309114-grey-seals-behind-corkscrew-spinal-injuries-instead-of-ship-propellers/

http://www.robedwards.com/2015/03/new-fears-over-corkscrew-injuries-to-seals.html

http://www.ibtimes.co.uk/cannibal-seals-responsible-mystery-corkscrew-pup-deaths-scotland-graphic-image-1486763

There was a large amount of media interest in the mass stranding event involving 21 pilot whales at Staffin on the Isle of Skye on 1st and 2nd June Though there seemed to be some confusion on the number of animals that actually died at the scene, which was seven. Both SMASS and CSIP team members attended along with volunteers from SMRU, Aberdeen University lighthouse field station and BDMLR.

http://www.bbc.co.uk/news/uk-scotland-highlands-islands-32973059

http://www.telegraph.co.uk/news/earth/wildlife/11645760/Three-pilot-whales-die-in-mass-stranding-off-Skye.html

https://www.pressandjournal.co.uk/fp/news/599570/hopes-rise-for-pilot-whales-after-stranding/

http://news.stv.tv/scotland/1322129-rescue-launched-by-bdmlr-after-pilot-whales-stranded-at-staffin-near-skye/

http://www.dailymail.co.uk/news/article-3107532/Desperate-rescue-effort-launched-save-nine-beached-pilot-whales-seven-die-rocks-Isle-Skye.html

http://www.ibtimes.co.uk/rescuers-race-against-time-save-pilot-whales-stranded-off-isle-skye-1504100

http://www.thetimes.co.uk/tto/news/uk/article4458448.ece

http://www.dailystar.co.uk/news/latest-news/445839/Nine-whales-die-twelve-rescued-off-coast-Isle-Skye

http://thehighlandtimes.com/news/2015/06/02/eight-whales-dead-after-mass-stranding-on-skye/

http://www.whaledolphintrust.co.uk/news_article.asp?news_id=433

The following week a juvenile female Humpback whale became entangled in some creel lines of Helmsdale and died despite efforts of BDMLR to try and release the animal. This attracted quite a bit of media attention too as the carcase is to be used in an ITV documentary entitled “whale fall” by Bigwave productions. Members of both SMASS and CSIP attended.

http://news.stv.tv/highlands-islands/1322372-rescue-launched-after-humpback-whale-tangled-in-rope-in-helmsdale/

http://news.stv.tv/highlands-islands/1322503-humpback-whale-found-tangled-in-rope-near-helmsdale-dies/

http://www.bbc.co.uk/news/uk-scotland-highlands-islands-33019949

http://www.bbc.co.uk/news/uk-scotland-highlands-islands-33046344

https://www.pressandjournal.co.uk/fp/news/islands/shetland/603616/humpback-whale-dies-caught-ropes-off-north-east-coast/

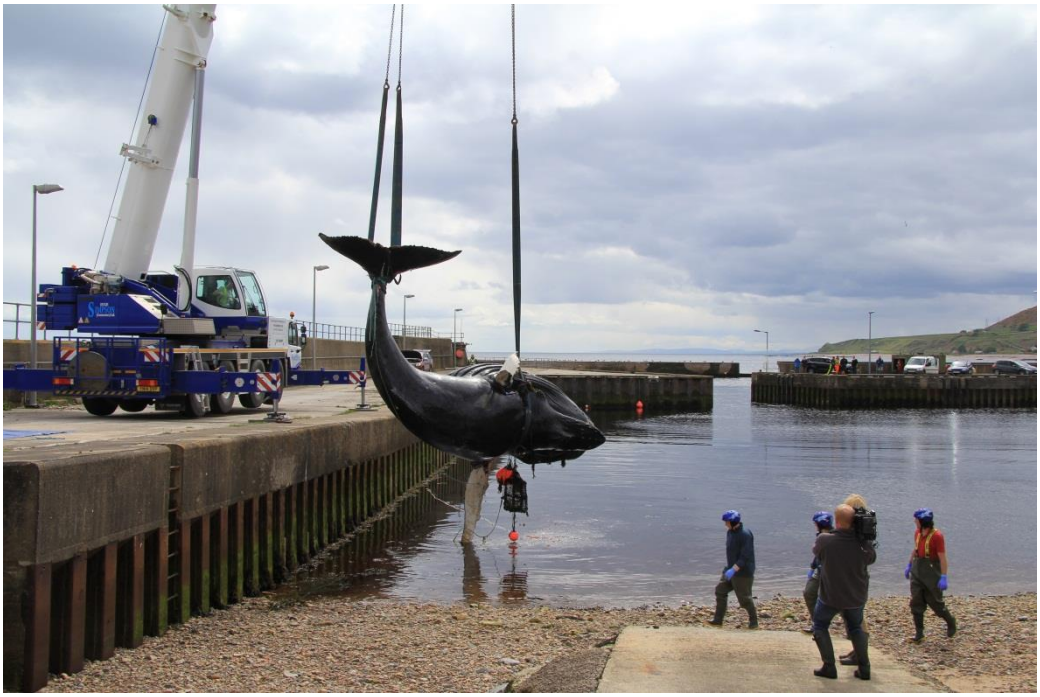


Figure 68: Humpback whale being lifted from the harbour at Helmsdale for transportation to Wales for Big Wave productions ITV documentary.

On 2 June the possible closure of the SAC Veterinary services Disease Surveillance centre Inverness was announced by SRUC management. The implications for SMASS, farm animal and terrestrial wildlife disease surveillance attracted considerable media coverage.

http://www.thenational.scot/news/whales-and-wildlife-under-threat-if-highland-lab-closes.4826

http://www.bbc.co.uk/news/uk-scotland-highlands-islands-33061146

http://www.robedwards.com/2015/07/whales-and-wildlife-under-threat-if-highland-animal-lab-closes.html

https://www.pressandjournal.co.uk/fp/news/inverness/620762/msps-voice-concern-alternative-specialist-vet-centre/

http://www.thescottishfarmer.co.uk/news/vets-under-threat.27117218

https://wpcluster.dctdigital.com/pressandjournal/fp/business/farming/623719/undefined-headline-1058/

https://www.pressandjournal.co.uk/fp/business/farming/628367/undefined-headline-1180/

http://www.himsps.org.uk/2015/06/highland-msp-sets-up-i-petition-to-garner-support-for-rural-college-in-inverness/

http://www.heraldscotland.com/business/farming/farmers-fight-proposed-closure-of-inverness-veterinary-surveillance-centre.130869940

http://www.fginsight.com/news/farmers-and-vets-warn-inverness-lab-closure-could-compromise-animal-health-4591

http://www.fwi.co.uk/news/plea-to-save-animal-vet-lab-from-closure.htm

http://www.highland-news.co.uk/News/Calls-for-Inverness-veterinary-disease-lab-to-be-saved-22062015.htm

http://mrcvs.co.uk/en/news/13333/Scottish-surveillance-centre-may-close-in-2015

http://www.thescottishfarmer.co.uk/mobile/news/sruc-urged-to-re-think.27294662

https://www.prospect.org.uk/news/id/2015/June/29/Coordinated-effort-needed-defeat-vet-lab-closure-plans

The publication on 24th June of the report into the Pilot MSE at the Kyle of Durness on attracted quite a lot of media attention. Some of the reporting was not entirely accurate.

http://www.theguardian.com/environment/2015/jun/24/royal-navy-bomb-explosions-mass-whale-deaths-report

http://news.stv.tv/highlands-islands/1323562-navy-bombs-at-cape-wrath-caused-mass-kyle-of-durness-whale-stranding/

http://www.telegraph.co.uk/news/earth/wildlife/8656327/Stranded-whales-return-to-open-water-at-Kyle-of-Durness.html

http://us.whales.org/news/2015/06/military-activity-probable-cause-of-mass-uk-whale-stranding-says-new-government-report

http://www.dailyrecord.co.uk/news/scottish-news/navys-underwater-bombs-a-major-5950953

http://www.dailystar.co.uk/news/latest-news/450152/Royal-Navy-bomb-explosions-killed-deafened-pilot-whales

https://www.pressandjournal.co.uk/fp/news/highlands/620302/underwater-bombs-caused-death-of-pilot-whales-report-confirms/

http://www.heraldscotland.com/news/home-news/animal-welfare-experts-call-for-changes-as-royal-navy-bomb-blasts-blamed-for-mass-wha.130153052

http://www.express.co.uk/scotland/586734/Whales-beaching-Scotland-deaths-Department-for-Environment

Towards the end of June a number of seals shot by licenced marksman from both the North and East coast some of which were submitted to SMASS made the local & national news.

https://www.pressandjournal.co.uk/fp/news/north-east/627329/seal-reportedly-shot-at-crovie/

http://www.dailymail.co.uk/news/article-3028571/Hundreds-seals-secretly-shot-British-coasts.html

http://aberdeenvoice.com/2014/04/usanscottish-wild-salmon-co-closer-look/

http://www.robedwards.com/2015/06/charges-looming-in-impassioned-battle-to-save-seals-from-being-shot.html

http://www.heraldscotland.com/news/home-news/seal-shooting-wars-reports-sent-to-fiscal.1435498698

http://www.express.co.uk/news/uk/586495/Seal-shooting-marksman-Crovie-Sea-Shepherd

A particularly rotten seal reported to us on the 27 July 2015 caused a bit of a bit of a stink after the council refused to remove it and let nature take its course.

http://www.fifetoday.co.uk/news/local-headlines/rotting-dead-seal-raises-a-stink-in-st-andrews-1-3868149

Andrew took part in the Costing the Earth programme on BBC Radio 4 Entitled "sounds of the seas" Transmitted on the 8 September 2015

http://www.bbc.co.uk/programmes/b068w44v

A Juvenile female long-finned pilot whale that live stranded and euthanased at Dunvegan, Skye on the 2th of October with evidence of violent interactions with bottlenose dolphins created quite a bit of media attention.

http://www.dailymail.co.uk/sciencetech/article-3296963/Did-DOLPHINS-attack-pilot-whale-Skye-Calf-teeth-marks-body-flippers-fin-down.html

http://www.bbc.co.uk/news/uk-scotland-highlands-islands-34671705

A loggerhead turtle live stranded at Irvine, Scotland on 5th December. The turtle was attended by members of British Divers Marine Life Rescue and taken to Oban Sea Life for assessment and rehabilitation. Unfortunately the animal died the following day and was collected by SMASS for necropsy.

http://www.dailyrecord.co.uk/news/local-news/endangered-turtle-washed-up-irvine-6980778

## 14.7 *Conferences/meetings*

- 13/02/15 Mariel gave a talk entitled "The pathology of stranding's data" to the Earth and Oceans science Dept. University of Galway Ireland.
- 22/03/15 Andrew, Nick and Mariel attended the Pathology workshop at the European Cetacean Society Conference in St Julians, Malta.
- 23/03/15- 25/03/15 Andrew, Nick and Mariel attended the European Cetacean Society Conference in St Julians, Malta. Where Andrew gave a talk on the ecological value of the strandings record as a monitoring tool, and Nick had a poster on Brucellosis in a Minke whale.


**Figure 69: Andrew Brownlow presenting a talk on the value of stranding data as a monitoring tool ECS 23/03/14**

- 05/05/15 Andrew gave an invited presentation Marine Scotland Science at the Marine lab Aberdeen on how the Stranding Scheme could contribute to the Monitoring in the Pentland Firth and the MeyGen Site.
- 15/06/15 Members of the SMASS team met with representatives from SMRU, Aberdeen University and SAMS to discuss future collaborations and necropsy sample collection procedures.
- 16/06/15 Meeting with members of the UK CSIP, SMASS, Edinburgh University staff and the Dutch Stranding scheme with aim of revising the European necropsy procedure and foster closer links between the UK and Dutch Schemes.
- Andrew was an invited speaker at an IWC workshop on investigations of large mortality events, mass strandings, and international stranding response. San Francisco from 11/12/15 - 12/12/15

Figure 70: Lonneke Ijsseldijk from the Dutch stranding Scheme assisting with a minke whale necropsy, Harris 19TH June 2015

- Andrew and Mariel attended the ICES in Copenhagen, Denmark 24/09/2015, Where Mariel gave a talk on the ecological value of the strandings record as a monitoring tool

## 14.8 *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 3700 likes and Twitter has 414 followers. Both still prove a valuable resource for the reporting of strandings to the scheme.

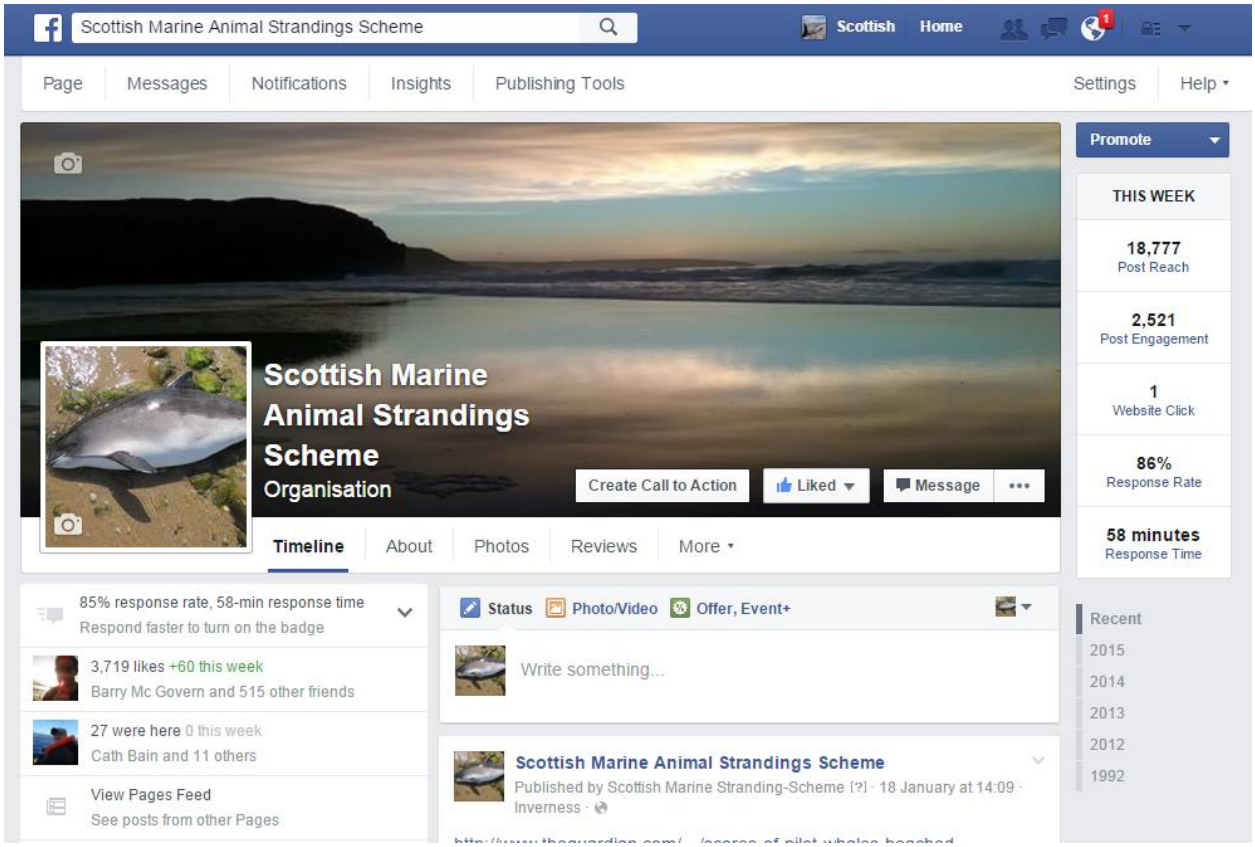



Figure 71: Facebook front page, Jan 2016.

## 14.9 *Data and sample requests*

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

### 14.9.1 Samples sent

- 26/01/14 Skin samples to Milaja Nykanen at University College Cork for Mitogenome work.
- 23/04/15 Porpoise Blubber samples for PCB analysis with a view to future collaboration on those species not routinely tested by CEFAS. Nickolette Varga Stirling University.
- 16/06/15 Skin/Muscle/Blubber samples for ongoing study into biopsy biochemistry. Jo Kershaw SMRU
- 16/06/15 Faeces and Urine for algal toxin work. Ailsa Hall SMRU.
- 13/10/2015 parasitic worms ex minke whale M319/15. Eileen Harris Senior Curator
- Parasites & Vectors Division Department of Life Sciences Natural History Museum Cromwell Road London SW7 5BD
- 26/10/2015 Harbour porpoise blubber and Liver samples for PCBS and HBCDs. Jon Barber CEFAS
- 29/10/2015 Tissue sample from basking shark M332/15. Cath Jones Senior Lecturer,

- Institute of Biological and Environmental Sciences, School of Biological Sciences,
- University of Aberdeen, Zoology Building, Tillydrone Avenue, Aberdeen, AB24 2TZ.
- 18/11/2015 Pilot whale MSE muscle samples for DNA extraction. Rachel Ball Chester University

### 14.9.2 Data sent

- 15/01/15 Data on Leatherback turtle (M311/14) from Dunbar, Zena Timmons National Museum of Scotland
- 04/02/15 Data on Leatherback turtle (M300/14) from Lochinver, Zena Timmons National Museum of Scotland
- 07/04/15 Data on Tursiops porpoise kills up to 2014, Kevin Robinson CRRU.
- 29/04/15 Data on the blubber thickness of Sowerby's beaked whales for biopsy depth determination. Patrick Miller, SMRU.
- 29/04/15 Data on potential samples for virus work (influenza, herpes etc.). Dave Everest APHA, Weybridge.
- 27/05/15 Data on killer whale strandings on the North and East coasts. Kevin Robinson CRRU.
- 14/10/15 Photos and PM reports on shot seals. Rob Harris SMRU.
- 09/11/15 Metadata on samples sent to National Museum of Scotland. Zena Timmons NMS
- 18/11/2015 Pilot whale MSE metadata. Rachel Ball Chester University

## 14.10 *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.
- Joanna Kershaw, SMRU. Harbour porpoise and large cetacean blubber samples.
- Michael Beddington, SAMS. Strandings location details for tidal drift modelling.
- 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.
- 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)
- Prof. Christina Fossi University of Siena Via Banchi di Sotto, 55, 4, 53100 Siena SI, Italy Samples sent for comparison of microplastics and pollutants in baleen whales in the Mediterranean and NE Atlantic.
- 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.
- Lilian Lieber University of Aberdeen, Skin & muscle from Basking sharks for DNA analysis.
- Sinead Murphy Marie Curie Research Fellow, Institute of Zoology. Reproductive failure in UK harbour porpoises and common dolphin blubber samples for Cetacean-Stressor
- 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.
- 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 15: 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. In June 2015 SRUC began a consultation process on a proposal to close this centre and relocate the work to alternative SRUC centres throughout Scotland. This had potentially serious implications for the delivery of strandings surveillance and the proposal also met with strong opposition from the veterinary and farming community, politicians and nature conservation bodies. In response, SRUC agreed that, although the existing Drummondhill site would close, a replacement facility would be provided in the Inverness region. Plans for a new facility are in development and it is hoped will this will provide the laboratory, post-mortem, tissue archive storage and office facilities required.

## Section 16: 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 2014, 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 medics, staff at the CRRU in Gardenstown, Ross Flett, Chris Booth, Jenni Kakkonen, Penny Martin of the Orkney Field club, the Hebridean Whale and Dolphin Trust, Hessilhead Wildlife Rescue Trust 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), Corinne Gordon (BDMLR), Donald Mitchell (Highland Ranger), Janie Steele, Ross Flett, Sorcha Cantwell (BDMLR), Jane Liptrot, Karl Hurd (BDMLR), Tasha McVarish, John Chester (Eigg), Conor Ryan (HWDT), Matt Barnes (MCS), and Ian Thompson and Bill Neil on South Uist.

## Appendix 1: Strandings 2015

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M2/15 | *Ziphius cavirostris* | Cuvier's beaked whale | 03/01/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M1/15 | *Phoca vitulina* | Harbour seal (Common seal) | 03/01/2015 | North Ayrshire | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M3/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 04/01/2015 | Fife | U | Not Examined: Insufficient Data |
| **Cetacean** | M10/15 | *Stenella coeruleoalba* | Striped dolphin | 04/01/2015 | Western Isles | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M5/15 | *Halichoerus grypus* | Grey seal | 05/01/2015 | Orkney | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M8/15 | *Halichoerus grypus* | Grey seal | 05/01/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M9/15 | *Halichoerus grypus* | Grey seal | 05/01/2015 | Orkney | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M7/15 | *Halichoerus grypus* | Grey seal | 05/01/2015 | Orkney | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M4/15 | *Halichoerus grypus* | Grey seal | 05/01/2015 | Orkney | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M26/15 | *Lagenorhynchus acutus* | Atlantic white-sided dolphin | 05/01/2015 | Orkney | U | Not Examined: Delay in Reporting |
| **Pinniped** | M6/15 | *Halichoerus grypus* | Grey seal | 05/01/2015 | Orkney | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M11/15 | *Halichoerus grypus* | Grey seal | 06/01/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M15/15 | *Halichoerus grypus* | Grey seal | 06/01/2015 | Orkney | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M12/15 | *Halichoerus grypus* | Grey seal | 07/01/2015 | Highland | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M14/15 | *Halichoerus grypus* | Grey seal | 07/01/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M13/15 | *Halichoerus grypus* | Grey seal | 07/01/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M16/15 | Pinniped (indeterminate | Seal (indeterminate species) | 08/01/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| | | species) | | | | | |
| **Pinniped** | M17/15 | *Halichoerus grypus* | Grey seal | 08/01/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M18/15 | *Globicephala melas* | Long-finned pilot whale | 09/01/2015 | Shetland | U | Not Examined: Morphometrics Taken |
| **Cetacean** | M20/15 | *Phocoena phocoena* | Harbour porpoise | 10/01/2015 | Highland | F | Physical Trauma: Storm exposure |
| **Cetacean** | M23.2/15 | *Stenella coeruleoalba* | Striped dolphin | 10/01/2015 | Fife | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M23.1/15 | *Stenella coeruleoalba* | Striped dolphin | 10/01/2015 | Fife | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Marine Turtle** | M19/15 | *Lepidochelys kempii* | Kemp's Ridley Turtle | 10/01/2015 | Argyll and Bute | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M25/15 | *Halichoerus grypus* | Grey seal | 12/01/2015 | Highland | F | Not Examined: Not Priority |
| **Pinniped** | M21/15 | *Halichoerus grypus* | Grey seal | 12/01/2015 | Fife | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M22/15 | *Halichoerus grypus* | Grey seal | 12/01/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M28/15 | *Halichoerus grypus* | Grey seal | 14/01/2015 | Orkney | U | Not Examined: Morphometrics Taken |
| **Cetacean** | M24/15 | *Delphinus delphis* | Short-beaked common dolphin | 14/01/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M31/15 | *Delphinus delphis* | Short-beaked common dolphin | 14/01/2015 | Argyll and Bute | M | Not Examined: Samples Taken |
| **Cetacean** | M27/15 | *Delphinus delphis* | Short-beaked common dolphin | 14/01/2015 | Western Isles | F | Not Examined: Samples Taken |
| **Pinniped** | M29/15 | *Halichoerus grypus* | Grey seal | 15/01/2015 | Orkney | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M30/15 | *Phocoena phocoena* | Harbour porpoise | 15/01/2015 | Angus | F | Pending |
| **Cetacean** | M67/15 | Odontocete (indeterminate species) | Dolphin (indeterminate species) | 16/01/2015 | Highland | U | Not Examined: Samples Taken |
| **Cetacean** | M32.1/15 | *Delphinus delphis* | Short-beaked common dolphin | 17/01/2015 | Western Isles | F | Pending |
| **Cetacean** | M33/15 | *Stenella coeruleoalba* | Striped dolphin | 17/01/2015 | Western Isles | F | Pending |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M32.2/15 | *Delphinus delphis* | Short-beaked common dolphin | 17/01/2015 | Western Isles | M | Pending |
| **Pinniped** | M35/15 | *Halichoerus grypus* | Grey seal | 18/01/2015 | Western Isles | U | Not Examined: Not Priority |
| **Pinniped** | M37/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 18/01/2015 | South Ayrshire | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M36/15 | *Halichoerus grypus* | Grey seal | 18/01/2015 | Western Isles | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M34/15 | *Halichoerus grypus* | Grey seal | 18/01/2015 | Western Isles | U | Not Examined: Not Priority |
| **Pinniped** | M42/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 19/01/2015 | Highland | U | Not Examined: Insufficient Data |
| **Pinniped** | M39/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 19/01/2015 | South Ayrshire | U | Not Examined: Insufficient Data |
| **Pinniped** | M43/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 19/01/2015 | Highland | U | Not Examined: Insufficient Data |
| **Pinniped** | M40/15 | *Phoca vitulina* | Harbour seal (Common seal) | 19/01/2015 | South Ayrshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M41/15 | *Halichoerus grypus* | Grey seal | 19/01/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M38/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 19/01/2015 | South Ayrshire | U | Not Examined: Insufficient Data |
| **Cetacean** | M44/15 | *Delphinus delphis* | Short-beaked common dolphin | 20/01/2015 | Argyll and Bute | M | Not Examined: Samples Taken |
| **Cetacean** | M59/15 | Odontocete (indeterminate species) | Short-beaked common dolphin/striped dolphin (indeterminate species) | 20/01/2015 | Argyll and Bute | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M50/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 22/01/2015 | Orkney | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M47/15 | *Halichoerus grypus* | Grey seal | 22/01/2015 | Orkney | U | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M49/15 | *Halichoerus grypus* | Grey seal | 22/01/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M48/15 | *Halichoerus grypus* | Grey seal | 22/01/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M51/15 | *Ziphius cavirostris* | Cuvier's beaked whale | 22/01/2015 | Argyll and Bute | M | Not Examined: Samples Taken |
| **Pinniped** | M46/15 | *Halichoerus grypus* | Grey seal | 22/01/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M45/15 | *Halichoerus grypus* | Grey seal | 22/01/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M54/15 | *Halichoerus grypus* | Grey seal | 26/01/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M53/15 | *Phoca vitulina* | Harbour seal (Common seal) | 26/01/2015 | Highland | U | Not Examined: Morphometrics Taken |
| **Cetacean** | M56/15 | *Delphinus delphis* | Short-beaked common dolphin | 26/01/2015 | Argyll and Bute | M | Not Examined: Samples Taken |
| **Cetacean** | M55/15 | *Orcinus orca* | Killer whale | 27/01/2015 | Western Isles | M | Not Examined: Samples Taken |
| **Pinniped** | M52/15 | *Halichoerus grypus* | Grey seal | 28/01/2015 | Orkney | U | Not Examined: Not Priority |
| **Cetacean** | M60/15 | *Grampus griseus* | Risso's dolphin | 29/01/2015 | Western Isles | U | Not Examined: Samples Taken |
| **Cetacean** | M57/15 | *Phocoena phocoena* | Harbour porpoise | 30/01/2015 | Argyll and Bute | M | Not Examined: Samples Taken |
| **Cetacean** | M58/15 | *Delphinus delphis* | Short-beaked common dolphin | 31/01/2015 | Western Isles | M | Physical Trauma: Storm exposure |
| **Cetacean** | M66/15 | Odontocete (indeterminate species) | Short-beaked common dolphin/striped dolphin (indeterminate species) | 01/02/2015 | Fife | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M75/15 | *Delphinus delphis* | Short-beaked common dolphin | 01/02/2015 | Orkney | M | Not Examined: Samples Taken |
| **Cetacean** | M65/15 | *Delphinus delphis* | Short-beaked common dolphin | 02/02/2015 | Highland | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M68/15 | *Phoca vitulina* | Harbour seal (Common seal) | 03/02/2015 | Argyll and Bute | U | Physical Trauma: Shot (suspected) |
| **Pinniped** | M62/15 | *Halichoerus grypus* | Grey seal | 03/02/2015 | South Ayrshire | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M63/15 | *Delphinus delphis* | Short-beaked common dolphin | 03/02/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M61/15 | *Phocoena phocoena* | Harbour porpoise | 03/02/2015 | Aberdeenshire | F | Pending |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M64/15 | *Grampus griseus* | Risso's dolphin | 04/02/2015 | Highland | M | Physical Trauma: Shot (Known) |
| **Pinniped** | M72/15 | *Halichoerus grypus* | Grey seal | 04/02/2015 | Shetland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M69/15 | *Halichoerus grypus* | Grey seal | 04/02/2015 | East Lothian | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M73/15 | *Delphinus delphis* | Short-beaked common dolphin | 04/02/2015 | Argyll and Bute | M | Not Examined: Samples Taken |
| **Pinniped** | M71/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 04/02/2015 | Aberdeenshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M70/15 | *Halichoerus grypus* | Grey seal | 05/02/2015 | South Ayrshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M74/15 | *Halichoerus grypus* | Grey seal | 06/02/2015 | Fife | U | Not Examined: Insufficient Data |
| **Pinniped** | M76/15 | *Phoca vitulina* | Harbour seal (Common seal) | 11/02/2015 | Highland | U | Physical Trauma: Shot (suspected) |
| **Pinniped** | M77/15 | *Halichoerus grypus* | Grey seal | 11/02/2015 | Orkney | M | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Cetacean** | M85/15 | *Delphinus delphis* | Short-beaked common dolphin | 11/02/2015 | Argyll and Bute | U | Not Examined: Morphometrics Taken |
| **Cetacean** | M79/15 | *Phocoena phocoena* | Harbour porpoise | 14/02/2015 | Argyll and Bute | M | Not Examined: Samples Taken |
| **Pinniped** | M114/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 15/02/2015 | Highland | U | Not Examined: Morphometrics Taken |
| **Cetacean** | M80/15 | *Delphinus delphis* | Short-beaked common dolphin | 16/02/2015 | Aberdeenshire | U | Not Examined: Morphometrics Taken |
| **Cetacean** | M83/15 | *Delphinus delphis* | Short-beaked common dolphin | 16/02/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M82/15 | *Grampus griseus* | Risso's dolphin | 16/02/2015 | Shetland | F | Pending |
| **Pinniped** | M78/15 | *Halichoerus grypus* | Grey seal | 16/02/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M84/15 | *Phocoena phocoena* | Harbour porpoise | 20/02/2015 | Aberdeenshire | U | Not Examined: Removed by Tide |
| **Cetacean** | M87/15 | *Phocoena phocoena* | Harbour porpoise | 21/02/2015 | Western Isles | F | Not Examined: Weather/travel difficulties |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M86/15 | *Globicephala melas* | Long-finned pilot whale | 22/02/2015 | Shetland | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M88/15 | *Phocoena phocoena* | Harbour porpoise | 23/02/2015 | Angus | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M97/15 | *Halichoerus grypus* | Grey seal | 26/02/2015 | Orkney | U | Physical Trauma: Shot (Known) |
| **Cetacean** | M89/15 | *Physeter Macrocephalus* | Sperm whale | 27/02/2015 | Western Isles | M | Not Examined: Samples Taken |
| **Pinniped** | M90/15 | *Halichoerus grypus* | Grey seal | 27/02/2015 | Fife | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M92/15 | *Physeter Macrocephalus* | Sperm whale | 28/02/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M93/15 | *Delphinus delphis* | Short-beaked common dolphin | 01/03/2015 | Argyll and Bute | U | Not Examined: Weather/travel difficulties |
| **Pinniped** | M91/15 | *Halichoerus grypus* | Grey seal | 01/03/2015 | Dumfries and Galloway | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M94/15 | *Halichoerus grypus* | Grey seal | 02/03/2015 | Highland | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M95/15 | *Halichoerus grypus* | Grey seal | 02/03/2015 | Aberdeenshire | U | Not Examined: Insufficient Data |
| **Pinniped** | M96/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 05/03/2015 | Moray | U | Not Examined: Insufficient Data |
| **Pinniped** | M98/15 | *Halichoerus grypus* | Grey seal | 07/03/2015 | Aberdeenshire | U | Not Examined: Insufficient Data |
| **Pinniped** | M100/15 | *Halichoerus grypus* | Grey seal | 08/03/2015 | South Ayrshire | U | Not Examined: Insufficient Data |
| **Cetacean** | M104/15 | *Physeter Macrocephalus* | Sperm whale | 08/03/2015 | Argyll and Bute | U | Not Examined: Samples Taken |
| **Cetacean** | M99/15 | *Delphinus delphis* | Short-beaked common dolphin | 08/03/2015 | Western Isles | U | Not Examined: Weather/travel difficulties |
| **Cetacean** | M101/15 | *Stenella coeruleoalba* | Striped dolphin | 08/03/2015 | Highland | M | Pending |
| **Pinniped** | M107/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 11/03/2015 | Fife | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M81/15 | *Physeter Macrocephalus* | Sperm whale | 13/03/2015 | Shetland | M | Not Examined: At Sea |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M102/15 | Odontocete (indeterminate species) | Short-beaked common dolphin/striped dolphin (indeterminate species) | 15/03/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M105/15 | *Phocoena phocoena* | Harbour porpoise | 15/03/2015 | Dumfries and Galloway | U | Not Examined: Carcase Unrecoverable |
| **Cetacean** | M103/15 | *Phocoena phocoena* | Harbour porpoise | 16/03/2015 | East Lothian | M | Not Examined: Morphometrics Taken |
| **Pinniped** | M110/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 17/03/2015 | Fife | U | Not Examined: Insufficient Data |
| **Pinniped** | M112/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 17/03/2015 | Fife | U | Not Examined: Insufficient Data |
| **Pinniped** | M108/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 17/03/2015 | South Ayrshire | U | Not Examined: Insufficient Data |
| **Pinniped** | M111/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 17/03/2015 | Fife | U | Not Examined: Insufficient Data |
| **Cetacean** | M113/15 | Odontocete (indeterminate species) | Short-beaked common dolphin/striped dolphin (indeterminate species) | 17/03/2015 | Argyll and Bute | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M109/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 17/03/2015 | Fife | U | Not Examined: Insufficient Data |
| **Cetacean** | M106/15 | *Phocoena phocoena* | Harbour porpoise | 17/03/2015 | Aberdeenshire | U | Not Examined: Removed by Tide |
| **Pinniped** | M115/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 23/03/2015 | Aberdeenshire | U | Not Examined: Insufficient Data |
| **Pinniped** | M116/15 | *Halichoerus grypus* | Grey seal | 23/03/2015 | City of Dundee | U | Not Examined: Removed by Council |
| **Pinniped** | M123/15 | *Halichoerus grypus* | Grey seal | 24/03/2015 | Fife | F | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M117/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 26/03/2015 | West Dunbartonshire | U | Not Examined: Insufficient Data |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M118/15 | *Halichoerus grypus* | Grey seal | 27/03/2015 | Aberdeenshire | F | Not Examined: Advanced Autolysis |
| **Cetacean** | M119/15 | *Phocoena phocoena* | Harbour porpoise | 31/03/2015 | Aberdeenshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M120/15 | *Halichoerus grypus* | Grey seal | 01/04/2015 | Aberdeenshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M121/15 | *Halichoerus grypus* | Grey seal | 02/04/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M122/15 | *Globicephala melas* | Long-finned pilot whale | 02/04/2015 | Argyll and Bute | F | Not Examined: Weather/travel difficulties |
| **Cetacean** | M126/15 | Odontocete (indeterminate species) | Dolphin (indeterminate species) | 03/04/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M125/15 | *Phocoena phocoena* | Harbour porpoise | 03/04/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M124/15 | *Phoca vitulina* | Harbour seal (Common seal) | 03/04/2015 | Moray | F | Physical Trauma: Shot (Known) |
| **Pinniped** | M127/15 | *Halichoerus grypus* | Grey seal | 17/04/2015 | Angus | F | Not Examined: Advanced Autolysis |
| **Cetacean** | M128/15 | *Stenella coeruleoalba* | Striped dolphin | 18/04/2015 | Western Isles | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M138/15 | *Halichoerus grypus* | Grey seal | 19/04/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M129/15 | *Phocoena phocoena* | Harbour porpoise | 19/04/2015 | City of Edinburgh | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M131/15 | *Phocoena phocoena* | Harbour porpoise | 23/04/2015 | Aberdeenshire | M | Physical Trauma: Bottlenose Dolphin Attack |
| **Cetacean** | M134/15 | *Delphinus delphis* | Short-beaked common dolphin | 26/04/2015 | Western Isles | F | Pending |
| **Cetacean** | M135/15 | Odontocete (indeterminate species) | Short-beaked common dolphin/striped dolphin (indeterminate species) | 26/04/2015 | Western Isles | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M139/15 | *Phoca vitulina* | Harbour seal (Common seal) | 27/04/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M136/15 | *Halichoerus grypus* | Grey seal | 27/04/2015 | Aberdeenshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M137/15 | *Phoca vitulina* | Harbour seal (Common seal) | 27/04/2015 | Highland | M | Starvation/Hypothermia |
| **Cetacean** | M140/15 | Cetacean | Cetacean (indeterminate | 30/04/2015 | South Ayrshire | U | Not Examined: Insufficient Data |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| | | (indeterminate species) | species) | | | | |
| **Pinniped** | M141/15 | *Halichoerus grypus* | Grey seal | 03/05/2015 | Aberdeenshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M142/15 | *Halichoerus grypus* | Grey seal | 04/05/2015 | Fife | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M144/15 | *Phocoena phocoena* | Harbour porpoise | 07/05/2015 | Highland | F | Physical Trauma: Other |
| **Cetacean** | M143/15 | *Phocoena phocoena* | Harbour porpoise | 07/05/2015 | Argyll and Bute | U | Live Stranding: Successful refloat |
| **Cetacean** | M145/15 | *Phocoena phocoena* | Harbour porpoise | 12/05/2015 | Dumfries and Galloway | F | Not Examined: Insufficient Data |
| **Pinniped** | M146/15 | *Halichoerus grypus* | Grey seal | 13/05/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M147/15 | *Phoca vitulina* | Harbour seal (Common seal) | 14/05/2015 | Inverclyde | M | Physical Trauma: Other |
| **Pinniped** | M148/15 | *Halichoerus grypus* | Grey seal | 16/05/2015 | Moray | F | Not Examined: Morphometrics Taken |
| **Cetacean** | M149/15 | *Delphinus delphis* | Short-beaked common dolphin | 18/05/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M150/15 | *Globicephala melas* | Long-finned pilot whale | 19/05/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M152/15 | *Mesoplodon bidens* | Sowerby's beaked whale | 21/05/2015 | Western Isles | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M151/15 | *Phocoena phocoena* | Harbour porpoise | 21/05/2015 | Argyll and Bute | M | Not Examined: Samples Taken |
| **Pinniped** | M153/15 | *Halichoerus grypus* | Grey seal | 25/05/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M155/15 | *Grampus griseus* | Risso's dolphin | 25/05/2015 | Western Isles | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M154/14 | *Halichoerus grypus* | Grey seal | 25/05/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M157/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 26/05/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M158/15 | *Grampus griseus* | Risso's dolphin | 26/05/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M156/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 26/05/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M197/15 | *Halichoerus grypus* | Grey seal | 28/05/2015 | Aberdeenshire | M | Physical Trauma: Shot (Known) |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M160/15 | *Lagenorhynchus acutus* | Atlantic white-sided dolphin | 30/05/2015 | Western Isles | F | Not Examined: Advanced Autolysis |
| **Cetacean** | M159/15 | *Delphinus delphis* | Short-beaked common dolphin | 30/05/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M196/15 | *Delphinus delphis* | Short-beaked common dolphin | 01/06/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M161.9/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.3/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | F | Live Stranding: Unsuccessful refloat |
| **Cetacean** | M161.17/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.4/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | F | Live Stranding |
| **Cetacean** | M161.21/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.20/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.8/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.5/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | F | Live Stranding |
| **Cetacean** | M161.1/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | F | Live Stranding |
| **Cetacean** | M161.18/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.12/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.15/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M164/15 | *Balaenoptera acutorostrata* | Minke whale | 02/06/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M161.6/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | F | Dystocia/Stillborn |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M161.14/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.2/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | F | Live Stranding: Unsuccessful refloat |
| **Pinniped** | M198/15 | *Halichoerus grypus* | Grey seal | 02/06/2015 | Aberdeenshire | F | Physical Trauma: Shot (Known) |
| **Cetacean** | M161.10/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.16/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.19/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.13/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Cetacean** | M161.7/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | F | Live Stranding |
| **Cetacean** | M161.11/15 | *Globicephala melas* | Long-finned pilot whale | 02/06/2015 | Highland | U | Live Stranding: Successful refloat |
| **Pinniped** | M170/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 03/06/2015 | Moray | U | Not Examined: Insufficient Data |
| **Cetacean** | M163/15 | *Megaptera novaeangliae* | Humpback whale | 04/06/2015 | Highland | F | Physical Trauma: Entanglement (Known) |
| **Cetacean** | M162/15 | *Globicephala melas* | Long-finned pilot whale | 04/06/2015 | Highland | F | Live Stranding |
| **Cetacean** | M165/15 | Cetacean (indeterminate species) | Cetacean (indeterminate species) | 04/06/2015 | Argyll and Bute | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M190/15 | *Orcinus orca* | Killer whale | 05/06/2015 | Shetland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M166/15 | *Halichoerus grypus* | Grey seal | 06/06/2015 | Aberdeenshire | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M172/15 | *Phocoena phocoena* | Harbour porpoise | 06/06/2015 | Argyll and Bute | U | Not Examined: At Sea |
| **Cetacean** | M168/15 | *Phocoena phocoena* | Harbour porpoise | 07/06/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M169/15 | *Phocoena phocoena* | Harbour porpoise | 08/06/2015 | Argyll and Bute | U | Not Examined: Insufficient Data |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M167/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 08/06/2015 | City of Aberdeen | U | Not Examined: Insufficient Data |
| **Cetacean** | M171/15 | *Globicephala melas* | Long-finned pilot whale | 10/06/2015 | Orkney | F | Live Stranding: Successful refloat |
| **Cetacean** | M184/15 | *Ziphius cavirostris* | Cuvier's beaked whale | 10/06/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M179/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 12/06/2015 | Argyll and Bute | U | Not Examined: Insufficient Data |
| **Pinniped** | M173/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 14/06/2015 | Aberdeenshire | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M176/15 | *Globicephala melas* | Long-finned pilot whale | 15/06/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M175/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 15/06/2015 | City of Edinburgh | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M174/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 15/06/2015 | Highland | U | Not Examined: Insufficient Data |
| **Cetacean** | M180/15 | *Balaenoptera acutorostrata* | Minke whale | 16/06/2015 | Western Isles | M | Physical Trauma: Entanglement (Known) |
| **Pinniped** | M177/15 | *Halichoerus grypus* | Grey seal | 18/06/2015 | Aberdeenshire | F | Physical Trauma: Shot |
| **Cetacean** | M185/15 | *Phocoena phocoena* | Harbour porpoise | 18/06/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M182/15 | *Phocoena phocoena* | Harbour porpoise | 19/06/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M181/15 | *Halichoerus grypus* | Grey seal | 19/06/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M183/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 19/06/2015 | Highland | U | Not Examined: Insufficient Data |
| **Pinniped** | M178/15 | *Halichoerus grypus* | Grey seal | 20/06/2015 | Highland | F | Physical Trauma: Shot |
| **Cetacean** | M186/15 | *Phocoena phocoena* | Harbour porpoise | 21/06/2015 | Highland | F | Maternal Separation/Starvation |
| **Cetacean** | M193/15 | *Ziphius cavirostris* | Cuvier's beaked whale | 21/06/2015 | Argyll and Bute | U | Not Examined: Carcase |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| | | | | | | | Incomplete/Scavenger Damage |
| **Cetacean** | M199/15 | *Delphinus delphis* | Short-beaked common dolphin | 22/06/2015 | Argyll and Bute | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M187/15 | *Mesoplodon bidens* | Sowerby's beaked whale | 22/06/2015 | Western Isles | M | Meningoencephalitis |
| **Pinniped** | M188/15 | *Halichoerus grypus* | Grey seal | 22/06/2015 | Highland | U | Physical Trauma: Shot (suspected) |
| **Pinniped** | M192/15 | *Halichoerus grypus* | Grey seal | 25/06/2015 | Highland | U | Physical Trauma: Shot |
| **Pinniped** | M191/15 | *Halichoerus grypus* | Grey seal | 25/06/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M189/15 | *Balaenoptera acutorostrata* | Minke whale | 25/06/2015 | Shetland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M195/15 | *Globicephala melas* | Long-finned pilot whale | 25/06/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M194/15 | *Phocoena phocoena* | Harbour porpoise | 26/06/2015 | Argyll and Bute | F | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M201/15 | *Phocoena phocoena* | Harbour porpoise | 28/06/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M200/15 | *Phocoena phocoena* | Harbour porpoise | 30/06/2015 | Inverclyde | U | Not Examined: Insufficient Data |
| **Cetacean** | M219/15 | *Globicephala melas* | Long-finned pilot whale | 01/07/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M203/15 | *Globicephala melas* | Long-finned pilot whale | 02/07/2015 | Highland | F | Not Examined: Samples Taken |
| **Cetacean** | M202/15 | Odontocete (indeterminate species) | Short-beaked common dolphin/striped dolphin (indeterminate species) | 02/07/2015 | Orkney | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M204/15 | *Halichoerus grypus* | Grey seal | 02/07/2015 | Aberdeenshire | F | Physical Trauma: Shot |
| **Pinniped** | M205/15 | *Phoca vitulina* | Harbour seal (Common seal) | 05/07/2015 | Highland | U | Not Examined: Insufficient Data |
| **Cetacean** | M206/15 | *Phocoena phocoena* | Harbour porpoise | 05/07/2015 | Dumfries and Galloway | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M207/15 | *Phoca vitulina* | Harbour seal (Common seal) | 06/07/2015 | Highland | U | Not Examined: Weather/travel difficulties |
| **Pinniped** | M208/15 | *Halichoerus grypus* | Grey seal | 06/07/2015 | Aberdeenshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M209/15 | *Halichoerus grypus* | Grey seal | 07/07/2015 | City of Dundee | U | Not Examined: Carcase Incomplete/Scavenger Damage |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M210/15 | *Globicephala melas* | Long-finned pilot whale | 07/07/2015 | Highland | M | Not Examined: Advanced Autolysis |
| **Cetacean** | M211/15 | *Phocoena phocoena* | Harbour porpoise | 08/07/2015 | Inverclyde | F | Not Examined: Samples Taken |
| **Cetacean** | M212/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 08/07/2015 | Orkney | M | Not Examined: Samples Taken |
| **Cetacean** | M214/15 | *Phocoena phocoena* | Harbour porpoise | 09/07/2015 | Highland | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M213/15 | *Halichoerus grypus* | Grey seal | 09/07/2015 | Moray | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M220/15 | *Halichoerus grypus* | Grey seal | 12/07/2015 | East Lothian | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M216/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 12/07/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M217/15 | *Halichoerus grypus* | Grey seal | 13/07/2015 | City of Aberdeen | U | Not Examined: Not Priority |
| **Pinniped** | M218/15 | *Halichoerus grypus* | Grey seal | 14/07/2015 | Highland | F | Physical Trauma: Shot (Known) |
| **Cetacean** | M221/15 | *Phocoena phocoena* | Harbour porpoise | 14/07/2015 | North Ayrshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M241/15 | *Halichoerus grypus* | Grey seal | 14/07/2015 | Aberdeenshire | F | Physical Trauma: Shot (Known) |
| **Pinniped** | M222/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 16/07/2015 | Shetland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M223/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 16/07/2015 | Argyll and Bute | U | Not Examined: Insufficient Data |
| **Pinniped** | M225/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 16/07/2015 | Argyll and Bute | U | Not Examined: Insufficient Data |
| **Cetacean** | M230/15 | *Phocoena phocoena* | Harbour porpoise | 16/07/2015 | Highland | U | Not Examined: At Sea |
| **Pinniped** | M226/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 16/07/2015 | Argyll and Bute | U | Not Examined: Insufficient Data |
| **Pinniped** | M224/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 16/07/2015 | Argyll and Bute | U | Not Examined: Insufficient Data |
| **Pinniped** | M278/15 | *Phoca vitulina* | Harbour seal (Common | 17/07/2015 | North Ayrshire | U | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| | | | seal) | | | | |
| **Pinniped** | M227/15 | *Phoca vitulina* | Harbour seal (Common seal) | 17/07/2015 | Fife | M | Physical Trauma: Spiral "Corkscrew" Lesions |
| **Cetacean** | M232/15 | *Grampus griseus* | Risso's dolphin | 18/07/2015 | Shetland | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M229/15 | *Delphinus delphis* | Short-beaked common dolphin | 18/07/2015 | Argyll and Bute | U | Live Stranding: Successful refloat |
| **Cetacean** | M234/15 | *Balaenoptera acutorostrata* | Minke whale | 19/07/2015 | Highland | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M231/15 | *Halichoerus grypus* | Grey seal | 19/07/2015 | Angus | F | Physical Trauma: Shot (Known) |
| **Cetacean** | M242.2/15 | *Globicephala melas* | Long-finned pilot whale | 20/07/2015 | Highland | F | Not Examined: Samples Taken |
| **Cetacean** | M242.1/15 | *Globicephala melas* | Long-finned pilot whale | 20/07/2015 | Highland | M | Not Examined: Samples Taken |
| **Cetacean** | M237/15 | *Phocoena phocoena* | Harbour porpoise | 21/07/2015 | Dumfries and Galloway | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M235/15 | *Halichoerus grypus* | Grey seal | 21/07/2015 | Dumfries and Galloway | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M236/15 | *Halichoerus grypus* | Grey seal | 21/07/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M238/15 | *Halichoerus grypus* | Grey seal | 22/07/2015 | Highland | M | Physical Trauma: Shot (Known) |
| **Cetacean** | M247/15 | Cetacean (indeterminate species) | Cetacean (indeterminate species) | 22/07/2015 | South Ayrshire | U | Not Examined: Insufficient Data |
| **Pinniped** | M233/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 22/07/2015 | Highland | U | Not Examined: Insufficient Data |
| **Cetacean** | M240/15 | *Stenella coeruleoalba* | Striped dolphin | 23/07/2015 | Western Isles | M | Not Examined: Weather/travel difficulties |
| **Cetacean** | M239/15 | *Phocoena phocoena* | Harbour porpoise | 23/07/2015 | Orkney | M | Not Examined: Samples Taken |
| **Cetacean** | M243/15 | *Tursiops truncatus* | Bottlenose dolphin | 25/07/2015 | Strathclyde | M | Live Stranding |
| **Pinniped** | M251/15 | *Phoca vitulina* | Harbour seal (Common seal) | 26/07/2015 | Highland | F | Physical Trauma: Spiral "Corkscrew" Lesions |
| **Pinniped** | M248/15 | *Halichoerus grypus* | Grey seal | 27/07/2015 | Fife | F | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M249/15 | *Phoca vitulina* | Harbour seal (Common seal) | 27/07/2015 | Highland | F | Physical Trauma: Spiral "Corkscrew" Lesions |
| **Pinniped** | M245/15 | *Phoca vitulina* | Harbour seal (Common seal) | 27/07/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M246/15 | *Phoca vitulina* | Harbour seal (Common seal) | 27/07/2015 | Highland | M | Physical Trauma: Other |
| **Pinniped** | M244/15 | *Halichoerus grypus* | Grey seal | 27/07/2015 | Fife | F | Pending |
| **Pinniped** | M250/15 | *Halichoerus grypus* | Grey seal | 27/07/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M253/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 28/07/2015 | Highland | M | Not Examined: Samples Taken |
| **Cetacean** | M252/15 | *Phocoena phocoena* | Harbour porpoise | 28/07/2015 | Dumfries and Galloway | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M254/15 | *Halichoerus grypus* | Grey seal | 28/07/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M259/15 | *Halichoerus grypus* | Grey seal | 30/07/2015 | Fife | F | Physical Trauma: Spiral "Corkscrew" Lesions |
| **Cetacean** | M255/15 | *Phocoena phocoena* | Harbour porpoise | 30/07/2015 | North Ayrshire | U | Not Examined: Removed by Tide |
| **Pinniped** | M261/15 | *Halichoerus grypus* | Grey seal | 30/07/2015 | Angus | F | Physical Trauma: Shot (Known) |
| **Pinniped** | M256/15 | *Phoca vitulina* | Harbour seal (Common seal) | 01/08/2015 | Fife | U | Not Examined: At Sea |
| **Cetacean** | M273/15 | *Grampus griseus* | Risso's dolphin | 01/08/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M257/15 | *Phocoena phocoena* | Harbour porpoise | 01/08/2015 | Aberdeenshire | M | Pending |
| **Pinniped** | M258/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 02/08/2015 | Angus | U | Not Examined: Insufficient Data |
| **Cetacean** | M260/15 | *Globicephala melas* | Long-finned pilot whale | 03/08/2015 | Western Isles | M | Not Examined: Samples Taken |
| **Pinniped** | M263/15 | *Halichoerus grypus* | Grey seal | 03/08/2015 | Highland | U | Physical Trauma: Shot (suspected) |
| **Cetacean** | M262/15 | *Globicephala melas* | Long-finned pilot whale | 05/08/2015 | Highland | M | Live Stranding |
| **Pinniped** | M264/15 | *Phoca vitulina* | Harbour seal (Common seal) | 05/08/2015 | Fife | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M265/15 | *Lagenorhynchus* | White-beaked dolphin | 06/08/2015 | Highland | U | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| | | *albirostris* | | | | | |
| **Pinniped** | M266/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 07/08/2015 | Fife | U | Not Examined: Insufficient Data |
| **Cetacean** | M267.2/15 | *Delphinus delphis* | Short-beaked common dolphin | 08/08/2015 | Fife | F | Live Stranding: Unsuccessful refloat |
| **Cetacean** | M267.1/15 | *Delphinus delphis* | Short-beaked common dolphin | 08/08/2015 | Fife | F | Live Stranding: Successful refloat |
| **Cetacean** | M269/15 | *Phocoena phocoena* | Harbour porpoise | 11/08/2015 | Moray | F | Physical Trauma: Bottlenose Dolphin Attack |
| **Pinniped** | M268/15 | *Phoca vitulina* | Harbour seal (Common seal) | 11/08/2015 | Western Isles | U | Not Examined: Not Priority |
| **Cetacean** | M270/15 | *Phocoena phocoena* | Harbour porpoise | 16/08/2015 | North Ayrshire | F | Not Examined: Weather/travel difficulties |
| **Pinniped** | M286/15 | *Phoca vitulina* | Harbour seal (Common seal) | 16/08/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M271/15 | *Phoca vitulina* | Harbour seal (Common seal) | 18/08/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M277/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 20/08/2015 | Fife | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M272/15 | *Phocoena phocoena* | Harbour porpoise | 21/08/2015 | North Ayrshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M276/15 | *Phoca vitulina* | Harbour seal (Common seal) | 24/08/2015 | Highland | U | Not Examined: Not Priority |
| **Pinniped** | M274/15 | *Halichoerus grypus* | Grey seal | 25/08/2015 | Highland | F | Physical Trauma: Shot (Known) |
| **Pinniped** | M275/15 | *Halichoerus grypus* | Grey seal | 25/08/2015 | Highland | F | Pending |
| **Cetacean** | M280/15 | *Globicephala melas* | Long-finned pilot whale | 26/08/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M285/15 | *Balaenoptera acutorostrata* | Minke whale | 26/08/2015 | Highland | F | Physical Trauma: Entanglement |
| **Pinniped** | M283/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 26/08/2015 | Fife | U | Not Examined: Insufficient Data |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M278/15 | *Phocoena phocoena* | Harbour porpoise | 27/08/2015 | Angus | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M281/15 | Cetacean (indeterminate species) | Cetacean (indeterminate species) | 28/08/2015 | Highland | U | Not Examined: Removed by Tide |
| **Pinniped** | M295/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 28/08/2015 | West Dunbartonshire | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M279/15 | Cetacean (indeterminate species) | Cetacean (indeterminate species) | 28/08/2015 | Fife | U | Not Examined: Insufficient Data |
| **Pinniped** | M284/15 | *Halichoerus grypus* | Grey seal | 30/08/2015 | West Dunbartonshire | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M294/15 | Odontocete (indeterminate species) | Short-beaked common dolphin/striped dolphin (indeterminate species) | 30/08/2015 | Western Isles | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M282/15 | *Globicephala melas* | Long-finned pilot whale | 31/08/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M287/15 | *Phoca vitulina* | Harbour seal (Common seal) | 01/09/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M290/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 04/09/2015 | Highland | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M289/15 | *Phoca vitulina* | Harbour seal (Common seal) | 04/09/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M288/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 04/09/2015 | Highland | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M292/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 07/09/2015 | North Ayrshire | U | Not Examined: Insufficient Data |
| **Basking Shark** | M291/15 | *Cetorhinus maximus* | Basking shark | 07/09/2015 | Western Isles | M | Not Examined: Samples Taken |
| **Pinniped** | M293/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 08/09/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M301/15 | *Phoca vitulina* | Harbour seal (Common seal) | 10/09/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M296/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 11/09/2015 | Western Isles | U | Not Examined: Insufficient Data |
| **Cetacean** | M297/15 | *Delphinus delphis* | Short-beaked common dolphin | 14/09/2015 | Western Isles | U | Not Examined: Weather/travel difficulties |
| **Pinniped** | M307/15 | *Phoca vitulina* | Harbour seal (Common seal) | 15/09/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M299/15 | *Halichoerus grypus* | Grey seal | 15/09/2015 | Fife | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M298/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 15/09/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M300/15 | *Phoca vitulina* | Harbour seal (Common seal) | 17/09/2015 | Fife | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M303/15 | *Halichoerus grypus* | Grey seal | 18/09/2015 | Highland | M | Not Examined: Removed by Tide |
| **Pinniped** | M302/15 | *Halichoerus grypus* | Grey seal | 18/09/2015 | Fife | U | Not Examined: Insufficient Data |
| **Cetacean** | M304/15 | *Globicephala melas* | Long-finned pilot whale | 20/09/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M306/15 | *Phoca vitulina* | Harbour seal (Common seal) | 20/09/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M312/15 | *Halichoerus grypus* | Grey seal | 29/09/2015 | Moray | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M310/15 | *Stenella coeruleoalba* | Striped dolphin | 29/09/2015 | Argyll and Bute | U | Not Examined: Samples Taken |
| **Pinniped** | M311/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 29/09/2015 | Highland | U | Not Examined: Insufficient Data |
| **Cetacean** | M309/15 | *Globicephala melas* | Long-finned pilot whale | 29/09/2015 | Western Isles | F | Not Examined: Weather/travel difficulties |
| **Cetacean** | M308/15 | *Phocoena phocoena* | Harbour porpoise | 29/09/2015 | Highland | F | Maternal Separation/Starvation |
| **Pinniped** | M314/15 | *Phoca vitulina* | Harbour seal (Common seal) | 30/09/2015 | Aberdeenshire | U | Not Examined: Removed by Tide |
| **Cetacean** | M313/15 | *Stenella* | Striped dolphin | 30/09/2015 | Highland | U | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| | | *coeruleoalba* | | | | | |
| **Pinniped** | M315/15 | *Phoca vitulina* | Harbour seal (Common seal) | 01/10/2015 | Highland | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M316/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 01/10/2015 | Aberdeenshire | U | Not Examined: Insufficient Data |
| **Pinniped** | M305/15 | *Halichoerus grypus* | Grey seal | 21/09/2015 | East Lothian | M | Not Examined: Samples Taken |
| **Pinniped** | M337/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 01/10/2015 | Moray | U | Not Examined: Insufficient Data |
| **Pinniped** | M317/15 | *Halichoerus grypus* | Grey seal | 05/10/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M318/15 | *Balaenoptera acutorostrata* | Minke whale | 08/10/2015 | Highland | U | Not Examined: Samples Taken |
| **Pinniped** | M336/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 10/10/2015 | Moray | U | Not Examined: Advanced Autolysis |
| **Basking Shark** | M320/15 | *Cetorhinus maximus* | Basking shark | 10/10/2015 | Highland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Cetacean** | M319/15 | *Balaenoptera acutorostrata* | Minke whale | 10/10/2015 | Moray | M | Gastritis and/or Enteritis |
| **Pinniped** | M321/15 | *Phoca vitulina* | Harbour seal (Common seal) | 13/10/2015 | Highland | F | Pneumonia: Parasitic |
| **Pinniped** | M322/15 | *Halichoerus grypus* | Grey seal | 13/10/2015 | East Lothian | U | Not Examined: Samples Taken |
| **Cetacean** | M340/15 | *Balaenoptera acutorostrata* | Minke whale | 14/10/2015 | Highland | M | Not Examined: Morphometrics Taken |
| **Cetacean** | M323/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 14/10/2015 | Orkney | M | Not Examined: Samples Taken |
| **Cetacean** | M324/15 | *Phocoena phocoena* | Harbour porpoise | 15/10/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M326/15 | *Halichoerus grypus* | Grey seal | 16/10/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M325/15 | *Globicephala melas* | Long-finned pilot whale | 16/10/2015 | Western Isles | M | Live Stranding |
| **Pinniped** | M328/15 | Pinniped (indeterminate | Seal (indeterminate species) | 18/10/2015 | East Lothian | U | Not Examined: Carcase Incomplete/Scavenger Damage |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| | | species) | | | | | |
| **Pinniped** | M327/15 | *Halichoerus grypus* | Grey seal | 18/10/2015 | Scottish Borders | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M330/15 | *Phoca vitulina* | Harbour seal (Common seal) | 19/10/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Basking Shark** | M332/15 | *Cetorhinus maximus* | Basking shark | 20/10/2015 | North Ayrshire | U | Pending |
| **Cetacean** | M329/15 | *Phocoena phocoena* | Harbour porpoise | 21/10/2015 | North Ayrshire | M | Bycatch |
| **Pinniped** | M331/15 | *Halichoerus grypus* | Grey seal | 22/10/2015 | Moray | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M334/15 | *Phoca vitulina* | Harbour seal (Common seal) | 24/10/2015 | Moray | M | Live Stranding |
| **Cetacean** | M333/15 | *Phocoena phocoena* | Harbour porpoise | 24/10/2015 | North Ayrshire | U | Pending |
| **Cetacean** | M338/15 | *Stenella coeruleoalba* | Striped dolphin | 25/10/2015 | Orkney | M | Live Stranding |
| **Pinniped** | M335/15 | *Halichoerus grypus* | Grey seal | 25/10/2015 | Argyll and Bute | U | Not Examined: Not Priority |
| **Pinniped** | M349/15 | *Phoca vitulina* | Harbour seal (Common seal) | 26/10/2015 | Argyll and Bute | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M343/15 | *Halichoerus grypus* | Grey seal | 27/10/2015 | Aberdeenshire | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M339/15 | *Globicephala melas* | Long-finned pilot whale | 27/10/2015 | Highland | F | Physical Trauma: Bottlenose Dolphin Attack |
| **Cetacean** | M344/15 | Mysticete (indeterminate species) | Baleen whale (indeterminate species) | 27/10/2015 | Highland | U | Not Examined: Insufficient Data |
| **Pinniped** | M355/15 | *Halichoerus grypus* | Grey seal | 28/10/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M342/15 | *Halichoerus grypus* | Grey seal | 28/10/2015 | Orkney | F | Not Examined: Not Priority |
| **Pinniped** | M341/15 | *Halichoerus grypus* | Grey seal | 28/10/2015 | Orkney | F | Not Examined: Not Priority |
| **Pinniped** | M353-15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 28/10/2015 | City of Edinburgh | U | Not Examined: Not Priority |
| **Pinniped** | M345/15 | Pinniped (indeterminate | Seal (indeterminate species) | 29/10/2015 | Argyll and Bute | U | Not Examined: Insufficient Data |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| | | species) | | | | | |
| **Pinniped** | M377/15 | *Phoca vitulina* | Harbour seal (Common seal) | 30/10/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M346/15 | *Halichoerus grypus* | Grey seal | 31/10/2015 | Highland | F | Not Examined: Advanced Autolysis |
| **Pinniped** | M348/15 | *Halichoerus grypus* | Grey seal | 01/11/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M352/15 | *Halichoerus grypus* | Grey seal | 01/11/2015 | Fife | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M347/15 | *Halichoerus grypus* | Grey seal | 01/11/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M350/15 | *Halichoerus grypus* | Grey seal | 02/11/2015 | Highland | U | Not Examined: Morphometrics Taken |
| **Pinniped** | M351/15 | *Halichoerus grypus* | Grey seal | 04/11/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M354/15 | *Halichoerus grypus* | Grey seal | 04/11/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M356/15 | *Delphinus delphis* | Short-beaked common dolphin | 06/11/2015 | Western Isles | U | Not Examined: Weather/travel difficulties |
| **Cetacean** | M362/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 07/11/2015 | Argyll and Bute | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M357/15 | *Halichoerus grypus* | Grey seal | 07/11/2015 | Dumfries and Galloway | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M360.2/15 | *Delphinus delphis* | Short-beaked common dolphin | 08/11/2015 | Highland | F | Live Stranding: Successful refloat |
| **Pinniped** | M359/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 08/11/2015 | Angus | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M358/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 08/11/2015 | Angus | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M360.1/15 | *Delphinus delphis* | Short-beaked common dolphin | 08/11/2015 | Highland | F | Live Stranding |
| **Cetacean** | M361/15 | *Phocoena phocoena* | Harbour porpoise | 09/11/2015 | Dumfries and Galloway | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M363/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 10/11/2015 | Shetland | U | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M364/15 | *Phocoena phocoena* | Harbour porpoise | 11/11/2015 | Western Isles | F | Not Examined: Weather/travel difficulties |
| **Cetacean** | M508/15 | *Phocoena phocoena* | Harbour porpoise | 13/11/2015 | Dumfries and Galloway | U | Not Examined: Delay in Reporting |
| **Cetacean** | M365/15 | *Phocoena phocoena* | Harbour porpoise | 13/11/2015 | Shetland | M | Physical Trauma: Grey Seal Attack |
| **Pinniped** | M374/15 | *Halichoerus grypus* | Grey seal | 14/11/2015 | Western Isles | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M371/15 | *Halichoerus grypus* | Grey seal | 14/11/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M370/15 | *Halichoerus grypus* | Grey seal | 14/11/2015 | Western Isles | U | Not Examined: Not Priority |
| **Pinniped** | M369/15 | *Halichoerus grypus* | Grey seal | 14/11/2015 | Western Isles | U | Not Examined: Not Priority |
| **Pinniped** | M375/15 | *Halichoerus grypus* | Grey seal | 14/11/2015 | Western Isles | U | Not Examined: Not Priority |
| **Pinniped** | M386/15 | *Halichoerus grypus* | Grey seal | 14/11/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M373/15 | *Halichoerus grypus* | Grey seal | 14/11/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M372/15 | *Halichoerus grypus* | Grey seal | 14/11/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M368/15 | *Phoca vitulina* | Harbour seal (Common seal) | 15/11/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M367/15 | *Halichoerus grypus* | Grey seal | 15/11/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M400/15 | *Halichoerus grypus* | Grey seal | 15/11/2015 | Western Isles | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M366/15 | *Halichoerus grypus* | Grey seal | 15/11/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M399/15 | *Halichoerus grypus* | Grey seal | 15/11/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M383/15 | *Phocoena phocoena* | Harbour porpoise | 16/11/2015 | North Ayrshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M452/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 17/11/2015 | Highland | U | Not Examined: Insufficient Data |
| **Cetacean** | M451/15 | *Phocoena phocoena* | Harbour porpoise | 17/11/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M376/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 18/11/2015 | Shetland | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M378/15 | *Halichoerus grypus* | Grey seal | 20/11/2015 | Western Isles | U | Not Examined: Not Priority |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M379/15 | *Halichoerus grypus* | Grey seal | 21/11/2015 | Scottish Borders | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M381/15 | *Halichoerus grypus* | Grey seal | 21/11/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M380/15 | *Halichoerus grypus* | Grey seal | 22/11/2015 | Moray | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M382/15 | *Halichoerus grypus* | Grey seal | 22/11/2015 | Western Isles | U | Not Examined: Not Priority |
| **Pinniped** | M390/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 23/11/2015 | North Ayrshire | U | Not Examined: Insufficient Data |
| **Pinniped** | M389/15 | *Halichoerus grypus* | Grey seal | 23/11/2015 | North Ayrshire | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M384/15 | *Phoca vitulina* | Harbour seal (Common seal) | 23/11/2015 | East Lothian | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M387/15 | *Phocoena phocoena* | Harbour porpoise | 24/11/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M388/15 | *Stenella coeruleoalba* | Striped dolphin | 24/11/2015 | Shetland | M | Meningoencephalitis |
| **Pinniped** | M403/15 | *Halichoerus grypus* | Grey seal | 24/11/2015 | Shetland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M385/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 24/11/2015 | North Ayrshire | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M392/15 | *Phocoena phocoena* | Harbour porpoise | 25/11/2015 | Shetland | F | Physical Trauma: Bottlenose Dolphin Attack |
| **Pinniped** | M391/15 | *Halichoerus grypus* | Grey seal | 25/11/2015 | South Ayrshire | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M393/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 25/11/2015 | Highland | F | Live Stranding |
| **Cetacean** | M397/15 | *Phocoena phocoena* | Harbour porpoise | 26/11/2015 | Argyll and Bute | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M395/15 | *Halichoerus grypus* | Grey seal | 26/11/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M394/15 | *Halichoerus grypus* | Grey seal | 26/11/2015 | Highland | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Cetacean** | M396/15 | *Balaenoptera acutorostrata* | Minke whale | 27/11/2015 | Inverclyde | F | Physical Trauma: Entanglement |
| **Cetacean** | M379/15 | *Ziphius cavirostris* | Cuvier's beaked whale | 28/11/2015 | Western Isles | M | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M401/15 | *Halichoerus grypus* | Grey seal | 30/11/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M402/15 | *Phocoena phocoena* | Harbour porpoise | 30/11/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M404/15 | *Halichoerus grypus* | Grey seal | 01/12/2015 | Shetland | U | Not Examined: Not Priority |
| **Pinniped** | M405/15 | *Halichoerus grypus* | Grey seal | 03/12/2015 | Western Isles | M | Not Examined: Advanced Autolysis |
| **Cetacean** | M407/15 | *Ziphius cavirostris* | Cuvier's beaked whale | 03/12/2015 | Highland | M | Live Stranding |
| **Cetacean** | M406/15 | *Delphinus delphis* | Short-beaked common dolphin | 03/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Marine Turtle** | M408/15 | *Caretta caretta* | Loggerhead turtle | 05/12/2015 | North Ayrshire | U | Pending |
| **Cetacean** | M412/15 | *Delphinus delphis* | Short-beaked common dolphin | 06/12/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M410/15 | *Globicephala melas* | Long-finned pilot whale | 06/12/2015 | Western Isles | U | Not Examined: Carcase Incomplete/Scavenger Damage |
| **Pinniped** | M409/15 | *Halichoerus grypus* | Grey seal | 06/12/2015 | Aberdeenshire | U | Not Examined: Not Priority |
| **Cetacean** | M411/15 | *Balaenoptera acutorostrata* | Minke whale | 06/12/2015 | Orkney | U | Not Examined: Samples Taken |
| **Pinniped** | M414/15 | *Halichoerus grypus* | Grey seal | 07/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M413/15 | *Halichoerus grypus* | Grey seal | 07/12/2015 | Argyll and Bute | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M415/15 | *Halichoerus grypus* | Grey seal | 08/12/2015 | Highland | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M417/15 | *Halichoerus grypus* | Grey seal | 08/12/2015 | Fife | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Cetacean** | M416/15 | *Delphinus delphis* | Short-beaked common dolphin | 08/12/2015 | Highland | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M419/15 | *Halichoerus grypus* | Grey seal | 09/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M423/15 | *Halichoerus grypus* | Grey seal | 09/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M424/15 | *Delphinus delphis* | Short-beaked common dolphin | 10/12/2015 | Western Isles | F | Not Examined: Advanced Autolysis |
| **Cetacean** | M510/15 | *Phocoena phocoena* | Harbour porpoise | 11/12/2015 | Moray | U | Not Examined: Delay in Reporting |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M447/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 12/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M430/15 | *Halichoerus grypus* | Grey seal | 12/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M429/15 | *Halichoerus grypus* | Grey seal | 12/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M427/15 | *Halichoerus grypus* | Grey seal | 12/12/2015 | Orkney | M | Not Examined: Advanced Autolysis |
| **Pinniped** | M431/15 | *Halichoerus grypus* | Grey seal | 12/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M426/15 | *Delphinus delphis* | Short-beaked common dolphin | 12/12/2015 | Western Isles | F | Not Examined: Samples Taken |
| **Pinniped** | M432/15 | *Halichoerus grypus* | Grey seal | 12/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M425/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 12/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M434/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 13/12/2015 | Fife | M | Not Examined: Samples Taken |
| **Pinniped** | M436/15 | *Halichoerus grypus* | Grey seal | 13/12/2015 | Western Isles | F | Not Examined: Advanced Autolysis |
| **Pinniped** | M439/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 13/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M442/15 | *Halichoerus grypus* | Grey seal | 13/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M435/15 | *Halichoerus grypus* | Grey seal | 13/12/2015 | Western Isles | F | Not Examined: Advanced Autolysis |
| **Pinniped** | M437/15 | *Phoca vitulina* | Harbour seal (Common seal) | 13/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M441/15 | *Halichoerus grypus* | Grey seal | 13/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M444/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 13/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M445/15 | *Halichoerus grypus* | Grey seal | 13/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M429/15 | *Halichoerus grypus* | Grey seal | 13/12/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M443/15 | *Halichoerus grypus* | Grey seal | 13/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M438/15 | *Halichoerus grypus* | Grey seal | 13/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M440/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 13/12/2015 | Western Isles | U | Not Examined: Insufficient Data |
| **Pinniped** | M446/15 | *Halichoerus grypus* | Grey seal | 14/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M433/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 14/12/2015 | Western Isles | U | Not Examined: Insufficient Data |
| **Pinniped** | M448/15 | *Halichoerus grypus* | Grey seal | 14/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Cetacean** | M450/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 17/12/2015 | East Lothian | M | Not Examined: Samples Taken |
| **Cetacean** | M449/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 17/12/2015 | Highland | M | Live Stranding |
| **Pinniped** | M456/15 | *Halichoerus grypus* | Grey seal | 20/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Cetacean** | M453/15 | *Physeter Macrocephalus* | Sperm whale | 20/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M490/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 20/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M455/15 | *Halichoerus grypus* | Grey seal | 20/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M489/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 20/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M454/15 | *Halichoerus grypus* | Grey seal | 20/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M492/15 | *Halichoerus grypus* | Grey seal | 20/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M491/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 20/12/2015 | Orkney | U | Not Examined: Insufficient Data |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M457/15 | *Phocoena phocoena* | Harbour porpoise | 22/12/2015 | Highland | U | Not Examined: Removed by Council |
| **Cetacean** | M459/15 | *Globicephala melas* | Long-finned pilot whale | 22/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M458/15 | *Globicephala melas* | Long-finned pilot whale | 22/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M461/15 | *Balaenoptera acutorostrata* | Minke whale | 22/12/2015 | Argyll and Bute | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M460/15 | *Halichoerus grypus* | Grey seal | 23/12/2015 | Dumfries and Galloway | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M507/15 | *Phocoena phocoena* | Harbour porpoise | 24/12/2015 | Argyll and Bute | U | Not Examined: Delay in Reporting |
| **Pinniped** | M504/15 | *Halichoerus grypus* | Grey seal | 25/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M472/15 | *Phoca vitulina* | Harbour seal (Common seal) | 26/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M469/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M468/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M463/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 26/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M478/15 | *Phoca vitulina* | Harbour seal (Common seal) | 26/12/2015 | Orkney | U | Not Examined: Weather/Travel Difficulties |
| **Pinniped** | M471/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 26/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M480/14 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M462/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M465/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Not Examined: Insufficient Data |
| **Pinniped** | M483/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M481/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M476/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Pinniped** | M464/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M484/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M475/15 | *Phoca vitulina* | Harbour seal (Common seal) | 26/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M466/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M470/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 26/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M482/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M479/15 | *Phoca vitulina* | Harbour seal (Common seal) | 26/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M477/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M467/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M485/15 | *Halichoerus grypus* | Grey seal | 26/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M474/15 | *Halichoerus grypus* | Grey seal | 27/12/2015 | Aberdeenshire | U | Not Examined: Not Priority |
| **Pinniped** | M505/15 | *Halichoerus grypus* | Grey seal | 27/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M488/15 | *Halichoerus grypus* | Grey seal | 27/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |
| **Pinniped** | M487/15 | *Halichoerus grypus* | Grey seal | 27/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Cetacean** | M473/15 | *Phocoena phocoena* | Harbour porpoise | 27/12/2015 | Western Isles | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M486/15 | *Halichoerus grypus* | Grey seal | 27/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M494/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 28/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M493/15 | *Halichoerus grypus* | Grey seal | 28/12/2015 | Orkney | U | Physical Trauma: Possible spiral "Corkscrew" Lesions |

| Class | Ref | Species (scientific) | Species (common) | Date Found | Local Authority | Sex | Findings summary |
|---|---|---|---|---|---|---|---|
| **Cetacean** | M496/15 | *Balaenoptera acutorostrata* | Minke whale | 28/12/2015 | Fife | F | Not Examined: Advanced Autolysis |
| **Pinniped** | M495/15 | *Halichoerus grypus* | Grey seal | 28/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M506/15 | *Halichoerus grypus* | Grey seal | 29/12/2015 | Orkney | F | Not Examined: Advanced Autolysis |
| **Cetacean** | M497/15 | *Lagenorhynchus albirostris* | White-beaked dolphin | 29/12/2015 | Western Isles | F | Live Stranding |
| **Pinniped** | M500/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 30/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M498/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 30/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Pinniped** | M499/15 | Pinniped (indeterminate species) | Seal (indeterminate species) | 30/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M501/15 | *Halichoerus grypus* | Grey seal | 31/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M502/15 | *Halichoerus grypus* | Grey seal | 31/12/2015 | Orkney | U | Not Examined: Not Priority |
| **Pinniped** | M503/15 | *Halichoerus grypus* | Grey seal | 31/12/2015 | Orkney | U | Not Examined: Advanced Autolysis |
| **Cetacean** | M511/15 | Cetacean (indeterminate species) | Cetacean (indeterminate species) | 19/12/2015 | Argyll and Bute | U | Not Examined: Delay in Reporting |