

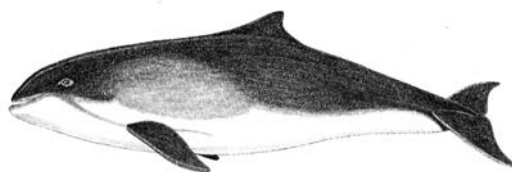


Marine Environmental Monitoring

www.strandings.com

Marine Mammal Strandings (Welsh Coast) Annual Report 1997

R.S.Penrose. January 1998



**Marine
Environmental
Monitoring**



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1. INTRODUCTION

Little is known about disease and causes of death in marine mammals around the British Isles. Without this knowledge it is difficult to interpret the significance of sudden die-offs such as that which occurred in 1988 when approximately 17,000 seals were killed by the Phocine Distemper Virus (PDV).

At present a collaborative Marine Mammal Strandings scheme for England and Wales has been funded by the Department of the Environment (DOE) since 1990 which involves *post-mortem* and other studies of seal and cetacean carcasses. This research is being carried out by the Institute of Zoology (IOZ) in close collaboration with the Natural History Museum (NHM) and the Sea Mammal Research Unit (SMRU). *Post-mortem* examinations of Welsh strandings are carried out by the Department of Veterinary Pathology, University of Liverpool and the Institute of Zoology, London. It includes studies on the correlation between contaminant levels and disease, reproduction, and immunological status. Samples taken include those for virology, bacteriology, parasitology, histopathology, measurement of heavy metals, organochlorines and radionuclides, DNA fingerprinting and fixed and frozen material for archive.

Records of live and dead strandings of cetaceans are kept by the Strandings Co-ordinator and are passed for correlation at the Natural History Museum (NHM). Since 1913 records have been, and continue to be kept, by the NHM, in co-operation with the Receiver of Wrecks and HM Coastguard.

Funding towards this project in Wales has been provided by the Welsh Office through the Natural History Museum, London, Countryside Council for Wales (CCW) and the Department of the Environment through the Institute of Zoology, London. Support of certain items of equipment has been provided by the Environment Agency and the Green Seas Initiative.

2. MATERIALS AND METHODS

A 24 hour Strandings Answerphone (**01348 875000**), is interrogated at regular intervals. A message requests callers to leave details of the stranding and location, along with their name and contact phone number, so they can be reached if confirmation of details are required. (If the stranding is a live stranding then a message on an answer-phone informs the caller to contact the RSPCA immediately. see 2.1)

A network of volunteers, rangers, wardens, coastal officers, harbour masters etc. has been formed who can be contacted by the Strandings Co-ordinator to confirm the stranding, assess its condition and secure the animal from the effects of the tide, predation etc. until it can be dealt with.

The following criteria are applied: -

2.1 Live Animals

(Condition code 1)¹

In 1994 the Marine Animal Rescue Coalition (MARC) was formed. This consists of all the major animal welfare and conservation bodies involved with marine mammals in the UK. It has been agreed that in the case of a live stranding the first point of call would be the RSPCA as they support a manned 24-hour emergency phone. The RSPCA would then contact the relevant organisations, Marine Environmental Monitoring etc.

2.2 Dead Animals

(Condition code 2a extremely fresh as if just died)¹

(Condition code 2b slight decomposition)¹

The animal is retrieved using a 4-wheel drive vehicle and trailer. Health and safety precautions are followed with the animal being handled only with gloved hands. It is placed in a body-bag then taken immediately for *post-mortem* examination.

(Condition code 3 moderate decomposition)¹

The animal is retrieved using a 4-wheel drive vehicle and trailer. Health and safety precautions are followed with the animal being handled only with gloved hands. It is placed in a body-bag then taken to a storage facility where it is bagged, labelled and stored for later transportation or transported immediately. (see 2.3).

(Condition code 4 advanced decomposition)¹

(Condition code 5 mummified carcass)¹

Species identified, basic measurements and 6 teeth taken from the lower jaw if possible. Health and safety precautions being observed. Local council then contacted for safe disposal of remains.

All live and dead stranded cetaceans are reported to the NHM and are allocated a “SW” number. All dead seals are reported to the Institute of Zoology (IOZ) and are allocated a SS number. Records of all strandings in Wales are kept by the Strandings Co-ordinator and passed on to the NHM and ZSL on a regular basis.

¹ Body condition based on the Institute of Zoology condition code.

Copies of *post-mortem* examination reports are sent from the Strandings Co-ordinator to the finder and others associated with the relevant stranding.

2.3 Storage of animals

During 1995 the decision was taken not to store animals frozen, since as a result of freezing the following had been found:-

- Loss of micro-organisms, viruses and bacteria.
- Damage to tissue for histology.
- Possible loss of fluids from internal organs which may effect analysis of toxicology results.
- Decrease in interpretation of normal and abnormal tissues due to haemolysis of red blood cells.
- Internal organs had remained part-frozen in some animals extending and delaying the *post-mortem* examination.

If the animal is not to be transported immediately then storage at +4⁰ Celsius is preferable for a maximum time period of one week.

As a result of this change of procedure, the present storage facilities kindly provided at Fishguard are no longer suitable for the storage of animals and new facilities are needed. All suitable carcasses are now transported immediately for *post-mortem* examination, resulting in increased mileage and reduction in cover on the Welsh strandings network.

3. RESULTS

3.1 Marine Mammals

Table 1.

1997 Total number of reported marine mammal strandings (Welsh Coast).													
Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Bottlenose dolphin	0	0	0	0	0	0	0	0	0	0	0	0	0
Common dolphin	0	0	0	1	0	1	0	0	0	0	0	0	2
Risso's dolphin	0	0	0	0	0	0	0	0	0	0	0	0	0
Striped dolphin	0	0	0	0	0	0	0	0	0	0	0	0	0
Pygmy sperm whale	0	0	0	0	0	0	0	0	0	1	0	0	1
Harbour porpoise	1	0	2	0	1	9	15	1	9	4	7	1	50
Cetacean sp. Indent.	0	1	1	0	2	0	0	0	0	0	0	0	4
Total cetaceans	1	1	3	1	3	10	15	1	9	5	7	1	57
Grey seal	0	0	3	3	0	3	1	1	30	46	5	8	100
Total animals	1	1	6	4	3	13	16	2	39	51	12	9	157

Table 2.

1997 Number of live cetacean strandings (Welsh Coast).													
Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Pygmy sperm whale	0	0	0	0	0	0	0	0	0	1	0	0	1
Harbour porpoise	0	0	0	0	0	1	0	0	0	0	0	0	1
Total animals	0	0	0	0	0	1	0	0	0	1	0	0	2

Of the 57 cetacean strandings 3.5% live-stranded (2 animals), 1 cetacean had live-stranded giving birth and subsequently died, 1 cetacean was found dead but indicated as having live-stranded under *post-mortem* examination.

Table 3.

1997 Number of animals suitable for <i>post-mortem</i> examination.													
Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Pygmy sperm whale	0	0	0	0	0	0	0	0	0	1	0	0	1
Harbour porpoise	0	0	1	0	0	5	5	0	0	0	0	0	11
Total cetaceans	0	0	1	0	0	5	5	0	0	1	0	0	12
Grey seal	0	0	1	0	0	1	0	0	1	2	1	4	10
Total animals	0	0	2	0	0	6	5	0	1	3	1	4	22

Of the 157 strandings 14% (22 animals) were suitable for *post-mortem* examination.

Table 4.

1997 Number of animals decomposed / disposed of. (Welsh Coast).													
Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Common dolphin	0	0	0	1	0	1	0	0	0	0	0	0	2
Harbour porpoise	1	0	1	0	0	3	10	0	7	4	7	1	34
Cetacean sp. Indent.	0	0	0	0	2	0	0	0	0	0	0	0	2
Total cetaceans	1	0	1	1	2	4	10	0	7	4	7	1	38
Grey seal	0	0	2	3	0	2	1	1	5	13	4	3	34
Total animals	1	0	3	4	2	6	11	1	12	17	11	4	72

Of the 157 strandings 45.9% (72 animals) were decomposed and the relevant local council contacted for safe disposal of remains. Funding for seals again was limited throughout the year and this is reflected in the relatively high numbers of animals passed to local councils for safe disposal.

The remaining 40.1% (63 animals) were confirmed reports but were unable to be retrieved or disposed of due to various reasons. i.e. no access to stranding, washed away or retrospective reports. Two additional animals thought to be porpoises were reported by Milford Haven Coastguard seen floating in the sea off Borth and Ynyslas. (Cetacean and seal data: Appendix 1& 2).

3.2 Unusual Occurrences

On 9th June a “dolphin” was reported swimming erratically between shore and 20 metres distance, at Aberystwyth. The RSPCA and a local rescue group was contacted, both attended but no animal was observed. On 13th June an adult pregnant **porpoise** SW1997/93 was reported live-stranded at the same location. The animal was having difficulty giving birth and eventually died.

SW1997159 a 2.7 metre female **Pygmy sperm whale** (*Kogia breviceps*) which had recently given birth, was reported stranded at Manorbier, Pembrokeshire in October. This is only the 5th reported stranding of this species for the UK since 1913 (NHM data). Quantities of reddish black tarry material (5-7 litres) was observed coming from the genital slit. Further enquiries to other researchers working on this species via the internet, together with the *post-mortem* examination, found that these animals have the ability to “ink” as a startle response similar to squid. The material is held in an intestinal diverticulum and is ejected from the anus. Apparently the Japanese call these animals “firecracker” or “rocket” whales as they emit this reddish cloud and dive when startled.

4. OTHER MARINE ANIMALS REPORTED TO THE NETWORK.

4.1 Turtles

A total of 4 Leatherback Turtles (*Dermochelys coriacea*) were reported stranded to the network in Wales. None of these animals were in a fresh enough condition to undergo *post-mortem* examinations. However, skin samples were obtained from all animals with the help of CCW staff. These samples will be sent to America via Glasgow University for studies on DNA.

A further 3 animals were reported at sea in the North of Cardigan Bay, 2 live and 1 dead.

ST1997/2 found stranded at Pembrey was a female which had been tagged. Investigations of the details found on the tags through the database in Paris revealed that the animal had been tagged on the 21st July 1994 in Ya : lima : po beach, French Guiana, South America and not seen after this date. (remains buried at Fishguard).

ST1997/3 found stranded in Spalding, Lincolnshire, was reported to this network. This animal had been seen swimming up a large drainage ditch until it had reached a sluice gate where it died. Tom Tew at JNCC in Peterborough was contacted who managed to take samples before the animal was removed to a landfill site by the local authority.

ST1995/1 and ST1995/2 were exhumed to recover part of the skeleton for further DNA studies at Glasgow University.

Aerial surveys were started in 1997 to try and obtain numbers of live leatherback turtles off the coast with the help of the MAFF Fisheries Patrol. Unfortunately, due to bad weather and aircraft re-tasking only 2 flights were flown with observers onboard. It is hoped that this facility will be offered to us again in 1998.

4.2 Fish

A **Basking shark** (*Cetorhinus maximus*) was reported by the Tenby Harbour Master caught in fishing gear. The animal managed to free itself.

5. SEA EMPRESS OIL SPILL.

A request was made to Marine Environmental Monitoring by the Sea Empress Environmental Evaluation Committee (SEEEC) Shoreline and Terrestrial Task Group -Mammals sub-group, to review marine mammal strandings from the West Wales coast for the period 5 years prior to the Sea Empress Oil Spill (SEOS) and for approximately 1 year after. Additional data was included from surrounding coastlines. A comparative review of the Braer oil spill was included.

ref: SEA EMPRESS OIL SPILL (SEOS) - WEST WALES. Review of Marine Mammal Strandings from the West Wales coast 1991-1996.

Rod Penrose 1997.

6. SAMPLES.

Normal procedure for the taking of samples is from fresh animals that have been taken for *post-mortem* examination.

Following a request from Dr Bob Morris, samples of melon and blubber from cetaceans were taken. Whenever possible those animals not suitable for *post-mortem* examination were also sampled by the Co-ordinator. These samples were stored frozen at -20 degrees C and passed to Dr Morris at the end of the year.

Samples of muscle additional to fresh samples taken at *post-mortem* examinations have also been taken by the Strandings Co-ordinator from animals which would normally have been disposed of. These samples have been stored at -20 degrees C for later radionuclide comparisons with samples taken in Ireland.

7. FUNDING.

As stated previously funding towards this project in Wales has been provided by the Welsh Office through the Natural History Museum, London, the Countryside Council for Wales and the Department of the Environment through the Institute of Zoology, London. Support of certain items of equipment have been provided by the Environment Agency and the Green Seas Initiative.

Additional funding through the "Interreg" programme, part of the European Regional Development Fund, has been secured through the Countryside Council for Wales. This funding will allow further essential equipment to be purchased for the project together with collaboration with the Irish Strandings Network to enable both sides of the Irish Sea to be monitored.

8. EQUIPMENT.

The strandings telephone based at Fishguard was found to be not working on the 24th November due to being destroyed by a lightning strike, calls were diverted to the Co-ordinators home telephone until the line was repaired and the equipment replaced.

Funding of 50% has allowed the purchase of an All Terrain Vehicle (ATV quad bike). This ATV has enabled reports of strandings to be investigated far more efficiently including recovery of animals which previously would have been abandoned due to

distance from road. The trailer has been modified to accommodate both the ATV and the recovered stranded animal.

9. TRAINING.

Training was organised for the Strandings Co-ordinator and key volunteers in the use of the ATV. The Institute of Acoustics, Underwater Bio-sonar and Bioacoustic Symposium held at Loughborough University was attended.

10. TRAVEL.

In excess of 8500 miles were covered by the Strandings Co-ordinator in retrieval and transportation of animals in 1997. The majority of suitable animals were taken to Liverpool University and others to the Institute of Zoology, London.

11. ADMINISTRATION.

In excess of 36 copies of *post-mortem* examination reports were posted out to finders and associated interested parties concerning each relevant stranding.

12. ACKNOWLEDGEMENTS.

Aberystwyth Veterinary Investigation Laboratories for their help in storage of animals.

Gerry Jones, Paul Newman, Lin Gander and Jemma Pratt for their help in retrieving animals.

MAFF Fishery Patrols for help with aerial surveys.

Powell Strong / Jemma Pratt, Grey seal pup production and population monitoring:
Ramsey Island & Nth. Pems., CCW/MEM project. For supplying pup mortality data.

Robin Pratt for providing base of operation at Fishguard

Strandings Network Volunteers too numerous to mention in their help confirming, reporting and securing animals for collection.

Tim Jones CCW for taking samples from Leatherback turtle ST1997/1 & ST 1997/4. Tom Tew JNCC
for taking samples from Leatherback turtle ST1997/3.

Welsh Office / Natural History Museum, Countryside Council for Wales for providing funds towards the project.

13. APPENDICES.

- Appendix 1. Cetacean strandings data for 1997.
- Appendix 2. Atlantic grey seal strandings data for 1997.
- Appendix 3. Leatherback turtle strandings data 1997.

Appendix 1. Marine Environmental Monitoring 1997 Welsh Coast Strandings (Cetaceans).

SW Number	Family/Genus	species	Sex	Length	Condition	Date	County	Locality	Grid	Reported by	Comment
SW1997/022	Phocoena	phocoena	F	1.20	moderate decomposition	24-Jan-97	Pembrokeshire	Newgale	SM847223	Pemb's Env. Health	taken to Fishguard.
SW1997/046	Cetacean	sp. indet.	?	?	?	16-Feb-97	Pembrokeshire	Caldy Island	SS139964	Nigel Allen	beaked dolphin reported by Nigel Allen. unable to attend due to gales.
SW1997/054	Phocoena	phocoena	M	?	advanced decomposition	01-Mar-97	Ceredigion	Aberaeron	SN454630	Mr Walsall,	sub adult headless, council informed for disposal.
SW1997/055	Phocoena	phocoena	F	1.68	slight decomposition	03-Mar-97	Gwynedd	Black Rock Sands	SH530370	Harbour Master	taken to Liverpool.
SW1997/059	Cetacean	sp. indet.	?	?	?	12-Mar-97	Gwynedd	Pontllyfni	SH432529		anon report to EA
SW1997/065	Delphinus	delphis	M	1.94	advanced decomposition	03-Apr-97	Carmarthenshire	RAF Pembrey	SN363044	Wyn Parry, Park Ranger	animal buried on beach.
SW1997/075	Cetacean	sp. indet.	?	1.50	advanced decomposition	02-May-97	Gwynedd	Aberdovey	SN594960	Barry Davies Gwynedd CC.	reported by Barry Davies Gwynedd CC.
SW1997/076	Cetacean	sp. indet.	?	1.50	advanced decomposition	02-May-97	Gwynedd	Aberdovey	SN594960	Barry Davies Gwynedd CC.	reported by Barry Davies Gwynedd CC.
SW1997/083a	Phocoena	phocoena	?	?	advanced decomposition	29-May-97	Pembrokeshire	Cemaes Head	SN120486		animal moved above HW mark by MB. not accessible by council for disposal.
SW1997/086	Phocoena	phocoena	?	?	advanced decomposition	03-Jun-97	Swansea	Jersey Marine Beach	SS710930		prop cuts?
SW1997/090	Phocoena	phocoena	?	?	fresh	08-Jun-97	Carmarthenshire	MOD Pendine	SN280068		removed by persons unknown. 2 mortars found, search curtailed.
SW1997/091	Phocoena	phocoena	F	0.89	fresh	09-Jun-97	Swansea	Black Pill	SS624903	Health	section of melon taken by RM at Newquay. Taken to IOZ.
SW1997/092	Phocoena	phocoena	?	?	advanced decomposition	11-Jun-97	Pembrokeshire	Tenby	SN135004	Master	disposed of.
SW1997/093	Phocoena	phocoena	F	1.60	live	13-Jun-97	Ceredigion	Aberystwyth	SN579812	Jean Bryant	Live stranding, prob. same animal reported on 9th. Pregnant. taken to IOZ
SW1997/094	Phocoena	phocoena	F	1.72	fresh	19-Jun-97	Carmarthenshire	Pembrey	SN365030	Neal Parry Pembrey CP	taken to Liverpool. Pregnant.
SW1997/095	Phocoena	phocoena	M	0.90	moderate decomposition	23-Jun-97	Pembrokeshire	Newgale	SM851210	Bob James	Internal organs exposed, unsuitable for pm.
SW1997/096	Phocoena	phocoena	F	1.53	fresh	23-Jun-97	Ceredigion	Llanrhystud	SN523687	Jenny Hyde	taken to IOZ. Pregnant.
SW1997/097	Phocoena	phocoena	F	0.70	fresh	25-Jun-97	Carmarthenshire	MOD Pendine	SN245075	MOD Staff	retrieved by Jemma. live??
SW1997/098	Delphinus	delphis	?	2.10	advanced decomposition	26-Jun-97	Pembrokeshire	Trevine	SM833325	Margaret Brooks WWTNC	Council informed for disposal. Tailstock/belly heavily scavenged.
SW1997/104	Phocoena	phocoena	?	0.75	moderate decomposition	08-Jul-97	Gwynedd	Tywyn	SH575008	Susan Batty.	Bagged and council informed for disposal.
SW1997/105	Phocoena	phocoena	?	?	advanced decomposition	09-Jul-97	Gwynedd	Tywyn	SH575006		Part animal found on beach. Council informed for disposal.
SW1997/113	Phocoena	phocoena	F	0.73	fresh	13-Jul-97	Carmarthenshire	Pembrey	SN370030	Wyn Parry, Park Ranger	
SW1997/114	Phocoena	phocoena	F	1.54	moderate decomposition	16-Jul-97	Gwynedd	Shell Island	SH550257	Richard Workman	animal buried on beach.
SW1997/116	Phocoena	phocoena	M	1.60	moderate decomposition	17-Jul-97	Pembrokeshire	Fishguard	SM946380	Pemb's. CC	
SW1997/117	Phocoena	phocoena	F	0.85	fresh	17-Jul-97	Ceredigion	New Quay	SN400597	Caroline Wier.	
SW1997/118	Phocoena	phocoena	F	1.72	fresh	18-Jul-97	Denbighshire	Prestatyn	SJ065844	Michelle	removed to council depot at Rhyl.
SW1997/119	Phocoena	phocoena	?	1.52	advanced decomposition	18-Jul-97	Bridgend	Sker beach	SS786797	Swansea Coastguard	removed by council.
SW1997/120	Phocoena	phocoena	M	0.94	advanced decomposition	20-Jul-97	Ceredigion	Borth	SN606919	Milford Haven C.G.	samples taken, bagged and removed.
SW1997/121	Phocoena	phocoena ?	?	?	?	20-Jul-97	Ceredigion	off Borth	SN448860	Milford Haven C.G.	at sea 52.27'N 4.17'W reported by Milford Haven Coastguard.
SW1997/122	Phocoena	phocoena ?	?	?	?	20-Jul-97	Ceredigion	off Ynyslas	SN416935	Milford Haven C.G.	at sea 52.31'N 4.20'W reported by Milford Haven Coastguard.
SW1997/124	Phocoena	phocoena	M	1.14	moderate decomposition	22-Jul-97	Pembrokeshire	Newgale	SM848217	Steve Morgan E.A..	samples taken. council informed for disposal.
SW1997/125	Phocoena	phocoena	?	?	advanced decomposition	24-Jul-97	Gwynedd	Black Rock Sands	SH530370	Harbour Master.	council to remove.
SW1997/126.1	Phocoena	phocoena	?	1.52	advanced decomposition	25-Jul-97	Ceredigion	Ynyslas	SN603936	Ron Williams	could be SW1997/122. westerly winds. assumed to be female due to SW1997/126.2. remains buried on beach.
SW1997/126.2	Phocoena	phocoena	M	0.84	advanced decomposition	25-Jul-97	Ceredigion	Ynyslas	SN603936	Ron Williams	found with above and could have parted company due to decomposition. remains buried on beach.
SW1997/128	Phocoena	phocoena	F	1.29	fresh	31-Jul-97	Ceredigion	Borth	SN607901	Mark Simmonds	stored at VI Centre Aberystwyth.
SW1997/129	Phocoena	phocoena	F	0.94	moderate decomposition	31-Jul-97	Swansea	Rhossili Beach	SS413895	Steve Constant	animal heavily scavenged. bagged and disposed of.
SW1997/135	Phocoena	phocoena	?	?	advanced decomposition	12-Aug-97	Pembrokeshire	Ramsey Island	SM705225	Jemma	
SW1997/137a	Phocoena	phocoena	M	1.48	advanced decomposition	01-Sep-97	Ceredigion	Aberystwyth	SN579801	Mick Green	Tan y bwch beach. council informed.
SW1997/139	Phocoena	phocoena	F	1.51	advanced decomposition	07-Sep-97	Ceredigion	Llanrhystud	SN524691	Mr Tubbs	removed to car park, council informed.
SW1997/140	Phocoena	phocoena	M	1.40	advanced decomposition	08-Sep-97	Swansea	Worms Head	SS384877	Kevin Dupe CCW.	
SW1997/143	Phocoena	phocoena	F	1.61	advanced decomposition	13-Sep-97	Ceredigion	Aberystwyth	SN576797	Aberystwyth Harbour Master	Council informed for disposal. tagged.
SW1997/144	Phocoena	phocoena	M	1.25	moderate decomposition	19-Sep-97	Pembrokeshire	Dale	SM813057	Milford Haven C.G.	council informed for safe disposal. samples taken.
SW1997/145	Phocoena	phocoena	?	?	?	19-Sep-97	Ceredigion	Ynyslas	SN603928	Liz Kelly	rear end of animal only. buried on beach by CCW staff.
SW1997/147	Phocoena	phocoena ?	?	?	?	22-Sep-97	Pembrokeshire	Saundersfoot	SN140050	PCNP ranger	nothing found.
SW1997/149	Phocoena	phocoena	M	?	moderate decomposition	29-Sep-97	Carmarthenshire	MOD Pendine	SN243075	MOD Police	fins missing and tailstock cutoff. samples of muscle, blubber & melon taken. council informed for disposal.
SW1997/150	Phocoena	phocoena	F	1.31	slight decomposition	30-Sep-97	Carmarthenshire	MOD Pendine	SN245075	MOD Police	heavily scavenged. samples taken. council informed for disposal.
SW1997/151	Phocoena	phocoena	?	?	moderate decomposition	07-Oct-97	Gwynedd	Hells Mouth	SH274267	John Goold / Mr Green	council informed for disposal.
SW1997/153	Phocoena	phocoena	M	1.03	moderate decomposition	09-Oct-97	Gwynedd	Tywyn	SH576004	Mrs Edwards	council informed for disposal
SW1997/155	Phocoena	phocoena	?	1.40	moderate decomposition	10-Oct-97	Ceredigion	Llanon	SN499659	Trish Reece.	Heavily scavenged, no internal organs.
SW1997/156	Phocoena	phocoena	M	1.45	moderate decomposition	11-Oct-97	Swansea	Broughton Burrows	SS418931	Simon	animal to be buried by owners of beach.
SW1997/159	Kogia	breviceps	F	2.76	slight decomposition	17-Oct-97	Pembrokeshire	Manorbier	SS060974	Rod Jones, Beach Cleaner.	reported by Rod Jones. taken for pm to Dr J Baker.
SW1997/165	Phocoena	phocoena	M	?	moderate decomposition	05-Nov-97	Gwynedd	Abersoch	SH315285	Alex Muir.	Pwllheli HM contacted for confirmation and disposal.
SW1997/166	Phocoena	phocoena	M	1.52	moderate decomposition	10-Nov-97	Gwynedd	Tywyn	SH577006	Mrs Edwards.	removed to central point for council pick up. samples taken.
SW1997/167.1	Phocoena	phocoena	M	1.50	moderate decomposition	10-Nov-97	Gwynedd	Abersoch	SH317280	Barry Davies Gwynedd CC.	
SW1997/167.2	Phocoena	phocoena	?	1.20	moderate decomposition	10-Nov-97	Gwynedd	Abersoch	SH317280	Barry Davies Gwynedd CC.	
SW1997/168	Phocoena	phocoena	F	1.55	moderate decomposition	10-Nov-97	Gwynedd	Tywyn	SN589978	Harbour Master	removed to central point for council pick up. samples taken.
SW1997/169.1	Phocoena	phocoena	M	1.28	moderate decomposition	10-Nov-97	Gwynedd	Tywyn	SN585985	Public	removed to central point for council pick up. samples taken.
SW1997/169.2	Phocoena	phocoena	M	1.42	moderate decomposition	10-Nov-97	Gwynedd	Tywyn	SN583991	Public	removed to central point for council pick up. samples taken. tagged.
SW1997/179	Phocoena	phocoena	F	1.55	moderate decomposition	10-Dec-97	Gwynedd	Fairbourne	SH614147	RSPB	removed to car park, tagged and council informed for disposal.

Appendix 2. Marine Environmental Monitoring 1997 Welsh Coast Strandings (Grey seals).

Species	Sex	Length	Condition	Date	SS_No	County	Locality	Grid_ref	Comment
Halichoerus grypus	?	?	moderate decomp	01-Mar-97	SS1997/007	Swansea	Rotherslade Bay	SS610870	reported by Helen Solomon. headless, intestine exposed. council informed for disposal.
Halichoerus grypus	?	?	?	20-Mar-97	SS1997/012	Pembrokeshire	Freshwater west	SM880000	reported by Pembrokeshire council.
Halichoerus grypus	F	2.14	moderate dec.	22-Mar-97	SS1997/013	Pembrokeshire	Docks	SM900058	reported by Milford Dock Control. - pm.
Halichoerus grypus	?	?	fresh ?	02-Apr-97	SS1997/016	Gwynedd	Criccieth	SH494376	reported by Mr Phillips Porthmadoc harbour master.
Halichoerus grypus	?	?	?	06-Apr-97	SS1997/017	Conwy	Llandudno	SH780820	reported by Mrs Bird. council informed for disposal.
Halichoerus grypus	?	?	fresh?	11-Apr-97	SS1997/018	Cardiff	Sully Island	ST165670	reported entangled in wire.
Halichoerus grypus	?	1.17	fresh	21-Jun-97	SS1997/039	Ceredigion	Mwnt	SN193519	live animal collected by RSPCA 21st June died Swansea RSPCA 24th June.
Halichoerus grypus	?	?	?	30-Jun-97	SS1997/040	Conwy	Colwyn Bay	SH855793	reported by RSPCA. cut in body. council informed for safe disposal.
Halichoerus grypus	?	Adult	decomposed	30-Jun-97	SS1997/041	Anglesey	Lligwy Bay	SH497872	reported by Mr Brassey. council informed for safe disposal.
Halichoerus grypus	?	?	decomposed	10-Jul-97	SS1997/043	Carmarthenshire	Ferryside	SN365104	reported by June DWT. removed by council.
Halichoerus grypus	?	?	decomposed	08-Aug-97	SS1997/049	Flintshire	Talacre	SJ126845	reported by Mr Inch. council informed for safe disposal.
Halichoerus grypus	?	? p	decomposed	01-Sep-97	SS1997/052	Pembrokeshire	St Justinians	SM723252	
Halichoerus grypus	?	? p	decomposed	01-Sep-97	SS1997/053	Pembrokeshire	Pwll Dawnau	SM880370	
Halichoerus grypus	?	? p	Fresh	04-Sep-97	SS1997/053a	Pembrokeshire	Rhossyn Beach	SM706228	Contract.
Halichoerus grypus	?	? p	Fresh	05-Sep-97	SS1997/053b	Pembrokeshire	Barcud	SM753290	reported by Powell. North Pembrokeshire.
Halichoerus grypus	?	? p	?	08-Sep-97	SS1997/053c	Pembrokeshire		SM889387	reported by Jemma. North Pembrokeshire.
Halichoerus grypus	M	1.18	fresh	09-Sep-97	SS1997/054	Ceredigion	Tresaith	SN278516	reported by Mr Alexander aux. Coastguard.
Halichoerus grypus	?	? p	Fresh	11-Sep-97	SS1997/054a	Pembrokeshire	Williams	SM702228	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	11-Sep-97	SS1997/054b	Pembrokeshire	Rhodd Uchaf	SM706243	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	14-Sep-97	SS1997/054c	Pembrokeshire	Williams	SM702228	reported by Powell. Ramsey Island.
Halichoerus grypus	?	?	?	15-Sep-97	SS1997/057	Swansea	Worms head	SS384877	reported by Kevin Dupe CCW
Halichoerus grypus	?	? p	?	15-Sep-97	SS1997/057a	Pembrokeshire		SM889387	reported by Jemma. North Pembrokeshire.
Halichoerus grypus	?	? p	?	20-Sep-97	SS1997/058	Pembrokeshire	Skomer	SM725095	reported dead in sea off Skomer.
Halichoerus grypus	?	? p	?	22-Sep-97	SS1997/059	Gwynedd	Hellsmouth	SH282264	reported by Pwllheli Harbour Master Ken Fitzpatrick.
Halichoerus grypus	?	Adult	?	22-Sep-97	SS1997/060	Gwynedd	Hellsmouth	SH276268	reported by Pwllheli Harbour Master Ken Fitzpatrick.
Halichoerus grypus	?	? p	slight decomp.	22-Sep-97	SS1997/061	Gwynedd	Aberdaron	SH186256	reported by Pwllheli Harbour Master Ken Fitzpatrick.
Halichoerus grypus	?	? p	Fresh	22-Sep-97	SS1997/061a	Pembrokeshire	Williams	SM702228	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	22-Sep-97	SS1997/061b	Pembrokeshire	Porth Llleuog	SM699231	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	22-Sep-97	SS1997/061c	Pembrokeshire	Porth Llleuog	SM699231	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	22-Sep-97	SS1997/061d	Pembrokeshire	Porth Llleuog	SM699231	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	25-Sep-97	SS1997/061e	Pembrokeshire	Hwrdood Beach	SM706235	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Moderate decomp.	25-Sep-97	SS1997/061f	Pembrokeshire	Myharan Beach	SM705229	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	moderate dec.	26-Sep-97	SS1997/062	Ceredigion	Aberporth	SN258517	reported by Geryk John. council informed for disposal.
Halichoerus grypus	?	? p	Fresh	26-Sep-97	SS1997/062a	Pembrokeshire	Porth Y Twlc	SM750288	reported by Powell. North Pembrokeshire.
Halichoerus grypus	?	? p	Moderate decomp.	26-Sep-97	SS1997/062b	Pembrokeshire	Porth Tre-wen	SM775303	reported by Powell. North Pembrokeshire.
Halichoerus grypus	?	? p	Fresh	26-Sep-97	SS1997/062c	Pembrokeshire	Aberfelin	SM930402	reported by Powell. North Pembrokeshire.
Halichoerus grypus	?	? p	moderate dec.	29-Sep-97	SS1997/063	Pembrokeshire	Pointz Castle	SM826229	reported by June DWT. council informed for disposal.
Halichoerus grypus	?	? p	Moderate decomp.	30-Sep-97	SS1997/063a	Pembrokeshire	Williams	SM702228	reported by Powell. Ramsey Island. Previous ?
Halichoerus grypus	?	? p	Moderate decomp.	30-Sep-97	SS1997/063b	Pembrokeshire	Williams	SM702228	reported by Powell. Ramsey Island. Previous ?
Halichoerus grypus	?	? p	Fresh	30-Sep-97	SS1997/063c	Pembrokeshire	Porth Llleuog	SM699231	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	30-Sep-97	SS1997/063d	Pembrokeshire	Abermawr	SM700244	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	01-Oct-97	SS1997/063e	Pembrokeshire	Porth Y Twlc	SM750288	reported by Powell. North Pembrokeshire.
Halichoerus grypus	?	? p	slight decomp.	02-Oct-97	SS1997/064	Pembrokeshire	Castle Pill	SM917062	reported by Dudley Marine. council informed for disposal.
Halichoerus grypus	?	? p	advanced decomp.	02-Oct-97	SS1997/065	Ceredigion	Aberaeron	SN452629	reported by Liz Allen. council informed for disposal.
Halichoerus grypus	?	Adult	?	03-Oct-97	SS1997/066	Gwynedd	Deganwy	?	reported by Dr John Baker. inaccessible.
Halichoerus grypus	M	1.10	fresh	02-Oct-97	SS1997/067	Pembrokeshire	Pwll Gwaelod	SN004399	reported by Mr Williams. taken to Fishguard (frozen).
Halichoerus grypus	F	1.10	moderate dec.	03-Oct-97	SS1997/068	Ceredigion	Llanrhystud	SN526698	reported by Gwyn Jones. taken to Fishguard (frozen).
Halichoerus grypus	?	? p	?	04-Oct-97	SS1997/069	Pembrokeshire	Broadhaven	SM860140	reported by Mrs Far. nothing found.

Appendix 2. Marine Environmental Monitoring 1997 Welsh Coast Strandings (Grey seals).

Species	Sex	Length	Condition	Date	SS_No	County	Locality	Grid_ref	Comment
Halichoerus grypus	?	? p	Fresh	04-Oct-97	SS1997/069a	Pembrokeshire	Porth Lleuog	SM699231	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	04-Oct-97	SS1997/069b	Pembrokeshire	Porth Lleuog	SM699231	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	04-Oct-97	SS1997/069c	Pembrokeshire	Abermawr	SM700244	reported by Powell. Ramsey Island.
Halichoerus grypus	M	Adult	slight decomp.	05-Oct-97	SS1997/070	Ceredigion	Aberystwyth	SN581819	reported by Miford Haven Coastguard. samples taken. council informed for disposal.
Halichoerus grypus	?	? p	Fresh	05-Oct-97	SS1997/070a	Pembrokeshire	Aberfelin	SM930402	reported by Powell. North Pembrokeshire.
Halichoerus grypus	?	? p	Fresh	07-Oct-97	SS1997/070b	Pembrokeshire	Porth Lleuog	SM699231	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	07-Oct-97	SS1997/070c	Pembrokeshire	The Waterings	SM705239	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	?	07-Oct-97	SS1997/070d	Pembrokeshire		SM888392	reported by Jemma. North Pembrokeshire.
Halichoerus grypus	?	? p	?	08-Oct-97	SS1997/071	Ceredigion	Llanon	SN510676	reported by Paul Evans Heritage Coast.
Halichoerus grypus	?	? p	moderate dec.	09-Oct-97	SS1997/072	Pembrokeshire	Newgale beach	SM854199	reported by Mrs Scammel. council informed for disposal.
Halichoerus grypus	?	? p	moderate dec.	09-Oct-97	SS1997/073	Ceredigion	New Quay	SN387605	reported by Dewi Roberts Env. Health.
Halichoerus grypus	?	? p	Fresh	09-Oct-97	SS1997/073a	Pembrokeshire	Aberfelin	SM930402	reported by Powell. North Pembrokeshire.
Halichoerus grypus	?	? p	Fresh	09-Oct-97	SS1997/073b	Pembrokeshire	Porth Tre-wen	SM775303	reported by Powell. North Pembrokeshire.
Halichoerus grypus	?	? p	Fresh	10-Oct-97	SS1997/073c	Pembrokeshire	Porth Lleuog	SM699231	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	10-Oct-97	SS1997/073d	Pembrokeshire	Garlic	SM697239	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	10-Oct-97	SS1997/073e	Pembrokeshire	Garlic	SM697239	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	10-Oct-97	SS1997/073f	Pembrokeshire	Abermawr	SM700244	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	?	11-Oct-97	SS1997/073g	Pembrokeshire		SM887387	reported by Jemma. North Pembrokeshire.
Halichoerus grypus	?	sub Adult	moderate dec.	12-Oct-97	SS1997/074	Pembrokeshire	Newgale beach	SM849215	found when searching for above. bagged and removed to car park.
Halichoerus grypus	?	? p	moderate dec.	12-Oct-97	SS1997/075	Pembrokeshire	Newgale beach	SM854199	reported by Mr Ingleton. animal bagged and removed to car park.
Halichoerus grypus	?	?	moderate dec.	12-Oct-97	SS1997/076	Ceredigion	Tywyn	SH577006	reported by Mrs Edwards.
Halichoerus grypus	?	? p	moderate dec.	14-Oct-97	SS1997/077	Ceredigion	Aberarth	SN479641	reported by Paul Evans Heritage Coast.
Halichoerus grypus	?	? p	Fresh	14-Oct-97	SS1997/077a	Pembrokeshire	Garlic	SM697239	reported by Powell. Ramsey Island. still-born
Halichoerus grypus	?	? p	moderate dec.	14-Oct-97	SS1997/077b	Pembrokeshire	Rhodd Uchaf	SM706243	reported by Powell. Ramsey Island.
Halichoerus grypus	?	? p	Fresh	14-Oct-97	SS1997/077c	Pembrokeshire	The Waterings	SM705239	reported by Powell. Ramsey Island. still-born
Halichoerus grypus	?	?	?	15-Oct-97	SS1997/078	Gwynedd	Fairbourne	SH610130	reported by Barmouth HM.
Halichoerus grypus	?	?	?	15-Oct-97	SS1997/079	Gwynedd	Fairbourne	SH610130	reported by Barmouth HM.
Halichoerus grypus	?	? p	?	15-Oct-97	SS1997/082	Ceredigion	Aberaeron	SN452629	reported by Stuart Roberts. nothing found.
Halichoerus grypus	?	? p	advanced decomp.	16-Oct-97	SS1997/083	Ceredigion	New Quay	SN396596	reported by Ben/Steve Hartley.
Halichoerus grypus	F	1.05	live/died	01-Oct-97	SS1997/084	Anglesey	Anglesey	?	pm by Dr J Baker.
Halichoerus grypus	?	? p	?	18-Oct-97	SS1997/085	Pembrokeshire	Stackpole	SR978939	reported by National Trust. council informed for disposal.
Halichoerus grypus	?	? p	?	18-Oct-97	SS1997/085a	Pembrokeshire		SM880370	reported by Jemma. North Pembrokeshire.
Halichoerus grypus	?	? p	?	21-Oct-97	SS1997/086	Pembrokeshire	Porthmynawyd	SM826229	reported by Betty Birch
Halichoerus grypus	?	? p	?	21-Oct-97	SS1997/087	Pembrokeshire	Porthmynawyd	SM826229	reported by Betty Birch
Halichoerus grypus	?	? p	?	21-Oct-97	SS1997/087a	Pembrokeshire		SM878373	reported by Jemma. North Pembrokeshire.
Halichoerus grypus	?	? p	?	29-Oct-97	SS1997/111	Ceredigion	Llanon	SN510676	reported by Sue Byrne/Bob Mathews CCW. headless. nothing found.
Halichoerus grypus	?	?	?	30-Oct-97	SS1997/113	Pembrokeshire	Broadhaven	SM860140	Found by fishermen. nothing found on 2nd Nov 97.
Halichoerus grypus	M	?	?	05-Nov-97	SS1997/113a	Gwynedd	Abersoch	SH315285	
Halichoerus grypus	?	? p	moderate dec.	12-Nov-97	SS1997/117	Pembrokeshire	Dale	SM810065	Jubilee beach.
Halichoerus grypus	?	?	moderate dec.	17-Nov-97	SS1997/118	Swansea	Oxwich	SS518876	reported by M. Stephens E.A. David Smith Pollution Control, informed for disposal.
Halichoerus grypus	M	1.02	fresh	11-Dec-97	SS1997/134	Anglesey	Anglesey	?	Anglesey via Welsh Mountain Zoo. > Dr John Baker.
Halichoerus grypus	F	1.76	fresh	11-Dec-97	SS1997/135	Anglesey	Anglesey	?	Anglesey via Welsh Mountain Zoo. > Dr John Baker.
Halichoerus grypus	?	?	?	18-Nov-97	SS1997/136	Pembrokeshire	Coppit Hall		reported by Mr Griffiths. council informed for disposal.
Halichoerus grypus	?	? p	advanced decomp.	22-Nov-97	SS1997/137	Pembrokeshire	Newgale beach	SM850215	reported by Mr Scammel. council informed for disposal.
Halichoerus grypus	?	Adult	advanced decomp.	01-Dec-97	SS1997/138	Ceredigion	Tan-y-bwlch	SN580800	reported by Arthur Chator.
Halichoerus grypus	?	? p	?	02-Dec-97	SS1997/139	Pembrokeshire	beach	SM730270	reported by Mrs Allard. council informed for disposal.
Halichoerus grypus	?	?	?	09-Dec-97	SS1997/140	Pembrokeshire	Broadhaven	SM860135	reported by Mrs Scammel. council informed for disposal.
Halichoerus grypus	?	?	?	09-Dec-97	SS1997/141	Pembrokeshire	Broadhaven	SM860135	reported by Mrs Scammel. council informed for disposal.

Appendix 2. Marine Environmental Monitoring 1997 Welsh Coast Strandings (Grey seals).

Species	Sex	Length	Condition	Date	SS_No	County	Locality	Grid_ref	Comment
Halichoerus grypus	M	1.16	live/died	26-Dec-97	SS1997/142	Ceredigion	Borth	SN607890	reported by RSPCA stored frozen
Halichoerus grypus	M	1.10	moderate dec.	26-Dec-97	SS1997/143	Ceredigion	Aberystwyth	SN583821	reported by Aberystwyth Police. stored frozen.

Appendix 3. Marine Environmental Monitoring 1997 Welsh Coast Strandings (Leatherback turtles).

Species	Sex	Length	Condition	EndDate	DBNumbers	County	Location	GridRef	Notes
<i>Dermodochelys coriacea</i>	?	?	dead	Tuesday, August 05, 1997	ST1997/sas1	GWYNEDD			DEAD IN SEA OFF PORTHMADOG (3' long upside down).
<i>Dermodochelys coriacea</i>	?	?	live	Monday, July 21, 1997	ST1997/sas2	GWYNEDD	52 42 56 04 55 93		LIVE ANIMAL SEEN 6 MILES OFF BARDSEY ISLAND.
<i>Dermodochelys coriacea</i>	?	?	decomposed	Wednesday, September 03, 1997	ST1997/1	GWYNEDD	Criccieth	SH481373	reported by Daffyd Jones CCW / Holyhead Coastguard.
<i>Dermodochelys coriacea</i>	F	2.27	decomposed	Monday, September 08, 1997	ST1997/2	CARMARTHENSHIRE	PEMBREY	SS397998	reported by Neal Parry, buried at Fishguard tagged from French Guiana.
<i>Dermodochelys coriacea</i>				Monday, September 08, 1997		PEMBROKESHIRE	ABERMAWR	SM882346	reported by David Saunders, nothing found 9th Sept.
<i>Dermodochelys coriacea</i>	?	2.05	fresh	Tuesday, September 16, 1997	ST1997/3	Lincolnshire	Spalding	TF259241	reported by Ian Robinson RSPCA, samples taken skin, eyes and vertebrae.
<i>Dermodochelys coriacea</i>	?	c 1.40	live	Saturday, September 27, 1997	ST1997/sas3	GWYNEDD	52 31 10 04 28 12		Live animal seen 2 miles off Borth at 13:30 feeding on jellyfish. Reported by Megan Morgan-Jenkins.
<i>Dermodochelys coriacea</i>	?	?	decomposed	Wednesday, October 01, 1997	ST1997/4	GWYNEDD	DINAS DINLLE	SH430560	reported by Lin Price. NO HEAD, NO FLIPPERS
<i>Dermodochelys coriacea</i>	M	2.25	moderately decomposed	Saturday, November 15, 1997	ST1997/5	PEMBROKESHIRE	WISEMAN'S BRIDGE	SS143055	reported by Novello Parry, samples taken and council informed for disposal.