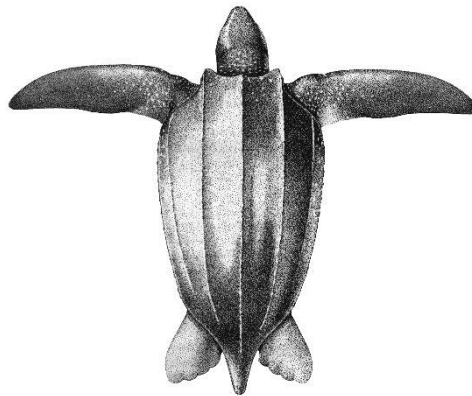


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British Isles & Republic of Ireland Marine Turtle Strandings &
Sightings
Annual Report 2014

R.S.Penrose & L.R.Gander. April 2015



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1. SUMMARY

A total of 52 turtles were reported to TURTLE during 2014:

7 Kemp's ridley turtles, 2 loggerhead turtles, 35 leatherback turtles and 8 unidentified to species.

Live stranded (3)

One loggerhead turtle from Wales and two Kemp's ridley turtles from England were recovered for rehabilitation. Unfortunately all three subsequently died in captivity.

Live sightings (25)

Eighteen leatherback turtles were sighted at sea: 9 from England, 5 from Wales, 1 from Eire and 3 from Scotland.

Seven, including some hard-shell turtles were unconfirmed to species and therefore recorded as unidentified: 5 from England, 1 Eire and 1 Northern Ireland.

Dead stranded (21)

Fourteen leatherback turtles stranded dead: 3 in England, 3 in Scotland and 8 in Eire.

Five Kemp's ridley turtles stranded dead: 2 in England, 1 in Wales, 1 in Scotland and 1 in Eire.

One loggerhead stranded dead in Eire.

One dead stranded turtle was unconfirmed and recorded as unidentified.

Dead sightings (3)

Three leatherback turtles were sighted dead at sea 2 of these were found dead entangled in fishing gear in Scotland.

Post Mortem and Samples

Six turtles received a post mortem examination: 3 Kemp's ridley, 1 loggerhead and 2 leatherbacks.

One Kemp's ridley was sampled and one Kemp's ridley is awaiting PM.

Data Sharing

2013 TURTLE database has been uploaded to the NBN Gateway <http://www.nbn.org.uk/>

TURTLE record totals

The current total of 2673 is broken down thus:

1312 Eire, 622 England, 390 Scotland, 251 Wales, 40 Northern Ireland, 32 Isles of Man, 13 Channel Isles, 13 Offshore.

2. INTRODUCTION

In 1990, the ‘Collaborative UK Marine Mammal Strandings Project’ was initiated and part-funded by the UK Department of the Environment (now Defra). The project involves detailed pathological and other investigations of stranded marine mammal carcasses (mostly cetacean) from UK waters. It forms part of the Department's international obligations towards conservation agreements, including the ‘Agreement on the conservation of Small Cetaceans of the Baltic and North Seas’ (ASCOBANS). Detailed pathological investigations of stranded marine turtles were included in 2001 and the systematic recording and occasional examination of stranded basking sharks began in 2007. The project is now named the ‘Cetacean Strandings Investigation Programme’ (CSIP, www.ukstrandings.org) (see **Figure 1**).

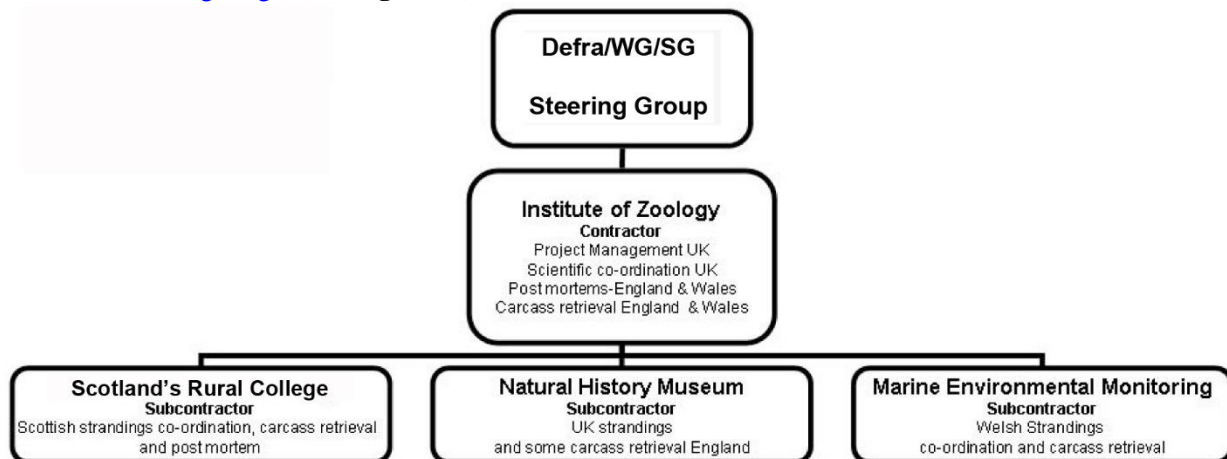


Figure 1. Current Technical Co-ordination of the Cetacean Strandings Investigation Programme (CSIP).

2.1 The UK Turtle Implementation Group.

In 1999, English Nature, now Natural England, published the UK Marine Turtles Grouped Species Action Plan (SAP) on behalf of the UK Biodiversity Group. The SAP is part of the UK Biodiversity Action Plan and aims to enhance marine turtle conservation in UK waters and in the UK Overseas Territories as well as raise awareness and knowledge of their occurrence, legal protection and measures to enhance conservation amongst marine users and the general public. The SAP was implemented by a group of organisations led by joint lead partners the Marine Conservation Society (MCS) and the Amphibian & Reptile Conservation Trust¹ (ARC). The contact agency is Scottish Natural Heritage (SNH). The Turtle Implementation Group (TIG) consists of the following organisations:-

- **Amphibian & Reptile Conservation Trust¹** is an authority on reptile and amphibian issues and was the Lead Partners or joint Lead Partners for all five of the reptile and amphibian Action Plans within the UK BAP www.arc-trust.org
Contact: *Tony Gent, 01202 391319*
- The **Department of Environment, Food and Agriculture (DEFA)** is the Isle of Man Government's department responsible for species protection and site designation under the Manx Wildlife Act 1990. The Department is also the key Isle of Man contact for strandings and sightings of sea turtles.
Contact: *Dr Fiona Gell, 01624 685835* www.gov.im/defa
- **DOE (NI) Marine Division** is responsible for protecting the marine environment while maximising the sustainable use of its resources, now and for future generations.
Contact: *Gary Burrows, 028 7082 3600.*
- **Joint Nature Conservation Committee (JNCC)** is the public body that advises the UK Government and devolved administrations on UK-wide and international nature conservation.
Contact: *Kelly Macleod, 01224 266584*

¹ Formally Herpetological Conservation Trust (HCT).

- **Marine Conservation Society (MCS)** is the UK charity dedicated to the protection of the marine environment and its wildlife. MCS was the joint Lead Partner of the Marine Turtles Grouped Species Action Plan and coordinates the TIG. www.mcsuk.org
Contact: *Sue Ranger or Peter Richardson, 01989 566017*
- **Marine Environmental Monitoring (MEM)** is a member of the Defra “UK Cetacean Strandings Investigation Programme”, www.strandings.com www.ukstrandings.org MEM also manages ‘TURTLE’ the British Isles & Republic of Ireland database holding both records of sightings and strandings of marine turtles dating back to 1748.
Contact: *Rod Penrose, (Reporting telephone No. 01239 683033) rodpenrose@strandings.demon.co.uk*
- **Marine Turtle Research Group** is based at the University of Exeter, Cornwall Campus and carries out fundamental and applied research on marine turtles in British waters, the Mediterranean, West Africa and throughout the UK Overseas Territories.
Contacts: *Prof Brendan Godley & Dr Annette Broderick 01326 371 861.*
- **MEDASSET**, founded in 1988, is an international environmental NGO registered as a charity and private company in the UK and as a Non Profit Organisation in Greece, working for the conservation of sea turtles and their habitats throughout the Mediterranean, through scientific research, environmental education, political lobbying and awareness-raising.
Contact: *Lily Venizelos, + 30 210 3613572 medasset@medasset.org*
- **National Parks and Wildlife Service (NPWS)**, part of the Department of Arts, Heritage and the Gaeltacht, provides the legislative and policy framework for the conservation of nature and biodiversity in the Republic of Ireland. It also oversees its implementation, based on good science, with particular emphasis on the protection of habitats and species, through the designation and conservation of sites under EU Directives and national legislation.
Contact: *Dr Ferdia Marnell, +3531 8883290.*
- **Natural England (NE)** is the Government agency that champions the conservation of wildlife and natural features throughout England.
Contact: *Paul Edgar, 0300 060 1324 Paul.Edgar@naturalengland.org.uk or Katharine Woods, 0300 060 0638 katharine.woods@naturalengland.org.uk*
- **Natural Resources Wales (NRW)** Formerly the Countryside Council for Wales, is the Government’s statutory advisor on sustaining natural beauty, wildlife and the opportunity for outdoor enjoyment in Wales and its inshore waters.
Contact: *Tom Stringell, 03000 654912 Tom.Stringell@cyfoethnaturiolcymru.gov.uk or Ceri Morris, 03000 654913 Ceri.Morris@cyfoethnaturiolcymru.gov.uk*
- **Queen’s University Belfast:** Dr Jonathan Houghton works on the foraging ecology and migratory behaviour of marine turtles with a particular focus on the predator prey interactions of leatherback turtles and gelatinous zooplankton (jellyfish).
Contact: *Dr Jonathan Houghton, 028 90972297 j.houghton@qub.ac.uk*
- **Scottish Natural Heritage (SNH)** is a government body responsible to the Scottish Government and Scottish Parliament. SNH promotes the care, improvement, responsible enjoyment, understanding, appreciation and sustainable use of Scotland’s natural heritage. SNH is the contact government point for the Marine Turtles Grouped Species Action Plan.
Contact: *Laura Clark, 01463 725237.*
- **The Wildlife Trusts** is a partnership of 47 Wildlife Trusts, across the UK, caring for more than 2,400 nature reserves. It campaigns for the protection of wildlife and invests in the future by helping people of all ages to gain a greater appreciation and understanding of nature. The Wildlife Trusts Basking Shark Project contributes at sea survey data, from the west coast of Britain on an annual basis.
Contact: *Dr Nick Tregenza, 01736 711783.*
- **University College Cork** *Professor John Davenport* is Emeritus Professor of Zoology. He has worked on most species of sea turtles, but especially leatherbacks, since the early 1980s, conducting fundamental studies on their physiology and biomechanics. He is currently linked to turtle conservation in Bermuda, and conducts turtle research with colleagues in Nova Scotia, France and Hawaii.
Contact: *Professor John Davenport, +44 (0)1392 926233 or Dr Tom Doyle +353 (0) 21 4703119.*

3. MATERIALS AND METHODS

Contact details vary for different parts of the British Isles & Republic of Ireland and the Turtle Code (Appendix 2.) should be consulted for the relevant contacts.

In **England & Wales** a 24 hour answer phone **01239 683033**, is interrogated at regular intervals. A message requests callers to leave details of the stranding or sighting and location, along with their name and contact phone number, so they may be reached if confirmation of details are required. A dedicated email address to receive digital photographs has been created info@strandings.demon.co.uk

For **Scotland** all records should be reported to Scottish Natural Heritage on **01463 725237** with dead strandings being reported to the Scotland’s Rural College (SRUC) **01463 243030**. Live strandings and entanglements should be reported to the SSPCA on **03000 999 999**.

For **Northern Ireland** all records of live or dead turtles should be reported to the Portrush Coastal Zone Centre on **028 7082 3600**.

In the **Republic of Ireland** all records should be reported to Dr Tom Doyle on **353-(0)21-4703119** (work) and **353-(0)87 1354938** (mobile). Sightings & strandings can also be reported online in the Republic of Ireland at www.turtle.ie

UK turtle sightings and strandings can also be reported using the UK Turtle Code online at www.euroturtle.org/turtlecode

On the **Isle of Man** all marine animal strandings should be reported to **DEFA** on **01624 685835** or directly to Dr Fiona Gell **07624 473753**.

The following criteria are applied: -

3.1 Live Animals

(Condition code 1)²

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/turtles in the UK. It has been agreed that in the case of a live-stranding the first point of call would be the RSPCA (England & Wales), SSPCA (Scotland) as they support a manned 24-hour emergency phone. The RSPCA/SSPCA would then contact the relevant organisations, Marine Environmental Monitoring etc. Contacts and advice can be found in the UK Turtle Code at www.strandings.com/Turtlepage.html

3.2 Dead Animals

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

(Condition code 2b slight decomposition)²

(Condition code 3 moderate decomposition)²

Health and safety precautions are followed with the animal being handled only with gloved hands. Preferably it is then taken immediately for *post-mortem* examination, but due to funding cuts in 2006 freezing is now an option until transport becomes available.

(Condition code 4 advanced decomposition)²

(Condition code 5 mummified carcass)²

Species identified, basic measurements taken together with skin for DNA. Health and safety precautions being observed. Local Authorities then contacted for safe disposal of remains.

All live and dead marine turtles are allocated a "T0000/001" number. "T" designates the animal as a marine turtle, 0000 is the year and /001 is an individual number for each record of the same year. Records of all strandings & sightings in the British Isles & Republic of Ireland are kept by the Strandings Co-ordinator. Copies of *post-mortem* examination reports are sent from the Strandings Co-ordinator to the finder and others associated with the relevant stranding.

² Body conditions based on Kuiken, T. and Garcia Hartmann, M (1991) Proceedings of the European Cetacean Society workshop on cetacean pathology: dissection techniques and tissue sampling. ECS newsletter 17, Special issue: 39pp

4. RESULTS

The following three tables include marine turtle 'sightings' and 'strandings' reported through 2014.

Table 1.

2014 Total number of reported marine turtles for the British Isles & RoI. (live & dead).													
Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Green turtle (<i>Chelonia mydas</i>)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hawksbill turtle (<i>Eretmochelys imbricata</i>)	0	0	0	0	0	0	0	0	0	0	0	0	0
Kemp's ridley turtle (<i>Lepidochelys kempii</i>)	2	1	0	0	0	0	0	0	0	0	0	4	7
Leatherback turtle (<i>Dermochelys coriacea</i>)	1	2	0	0	4	2	2	3	8	11	1	1	35
Loggerhead turtle (<i>Caretta caretta</i>)	1	1	0	0	0	0	0	0	0	0	0	0	2
Unidentified	0	0	0	0	0	2	2	2	2	0	0	0	8
Total animals	4	4	0	0	4	4	4	5	10	11	1	5	52

Table 2.

2014 Number of live marine turtles.													
Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Green turtle (<i>Chelonia mydas</i>)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hawksbill turtle (<i>Eretmochelys imbricata</i>)	0	0	0	0	0	0	0	0	0	0	0	0	0
Kemp's ridley turtle (<i>Lepidochelys kempii</i>)	0	0	0	0	0	0	0	0	0	0	0	2	2
Leatherback turtle (<i>Dermochelys coriacea</i>)	1	0	0	0	3	2	2	2	7	1	0	0	18
Loggerhead turtle (<i>Caretta caretta</i>)	0	1	0	0	0	0	0	0	0	0	0	0	1
Unidentified	0	0	0	0	0	2	2	1	2	0	0	0	7
Total animals	1	1	0	0	3	4	4	3	9	1	0	2	28

Table 3.

2014 Number of dead marine turtles.													
Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
Green turtle (<i>Chelonia mydas</i>)	0	0	0	0	0	0	0	0	0	0	0	0	0
Hawksbill turtle (<i>Eretmochelys imbricata</i>)	0	0	0	0	0	0	0	0	0	0	0	0	0
Kemp's ridley turtle (<i>Lepidochelys kempii</i>)	2	1	0	0	0	0	0	0	0	0	0	2	5
Leatherback turtle (<i>Dermochelys coriacea</i>)	0	2	0	0	1	0	0	1	1	10	1	1	17
Loggerhead turtle (<i>Caretta caretta</i>)	1	0	0	0	0	0	0	0	0	0	0	0	1
Unidentified	0	0	0	0	0	0	0	1	0	0	0	0	1
Total animals	3	3	0	0	1	0	0	2	1	10	1	3	24

The general geographical distribution of each species, strandings and sightings, are plotted on the following maps. Although the maps are generated directly from the data stored, they should be regarded as showing distribution of animals rather than giving absolute counts. While the co-ordinate system and the mapping software can theoretically differentiate between points as close as 1 metre apart, even with separations of 100 metres at the scale at which these maps are presented, some symbols may appear to overlap completely.

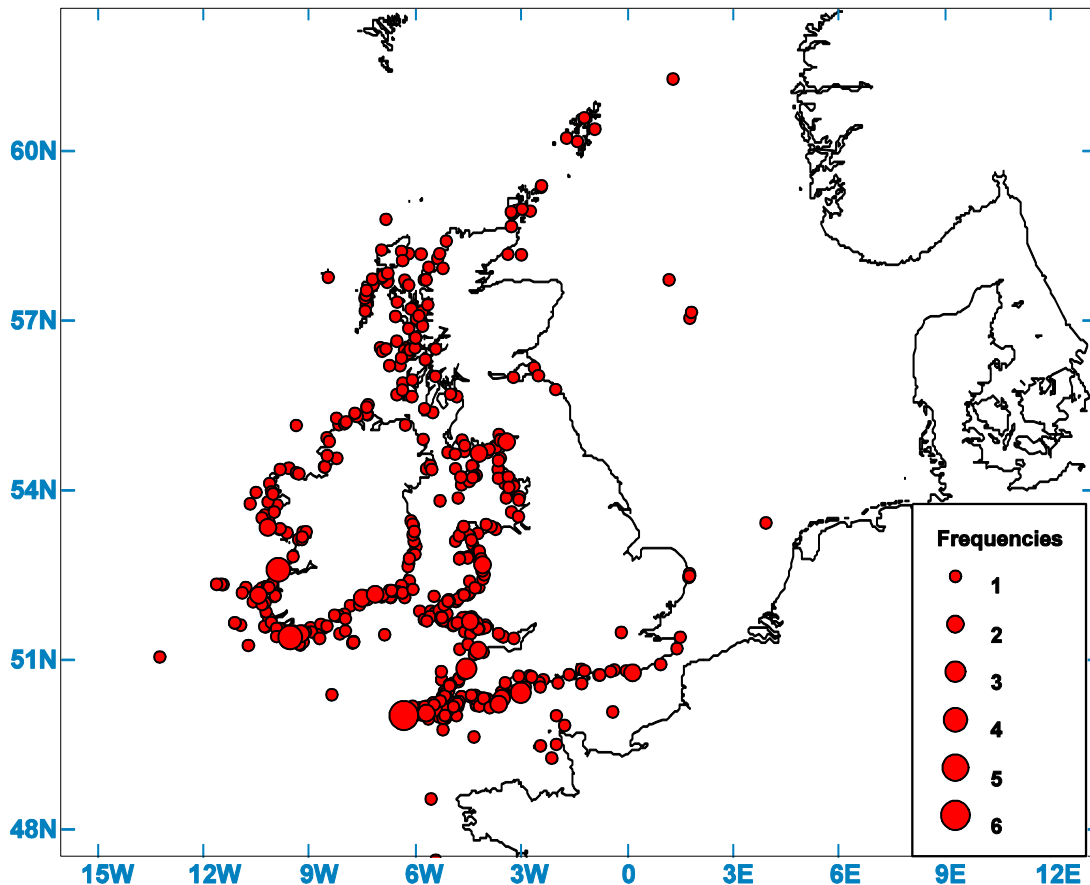


Figure 2. *All species sightings & strandings 2004-2014.*

All species, sightings & strandings over the eleven year period 2004-2014 have been plotted in **Figure 2.**

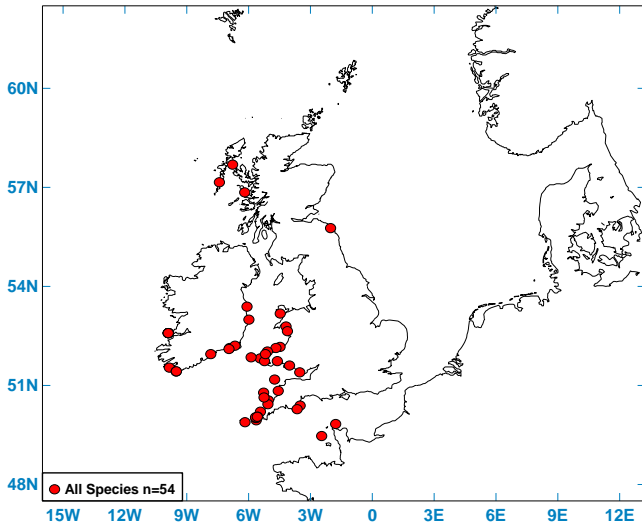


Figure 3. All species sightings & strandings 2012.

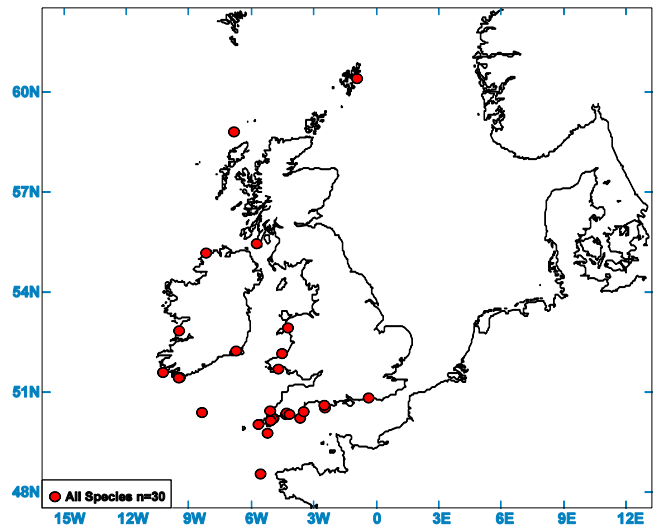


Figure 4. All species sightings & strandings 2013.

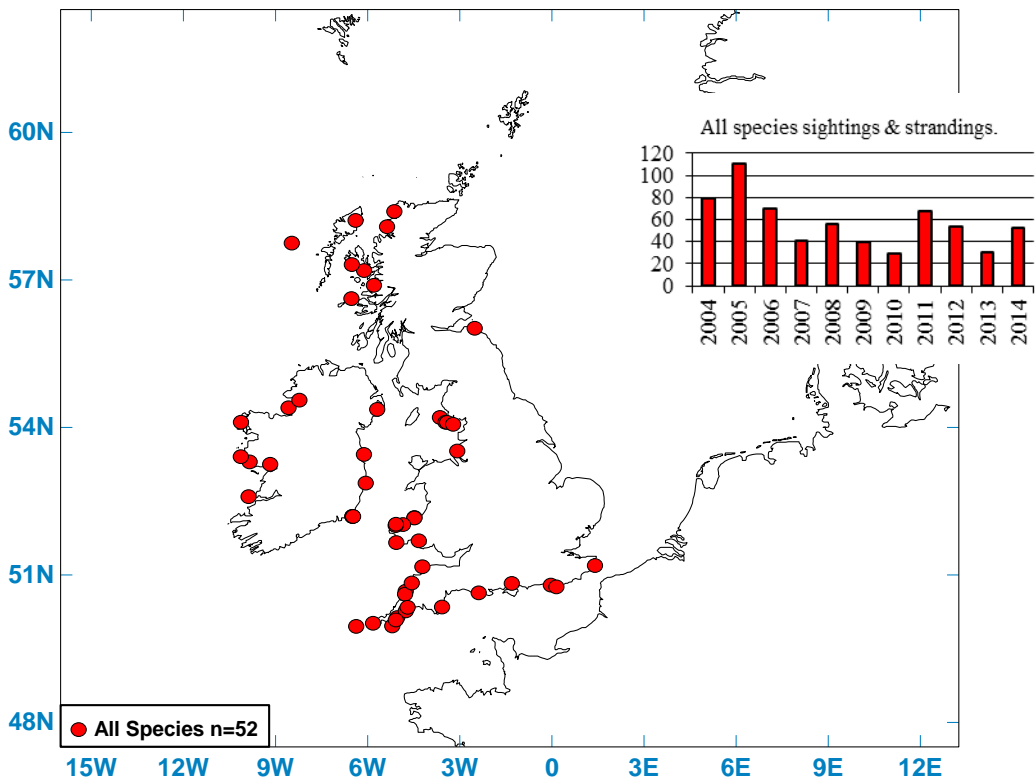


Figure 5. All species sightings & strandings 2014.

4.1 Sightings.

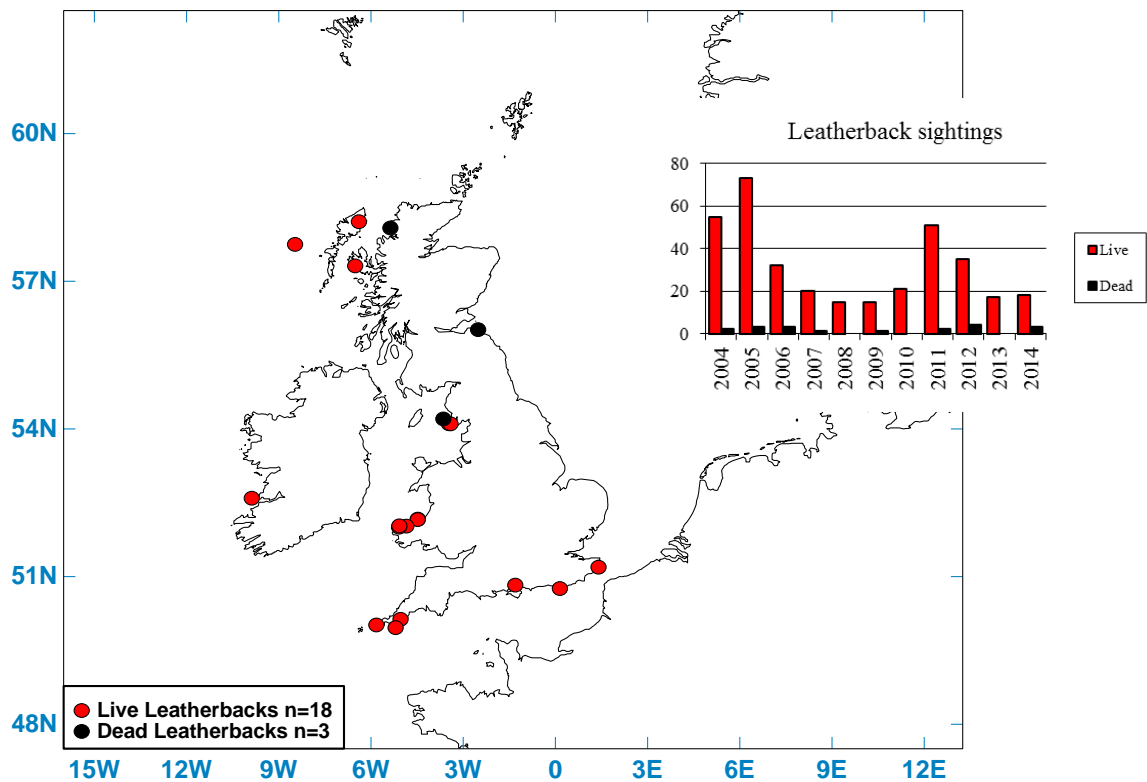


Figure 6. Leatherback sightings 2014.

No live or dead **loggerhead turtle** sightings were reported during 2014. However, sightings of both live and dead loggerhead turtles have been recorded in recent years as shown in **Figure 7**.

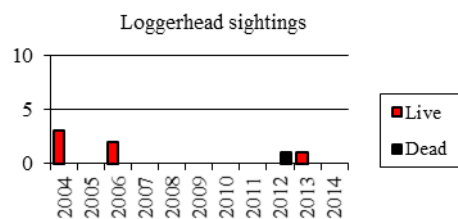


Figure 7. Loggerhead sightings 2014.

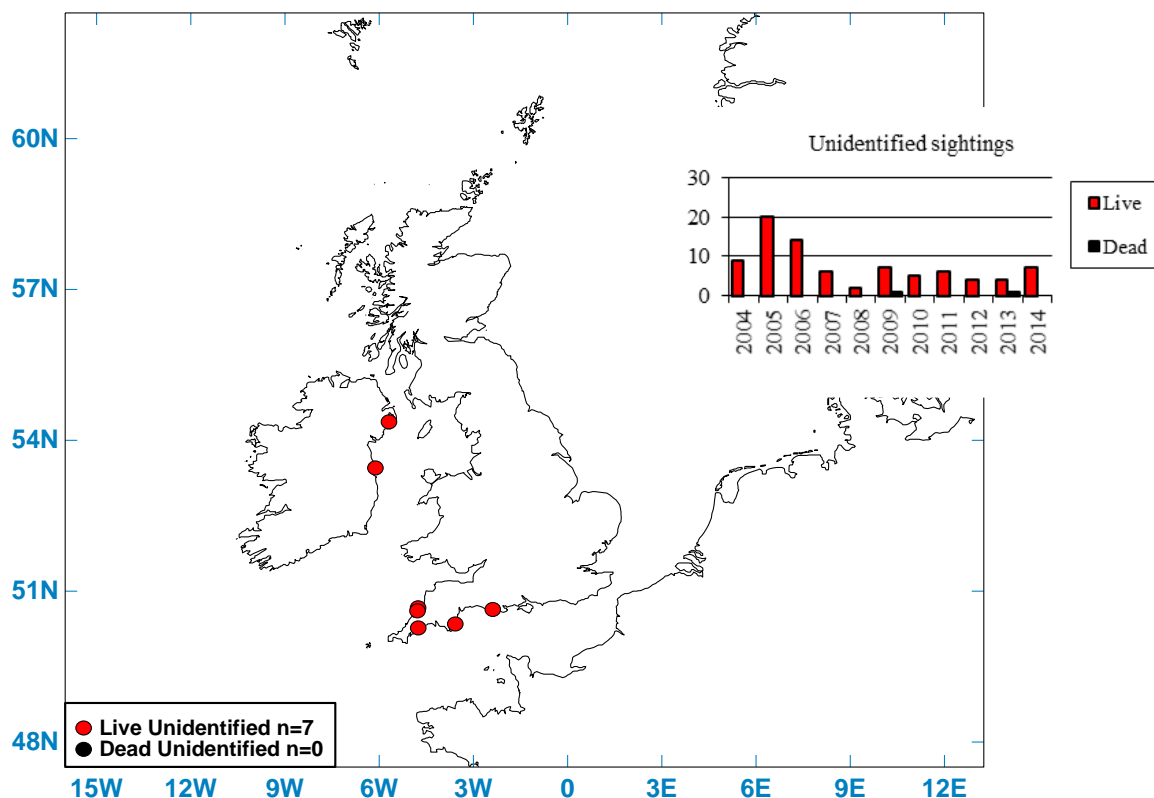


Figure 8. Unidentified sightings 2014.

4.2 Strandings.

No live or dead **green turtle** strandings were reported during 2014. However, strandings of both live and dead green turtles have been recorded in recent years as shown in **Figure 9**.

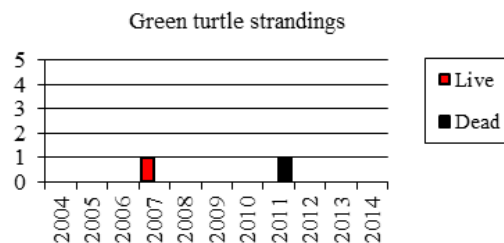


Figure 9. Green turtle strandings 2014.

No live or dead **hawksbill turtle** strandings were reported during 2014. There have been no records of hawksbill turtle strandings in the database. One sighting record exists off Cork Harbour in February 1983 when one was caught in a herring net and brought ashore alive.

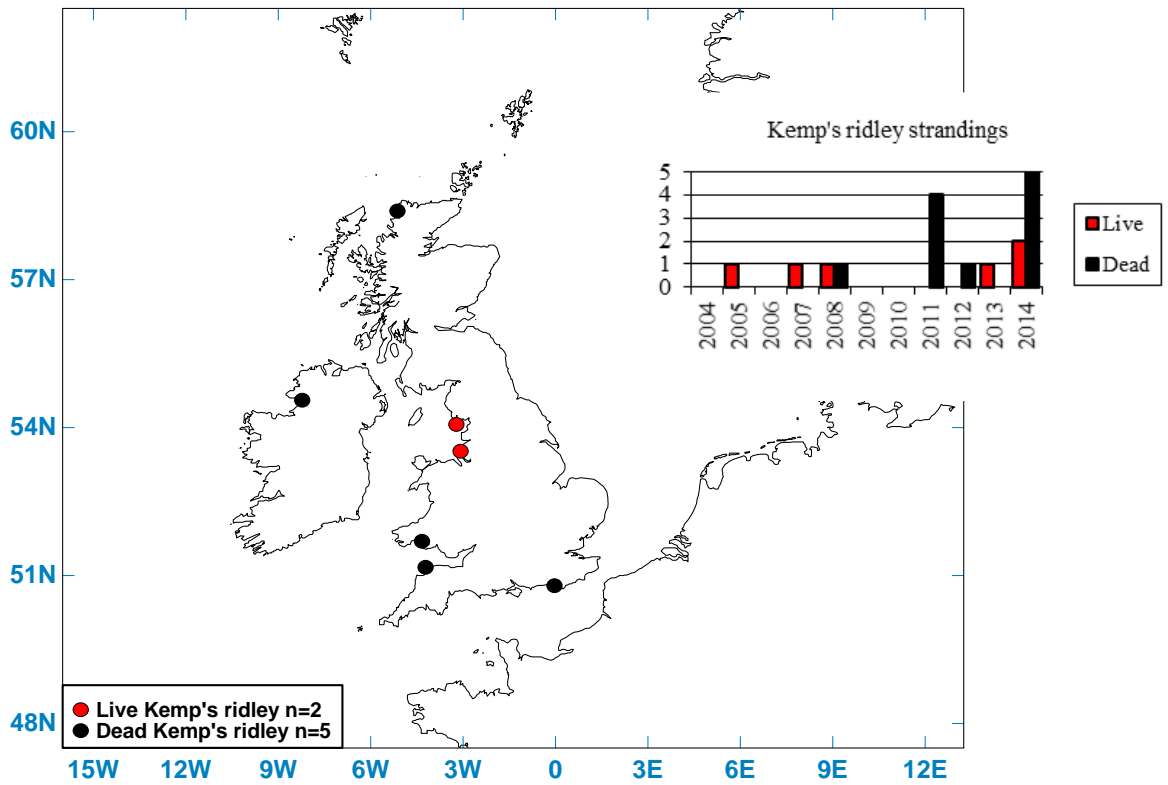


Figure 10. *Kemp's ridley strandings 2014.*

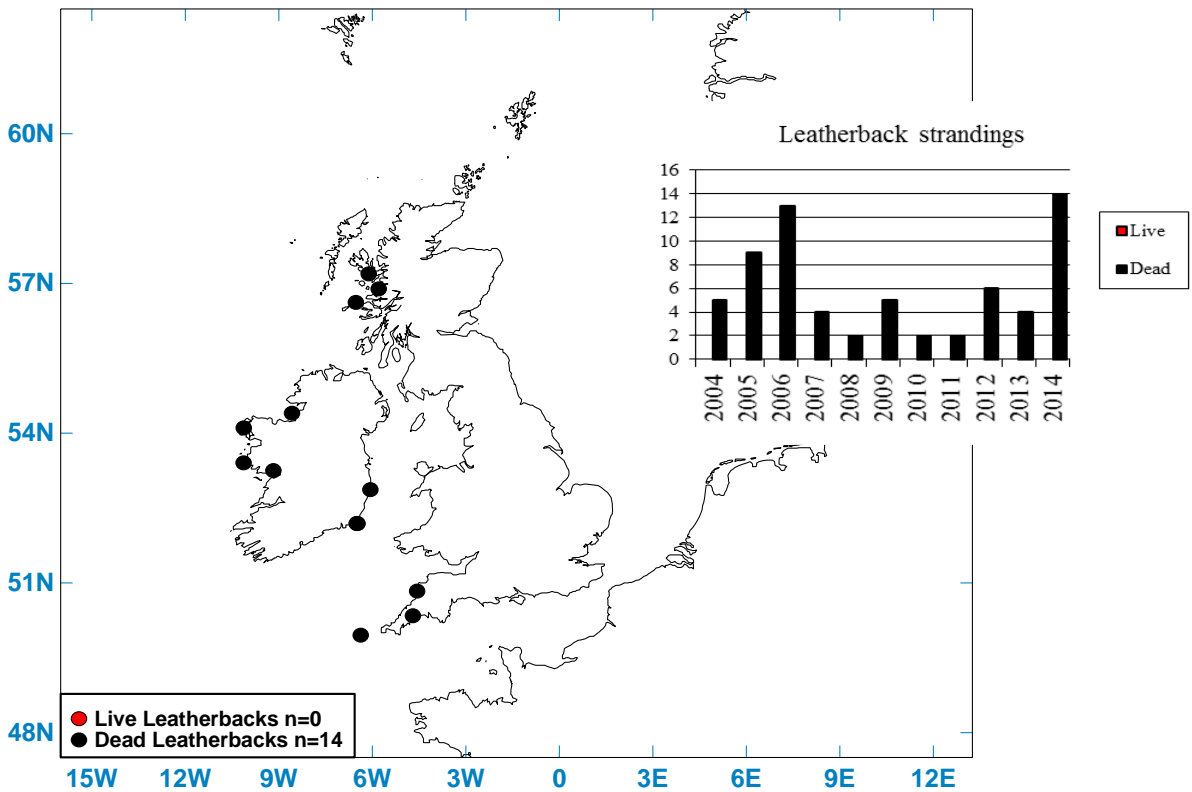


Figure 11. *Leatherback strandings 2014.*

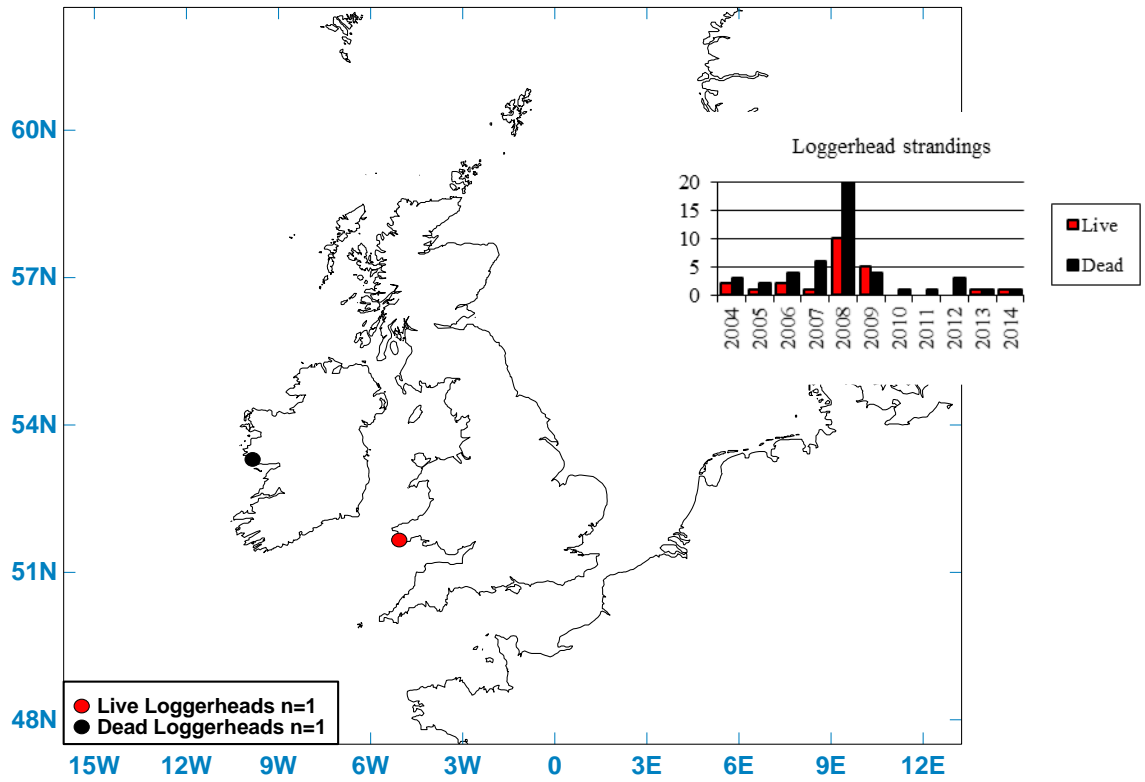


Figure 12. *Loggerhead strandings 2014.*

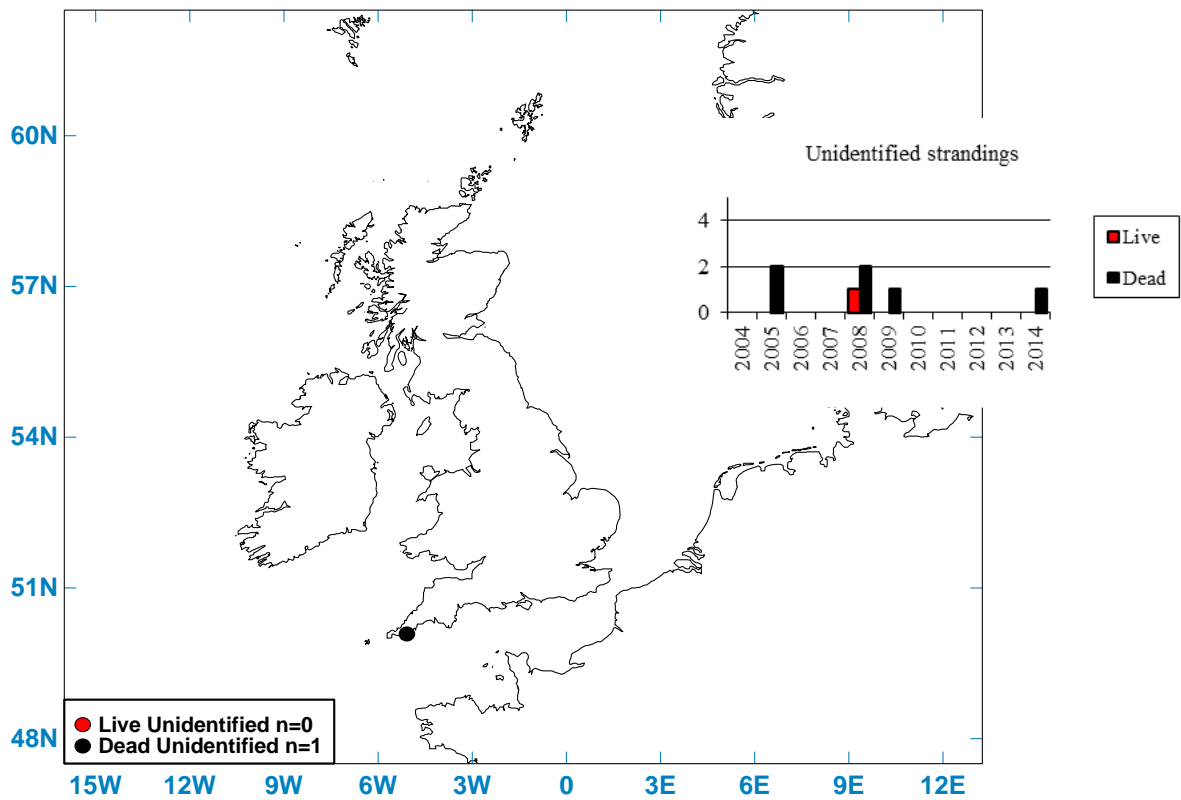


Figure 13. *Unidentified strandings 2014.*

All leatherback strandings and sightings, both dead and alive have been plotted by month for the period 2004 - 2014 (n=445) shown in **Figure 14**. The average figure was taken over 2004-2014 and plotted in **Figure 15**. The graph clearly shows the increase in numbers through the summer months and gives a good indication on when to expect leatherbacks around the British Isles & Republic of Ireland coast.

The records for the hard-shell species are more sporadic. Of the hard-shell species the most numerous recorded turtle over the 2004 - 2014 period is the loggerhead (n=78). The data for this species are plotted in **Figure 16** and **Figure 17**.

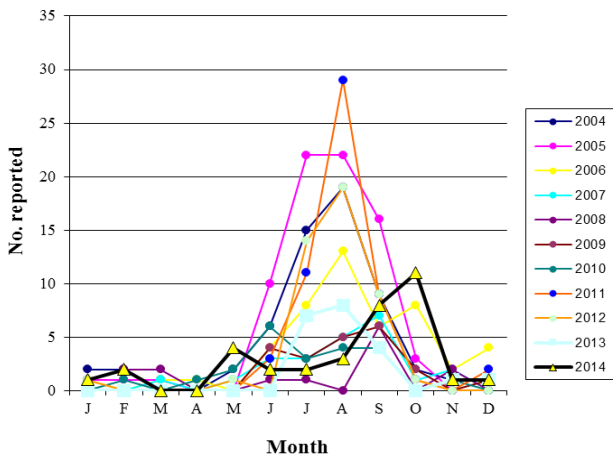


Figure 14. All leatherbacks by month.

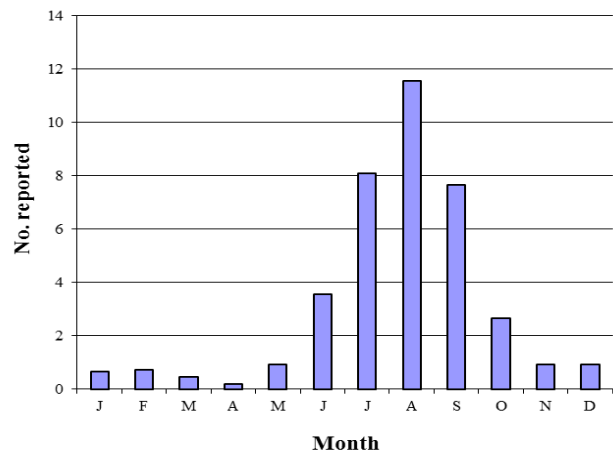


Figure 15. All leatherbacks average over 2004-2014

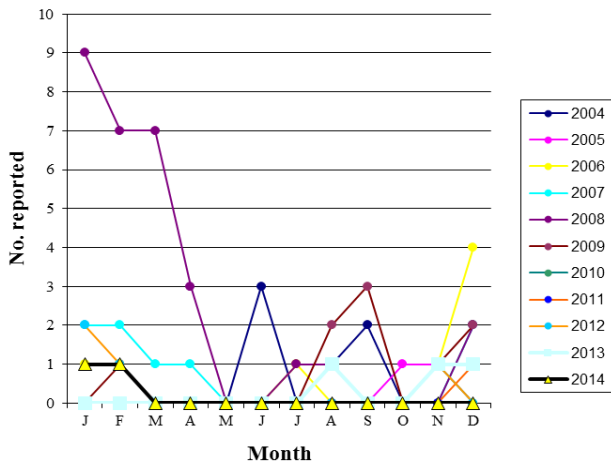


Figure 16. All loggerheads by month.

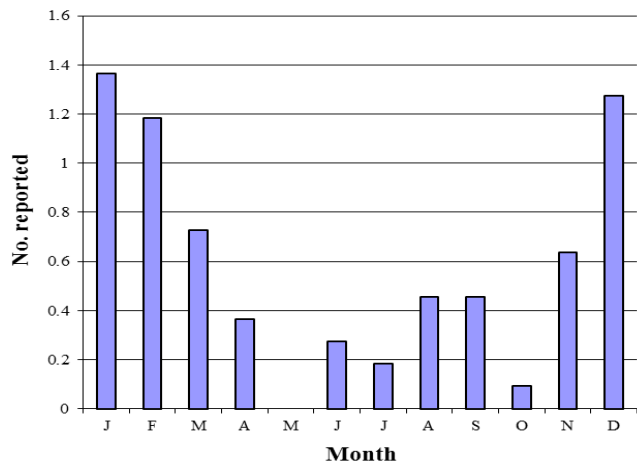


Figure 17. All loggerheads average over 2004-2014.

Table 4.

Cumulative number of records.		
Country	All Species	
	2014	1748 - 2014
Rep. of Ireland	12	1312
England	23	622
Scotland	9	390
Wales	7	251
N. Ireland	1	40
Isle of Man	0	32
Channel Islands	0	13
Offshore	0	13
Total	52	2673

The ‘Offshore’ row in **Table 4.** includes records of turtles where it is difficult to attribute a county ie, animal far from shore or nearer to Europe than UK.

Countries are listed in **Table 4.** by descending order of total number of records shown in the year **1748 – 2014** column.

Table 5.

Species Comparison.												
Country	<i>1994 - 2004</i>											
	2004 - 2014											
	GT	HB	KR	LBT	LOG	UNI						
England	2	0	0	0	5	2	173	125	16	22	32	49
Scotland	2	1	0	0	0	2	105	65	22	23	14	12
Rep. of Ireland	0	1	0	0	0	1	252	162	20	22	15	15
Wales	0	0	0	0	2	5	70	80	2	15	7	11
Channel Islands	1	1	0	0	0	0	0	1	2	0	1	1
N. Ireland	0	0	0	0	0	0	15	4	0	0	3	2
Isle of Man	0	0	0	0	0	0	12	13	0	0	5	4
Offshore	0	0	0	0	0	0	4	7	0	1	0	1
Total	5	3	0	0	7	10	631	457	62	83	77	95

GT = Green turtle, **HB** = Hawksbill turtle, **KR** = Kemp’s ridley turtle, **LBT** = Leatherback turtle, **LOG** = Loggerhead turtle, **UNI** = Unidentified turtle.

Table 6.

TURTLE Database Species Totals (1748 - 2014).	
Species	TOTAL
Green turtle (<i>Chelonia mydas</i>)	10
Hawksbill turtle (<i>Eretmochelys imbricata</i>)	1
Kemp's ridley turtle (<i>Lepidochelys kempii</i>)	49
Leatherback turtle (<i>Dermochelys coriacea</i>)	2006
Loggerhead turtle (<i>Caretta caretta</i>)	225
Unidentified	382
Total animals	2673

The total records held in TURTLE are 2673 (end of 2014). However, some records with inadequate year data have been excluded in this report and show as a discrepancy compared to previous years in some totals presented in Table 6.

A breakdown of records for each country is shown in **Table 4**. However, the eleven year comparison, 1994-2004 / 2004-2014 shown in **Table 5**, shows a marked decline in leatherback turtles recorded for the Republic of Ireland compared with increases for nearly all other countries, the high numbers in 1994-2004 are a result of the concerted efforts of Gabriel King in investigating and collecting historical records around the Irish coast.

5. MATTERS ARISING.

5.1 Retrospective Reports.

There was one retrospective report submitted to the TURTLE database during 2014.

T2005/112 a live leatherback turtle sighted off Kilt rock Isle of Skye, Highland, Scotland on the 20th July 2005.

6. LIVE STRANDING EVENTS 2014.

There were 3 live-strandings of marine turtles reported in 2014.

Loggerhead turtle **T2014/004** found stranded alive at Freshwater West, Pembrokeshire, Wales on 13th February 2014.

Kemp's ridley turtle **T2014/039** found stranded alive at Formby Point, Sefton, Lancaster on 20th December 2014.

Kemp's ridley turtle **T2014/040** found stranded alive at Walney Island, Cumbria on 20th December 2014.

6.1 Rehabilitation

T2014/004 was a loggerhead turtle found stranded alive at Freshwater West, Pembrokeshire, Wales on 13th February 2014. The CSIP/MEM Strandings Co-ordinator was informed by BDMLR that a member of the public had retrieved the turtle to his vehicle. MEM collected the turtle which was extremely lethargic due to the low temperatures. However it survived the night in a shallow tank with water at 1 degree C above the sea temperature when found **Plate 1**.

Next day MEM delivered the turtle to David Wains at Bristol Aquarium to commence the rehabilitation process. The turtle responded well for the first few days but unfortunately died after a week of care. The carcass was recovered for a full post-mortem examination within the CSIP and the results can be found under Section 8. p.22 [Samples & Post-Mortem Examinations](#).



Plate 1. *Loggerhead turtle T2014/004 starting the rehab process.*

T2014/039 was a Kemp's ridley turtle found stranded alive at Formby Point, Sefton, Lancaster on 20th December 2014. The animal was recovered for rehabilitation to RSPCA Stapeley Grange Wildlife Centre but unfortunately was found to be dead on the 24th December. The animal underwent a full post-mortem examination within the RSPCA and the results can be found under Section 8. p.22 [Samples & Post-Mortem Examinations](#).



Plate 2. *Kemp's ridley turtle T2014/039 at Formby Point.*

T2014/040 was a Kemp's ridley turtle found stranded alive at Walney Island, Cumbria on 20th December 2014. The animal was recovered by a member of the public and taken to a local zoo where he was unfortunately turned away. Luckily, the Cumbria Co-ordinator for BDMLR remained on the case and arranged rehabilitation at Maryport Aquarium.



Plate 3.

Kemp's ridley T2014/040.

Photo by: Vicki Temple.

6.2 Repatriation.

The loggerhead turtle **T2013/024 (Leona)**, that stranded in Co Clare, R.o.I. 19th November 2013 was given a clean bill of health and deemed fit to travel. Arrangements were made by Galway County Veterinary Officer, Rita Gately and Galway Atlantaquaria to fly the turtle to State Veterinarian Pascual Calabuig in the Canary Islands for release. Disappointingly, getting a free flight for the turtle proved exceedingly difficult compared to previous years, a lot of new aircraft do not have provision for heated spaces in the hold where temperatures would drop below freezing. Our thanks go to many people in the Air Freight industry who spent a lot of time contacting carriers trying to overcome technical difficulties such as heated holds, crate size access, and flight routes with no, or very few stop overs. Eventually, Air Lingus came to the rescue, although not operating an aircraft with a heated hold on this direct route, they agreed to fly the turtle within the passenger compartment. Leona was fitted with a PIT tag in the front left shoulder and two external front flipper tags and Leona's crate was secured to two passenger seats with Rita being given an adjacent seat so she could periodically conduct health checks. On arrival Leona was fitted with a satellite tag sponsored by Celestial Green Ventures and, after a total of 12 months in care, finally released into



Plate 4. *Leona secured in the passenger cabin.*

Photo by: Joanne Casserly.



Plate 5. *Leona being released with sat-tag.*
Photo by: Joanne Casserly.

Plate 6. *Satellite track up to 31st Dec 2014.*



the warm waters of the Canaries on the 4th December 2014.

The satellite track can be followed at <http://www.celestialgreenventures.com/leona-loggerhead-turtle>

7. BYCATCH.

Two turtles were reported to the TURTLE database as by-caught during 2014.

T2014/034 and **T2014/035** both leatherback turtles, were found dead entangled in creel ropes off the Scottish coast. In both cases, the carcasses were recovered and brought into harbours for collection for post-mortem examination within the CSIP.

8. SAMPLES & POST-MORTEM EXAMINATIONS.

The normal procedure for the taking of samples is from fresh animals that have been taken for *post-mortem* examination within the CSIP or the Irish Strandings project.

T2014/002 was a Kemp's ridley found dead at Pembrey beach, Carmarthenshire, Wales on the 14th January 2014. The carcass was recovered to CSIP/ZSL and is currently stored frozen awaiting a full post-mortem examination.

T2014/003 was a Kemp's ridley found dead at Woolacombe, Devon, England on the 28th January 2014. The carcass was recovered to CSIP/ZSL and underwent a full post-mortem examination. The cause of death was given as "cold-stunned".

T2014/004 was a loggerhead turtle that died during rehabilitation at Bristol Aquarium after live-stranding at Freshwater West, Pembrokeshire, Wales on the 13th February 2014. The carcass was recovered to CSIP/ZSL and underwent a full post-mortem examination. The cause of death was given as "cold-stunned and emphysematous bullae (pending histopathology)".

T2014/034 was a leatherback turtle found dead entangled in creel ropes off Dunbar, East Lothian, Scotland on the 23rd October 2014. The carcass was recovered to the CSIP/Scottish Marine Animal Stranding Scheme (SMASS) where it underwent a full post-mortem examination. Cause of death was given as drowning as a result of entanglement, (pending lab results).

T2014/035 was a leatherback turtle found dead entangled in creel ropes at sea, Achnahaird Bay, Highland, Scotland on the 8th October 2014. The carcass was recovered to the CSIP/Scottish Marine Animal Stranding Scheme (SMASS) where it underwent a full post-mortem examination. Cause of

death was given as drowning as a result of entanglement, (pending lab results).

T2014/039 was a Kemp's ridley examined at RSPCA Stapeley Grange Wildlife Centre, samples are awaiting collection to ZSL.

Kemp's ridley turtles, **T2011/051**, **T2011/053** stored frozen at ZSL were examined. Unfortunately T2011/051 was moderate to advanced decomposition and T2011/053 was moderate decomposition, as a result, a cause of death could not be established but both were highly likely to be as a result of cold-stunning. Both turtles were scanned for PIT tags following the BP Deep Water Horizon oil spill but no tags were detected.



Plate 7. *Jellyfish eye view of T2014/034.*

Photo by: CSIP/SMASS.

T2012/001 is still held frozen awaiting examination at ZSL.

9. DATA SHARING.

The TURTLE database was uploaded to the National Biodiversity Network (NBN) <http://www.nbn.org.uk/> to include the 2013 data.

10. UNUSUAL OCCURENCES.

A cold stunning event took place along the eastern seaboard of the USA affecting large numbers of Kemp's ridley turtles through November-December 2014.

<http://www.nbcnews.com/nightly-news/mysterious-illness-sickening-sea-turtles-n272851>

It was likely the Kemp's ridleys stranding in the UK/RoI during December were Kemp's ridleys that never fully recovered and were swept across the Atlantic in strong currents.

11. PUBLICITY.

The Strandings Web-site has been maintained to provide details of the CSIP. Although this is intended primarily for Wales, key contact details are given for England, Scotland and Ireland. The pages can be viewed at www.strandings.com/

Annual reports and other turtle related publications are available at www.strandings.com/

Posters and leaflets produced to increase awareness of the project have continued to be distributed.

Marine turtle records are posted on the National Biodiversity Network (NBN) Gateway and these can be accessed at <http://www.searchnbn.net/> The NBN is now the preferred outlet for the TURTLE database and the database on the strandings.com web-site is no longer maintained.

An updated UK Turtle Code was produced by MCS in 2011 funded by Natural England and the Scottish Natural Heritage <http://www.mcsuk.org/downloads/wildlife/turtlecode.pdf> a copy is also attached as Appendix 2.

12. TAGGING.

T2013/024 (Leona) was fitted with a UK series PIT tag in the front left shoulder and two external UK series front flipper tags.

Additionally, on arrival in Gran Canaria Leona was fitted with a satellite tag sponsored by Celestial Green Ventures, this should be able to transmit for approximately 8 months. The satellite track can be followed at <http://www.celestialgreenventures.com/leona-loggerhead-turtle>

13. ACKNOWLEDGEMENTS.

Marine Environmental Monitoring wishes to acknowledge the following;

Fiona Hunt, DMF International Limited [Dublin airport], Roger Hornsby, Harnwick Freight Services Ltd., Air Lingus, Galway Atlantaquaria, Rita Gately, Simon Berrow, Sarah Neill, Paul Sloan, Vicki Temple, Sara Shopland, Cornwall Wildlife Trust, Doug Herdson, Emer Rogan, IWDG, Marine Conservation Society, Medasset, Tom Doyle (Coastal and Marine Research Centre (CMRC)),

Scottish Natural Heritage, Natural England, National Parks & Wildlife Service and the Welsh Government for financial support towards the British Isles & Republic of Ireland TURTLE database.

14. APPENDICES.

- Appendix 1. 2014 TURTLE data.
- Appendix 2. UK Turtle Code.
- Appendix 3. Morphometrics.

Appendix 1.

	Species	Caught	Stranded	Alive/Dead	End Date	Country	County	Location	Notes
T2014/001	LBT	SEA	ALIVE	04/01/2014	SCOTLAND	OUTER HEBRIDES	Stornaway Harbour	Seemed OK swimming towards sea with falling tide	
T2014/002	KR	ST	DEAD	14/01/2014	WALES	CARMARTHENSHIRE	Pembrey Beach	Found by dog walker and beach cleaner. Collected by MEM. Held in freezer for PM.	
T2014/003	KR	ST	DEAD	28/01/2014	ENGLAND	DEVON	Woolacombe	Dead on beach. Frozen for collection by CSIP. 30 cms.	
T2014/004	LOG	ST	ALIVE	13/02/2014	WALES	PEMBROKESHIRE	Freshwater West	Found lethargic on beach, tide out. Taken to Bristol Aquarium by MEM next day. 10 ins overall length.. Named Stormy by MEM.	
T2014/005	KR	ST	DEAD	18/02/2014	ENGLAND	SUSSEX	Saltdan	Dead on beach. Article in Naturequest....	
T2014/006	LBT	ST	DEAD	12/05/2014	SCOTLAND	HIGHLAND	Borrodale beach, Arisaig	Just large LBT carapace.	
T2014/007	LBT	SEA	ALIVE	17/05/2014	ENGLAND	CORNWALL	1000m off Porth Curno, Penzance	Floating drifting W to E. Seen from 100m, then dived/ approx 2m long	
T2014/008	LBT	SEA	ALIVE	25/05/2014	ENGLAND	Hampshire	Southampton	Seen from land	
T2014/009	LBT	SEA	ALIVE	28/05/2014	WALES	CEREDIGION	Off Ynys Lochtyn	Swimming	
T2014/010	LBT	SEA	ALIVE	08/06/2014	WALES	CEREDIGION	Llangrannog	surfacing and diving, northerly direction. 40m off headland	
T2014/011	LBT	SEA	ALIVE	12/06/2014	ENGLAND	CORNWALL	1500 metres off Falmouth Bay	sighted from boat 200m from observer swimming fast at surface in SSW direction	
T2014/012	UNI	SEA	ALIVE	21/06/2014	ENGLAND	CORNWALL	2000 metres from headland near Porthmellin, near ST Anthony's lighthouse	4 metres from observer on boat, swimming due west and surfacing for air	
T2014/013	UNI	SEA	ALIVE	22/06/2014	ENGLAND	DEVON	near Noss Marina Dartmouth	Seen from fishing boat from 3 metres. Swimming out of the estuary about 1 mile inshore.	
T2014/014	LBT	SEA	ALIVE	24/07/2014	ENGLAND	KENT	between Walmer and Kingsdown	Seen from land approx 25 metres. Turtle was approx 15 metres off coast. Also seen by another separate individual but no further details.	
T2014/015	UNI	SEA	ALIVE	18/07/2014	EIRE	DUBLIN	off coast near Malahide Marina	seen from fishing boat, size of a chicken. Poss hardshell too small for LBT.	
T2014/016	UNI	SEA	ALIVE	08/08/2014	ENGLAND	DORSET	half mile west from Osmington Mills	Seen from land approx one hundred metres from shore moving left and right. Sea temp 18 degrees jellies been present.	
T2014/017	LBT	SEA	ALIVE	24/07/2014	SCOTLAND	HIGHLAND	1200 metres from headland, 0.75 nautical miles from Rubha Nan Clach.	Seen from boat, surfaced twice approx 6 feet long.	
T2014/018	LBT	SEA	ALIVE	26/08/2014	ENGLAND	CORNWALL	Housel Bay, Helston	Seen surfacing for air every 2-3 mins. High tide, seen from land 15m out from coastline.	
T2014/019	LBT	SEA	ALIVE	11/09/2014	SCOTLAND	Outer Hebrides	6 miles south east of St Kilda.	seen from boat on surface then dived. Large c. 2metres.	
T2014/020	LBT	SEA	DEAD	10/09/2014	ENGLAND	CUMBRIA	12.5 miles west of Duddon estuary Silecroft	Seen approx 10m from fishing boat.	
T2014/021	UNI	SEA	ALIVE	04/09/2014	ENGLAND	CORNWALL	20 metres off coast near Barras Nose, Tintagel	Seen from land 20 metres from headland. Poss feeding? Twice briefly splashed surface as if chasing something. Shoal of Garfish present!!!!. Possible seal??	
T2014/022	LBT	SEA	ALIVE	17/09/2014	ENGLAND	CUMBRIA	14km west of Walney Island	During survey by CMACS, photo taken.	
T2014/023	UNI	SEA	ALIVE	16/09/2014	ENGLAND	CORNWALL	30metres from bay near Barats Zawn, Port Issac	seen from anchored fishing boat/ Very small hardshell turtle. 5-6 ins across.	
T2014/024	LBT	SEA	ALIVE	31/08/2014	EIRE	CLARE	Bridges of Ross	Seen through scope from headland for 1 minute, carapace ridges clear.	
T2014/025	LBT	SEA	ALIVE	19/09/2014	WALES	Pembrokeshire	Newport	Seen 25m off beach for 20 mins basking in shallow sea till disturbed by boat. It retreated to 800m offshore and stayed for 45 mins	
T2014/026	LBT	SEA	ALIVE	02/09/2014	WALES	Pembrokeshire	Pwll Deri	Seen by 3 witnesses in evening, probably through bins.	
T2014/027	LBT	SEA	ALIVE	27/09/2014	ENGLAND	East Sussex	near Cuckmere Haven, Eastbourne See 029	Seen from kayak at approx 20 metres, 600m offshore swimming towards Eastbourne	
T2014/028	LBT	SEA	ALIVE	29/09/2014	ENGLAND	CUMBRIA	near Ormonde wind farm, Barrow-in-Furness	Seen from boat approx 100metres from observer. 6 miles out.	
T2014/029	LBT	SEA	ALIVE	27/09/2014	ENGLAND	East Sussex	near Cuckmere Haven, Eastbourne See 027	Seen from fishing boat at approx 10 metres, 1500m (3/4mile) offshore heading south in 50ft of water.	
T2014/030	UNI	ST	DEAD	27/08/2014	ENGLAND	CORNWALL	Nare Point	Beached presumably. Shell missing body rippled! And fleshy. Possibly leatherback. Length .9m.	
T2014/031	LBT	ST	DEAD	04/10/2014	SCOTLAND	HEBRIDES	Camusunary, Isle of Skye	Just dry leathery carcass. Still there on 13/10/14 14.00	
T2014/032	LBT	SEA	ALIVE	10/10/2014	WALES	Pembrokeshire	Strumble Head	Seen for 4 mins by birder	
T2014/033	LBT	ST	DEAD	10/10/2014	SCOTLAND	ARGYLL & BUTE	Erinagour Bay, Isle of Coll	1.7m 0.8m being held dead in harbour. Found floating dead and Brought in by fishermen. Collected for PM ???	
T2014/034	LBT	SEA	DEAD	24/10/2014	SCOTLAND	East Lothian	off Dunbar Harbour	Dead in creel rope 1 mile off Dunbar Harbour. Brought into harbour and photographed. Collected for PM.	
T2014/035	LBT	SEA	DEAD	08/10/2014	SCOTLAND	HIGHLAND	Achnahaird Bay	Dead in creel ropes. Brought ashore at Lochniver. Taken for PM by SMASS.	
T2014/036	LBT	ST	DEAD	28/10/2014	EIRE	MAYO	Portglash beach	Carapace and skeleton decomposing. 1.41 metres. Samples to MEM.	
T2014/037	LBT	ST	DEAD	02/11/2014	ENGLAND	CORNWALL	Par Beach	Carapace and skeleton decomposing.	
T2014/038	LBT	ST	DEAD	17/12/2014	ENGLAND	CORNWALL	Widemouth Bay, Bude	Floating in surf. Seen by diver/snorkler	
T2014/039	KR	ST	ALIVE	20/12/2014	ENGLAND	LANCASTER	Formby Point, Sefton.	Put back in sea, re-stranded. Taken to RSPCA Stapeley Grange, died Christmas Eve. Vet Sara Shoplund, pm.d by Sara Shoplund. Samples to be picked-up by Paul Jepson 28th Dec 2014.	
T2014/040	KR	ST	ALIVE	20/12/2014	ENGLAND	CUMBRIA	Walney Island	Taken to South Lakes Safari Park, given back to finder! Taken to Maryport Aquarium under vet Vicki Temple who took it home over Christmas.	
T2014/041	KR	ST	DEAD	24/12/2014	SCOTLAND	HIGHLAND	Tarbet beach, 4m north of Scourie	On beach, skeleton.	
T2014/042	LBT	ST	DEAD	03/10/2014	EIRE	WEXFORD	Whitehole beach, Tacumshin	mod/advanced decomposition/ 1.38m CCL	
T2014/043	LBT	ST	DEAD	16/10/2014	ENGLAND	ISLES OF SCILLY	Bryher	Head and flippers missing/scavenged. Decomposed and scavenged. Large slash in LHS shell	
T2014/044	UNI	SEA	ALIVE	14/07/2014	NORTHERN IRE	DOWN	Gibb's Island	Thought to be a Kemp's ridley. No further info.	
T2014/045	LBT	ST	DEAD	01/02/2014	EIRE	GALWAY	Barna	Decomposed carapace only	
T2014/046	LOG	ST	DEAD	15/01/2014	EIRE	GALWAY	Mweenish Island, Carna, Galway	Decomposed, some limbs missing.	
T2014/047	LBT	ST	DEAD	06/02/2014	EIRE	WICKLOW	Brittas Bay	Length 1.5 metres	
T2014/048	LBT	ST	DEAD	23/08/2014	EIRE	SLIGO	Streedagh Beach	Decomposed carapace and skeleton	
T2014/049	LBT	ST	DEAD	1/10/2014	EIRE	WEXFORD	Ballagh Burrow, Tomhaggard	.92m. Female.?!	
T2014/050	LBT	ST	DEAD	4/10/2014	EIRE	WEXFORD	Grogan Burrow, Tomhaggard	no notes	
T2014/051	LBT	ST	DEAD	24/10/2014	EIRE	GALWAY	Aillebrack, Ballyconneely.	Decomposed carapace 1.49 m	
T2014/052	KR	ST	DEAD	25/12/2014	EIRE	DONEGAL	Rossnowlagh	no notes	

As a sea user, you can help in the effort to protect endangered marine turtles by providing information about your encounters with these spectacular creatures in UK waters.

MARINE TURTLES ARE LEGALLY PROTECTED

There is no offence if turtles are caught accidentally in fishing gear. Nor is it an offence to help turtles if entangled or stranded, or temporarily to hold dead turtles for later examination by experts.

However, marine turtles are protected in Britain.

This means that:

- turtles may not be deliberately killed or caught
- live turtles may not be landed unless for the purpose of tending them or enabling their subsequent release
- dead turtles or shells obtained from turtles in UK waters may not be possessed unless the animal was lawfully acquired
- turtles and their derivatives may not be sold or offered for sale without UK government permission, unless they are antiques acquired before 1st June 1947 (with documented proof)
- turtles and their derivatives may not be imported or exported without UK government permission.

The following legislation pertains to marine turtles:

- Wildlife and Countryside Act 1981 (as amended), in England and Wales.
- Conservation of Habitats and Species Regulations 2010, in England and Wales.
- Conservation (Natural Habitats, &c.) Regulations 1994 as amended, in Scotland.
- Conservation (Natural Habitats etc.) (Amendment) Regulations (Northern Ireland) 2007.
- Control of Trade in Endangered Species (Enforcement) Regulations (1997) as amended, in the UK.
- Customs and Excise Management Act 1979.
- Isle of Man Wildlife Act 1990.

PLEASE REPORT ALL TURTLE ENCOUNTERS

ENGLAND/WALES

ALL RECORDS
Rod Penrose, Marine
Environmental Monitoring
01239 683033 (24hrs)
www.strandings.com

LIVE STRANDINGS/ ENTANGLEMENTS

RSPCA 0300 1234999
BDMLR 01825 765546

ISLE OF MAN

Dr Fiona Gell
DEFA - Isle of Man Government
01624 685835 (main)
Marine Operations Centre
01624 686628 (24hrs)

SCOTLAND

ALL RECORDS
Laura Clark, Marine
Monitoring Officer,
Scottish Natural Heritage
01463 725237

DEAD STRANDINGS

Nick Davison
Scotland's Rural
College (SRUC).
01463 243030/
07979245893

**LIVE STRANDINGS/
ENTANGLEMENTS**
SSPCA 03000 999999

NORTHERN IRELAND

ALL RECORDS
The Coastal Zone Centre
at Portrush (DOENI)
028 7082 3600

REPUBLIC OF IRELAND

ALL RECORDS
Dr Thomas Doyle
Coastal & Marine Research
Centre, University College
Cork
00353 (0) 21 4703119 (Direct)
00353 (0) 87 1354938 (24hrs)

Report online at: www.euroturtle.org/turtlecode & www.mcsuk.org

RECORD THE FOLLOWING DETAILS

All information is valuable, but the following details are particularly useful:

- A description** of the turtle (alive or dead), identification of species (at least to leatherback/hard-shelled level) and overall straight length. Note any damage (e.g. cuts, scars) and **take photographs** when possible.
- Location** (longitude & latitude/ OS grid reference), **date** and **time** of sighting.
- Other observations**, such as turtle's behaviour, whether caught in fishing gear (including exact nature of entanglement, gear involved) etc.
- Presence of tags**. Many conservation projects place plastic or metal tags on turtles' flippers, which display identification numbers and a return address. Record any tag details if this can be done without causing disturbance to the turtle.

Please report all dead turtles, even if they have to be discarded at sea. Records from diaries or logbooks, however old, are also of interest.

WHAT TO DO IF YOU FIND A SICK OR ENTANGLED TURTLE

Immediately report the turtle to the relevant contact. Marine turtles will drown if trapped underwater, but prompt action can save them. A turtle that is entangled or trapped is likely to be stressed. Large turtles deliver a serious bite and a blow from a flipper can be painful, so be careful. Due to possible health risks involved in handling turtles, always wear rubber gloves.

TURTLES ENTANGLED AT SEA

Approach calmly and cautiously and ensure first of all that the turtle's head is above water so that it can breathe if it is alive.

ALIVE: AVOID TOWING TURTLES TO SHORE. They should be disentangled and released at sea whenever possible.

If alert & active

- Do not use a gaff to pull the turtle alongside and do not haul leatherbacks aboard.
- Avoid pulling hard on the turtle's flippers as they may dislocate or break.
- Carefully disentangle the turtle, making sure that as much net and line as possible has been removed before the animal is released.
- Make sure that the vessel is stopped and out of gear before carefully sliding the turtle back into the water.
- Ensure that the turtle is clear of the vessel before moving away.

ONLY if disentanglement at sea is impossible should the turtle be brought ashore.

Tow leatherbacks very slowly and make sure the animal's head is above water so that it can breathe. Release leatherbacks in shallow water, not on land. Other species should be retained and reported.

If traumatised/inactive (no or slight movement, limbs flexible and limp, no decomposition)

Severely traumatised hard-shelled turtles can be saved if they are small enough to fit on your boat.

- Wrap the turtle in a towel soaked in seawater. Do not cover the nostrils.
- Place the animal in a sheltered and secure place on its belly. To drain the lungs, raise the back end of the shell so the turtle is resting at approximately 30°. Keep it in this position until you return to shore.
- Leatherbacks should **not** be hauled aboard. If inactive, they can be towed to shore very slowly, ensuring they are able to breathe at all times.

DEAD: There may be serious health risks involved in handling dead turtles. Inexperienced individuals are advised not to touch them. Where possible, record the details listed above and, only if the specimen is fresh, bring it back to shore and place in cold storage. Always wear rubber gloves when handling turtles.

TURTLES STRANDED ON LAND

Leatherback turtles

Leatherbacks found stranded on beaches are usually very weak, dead or dying, but might still be saved.

If apparently uninjured:

- Carefully drag the turtle back to the sea and release it (enlist the help of several people and pull the shell rather than the flippers).
- Do not drag the animal over rocks, as this will cause severe damage.
- If stranded on rocks, it may be better to wait for the incoming tide to provide some buoyancy before dragging the turtle back to sea.

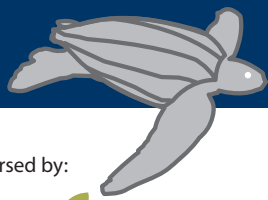
Other species (hard-shelled)

Loggerhead, Kemp's ridley, green and hawksbill turtles encountered on UK shores are usually cold stunned juveniles and should not be placed back in the sea.

- Wrap the turtle in a towel soaked in seawater, do not cover the nostrils
- Place the animal in a sheltered and secure place on its belly. If inactive, raise the back end of the shell so the turtle is resting at approximately 30° to drain the lungs. Report the turtle as soon as possible.

Dead turtles of all species are valuable for research and should be reported as soon as possible. Fresh specimens should be preserved in a cold store where possible. These animals will undergo a full post-mortem examination within the DEFRA-funded UK Cetacean Strandings Investigation Project (CSIP).

Marine Turtles in the UK



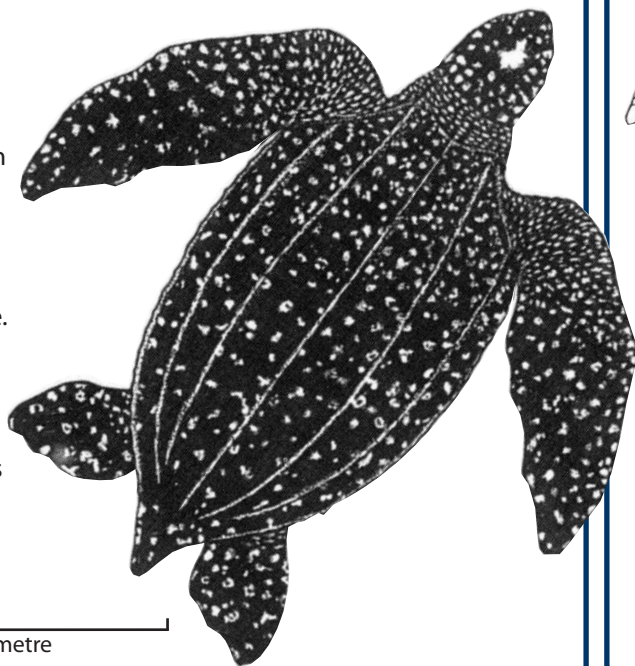
Endorsed by:



Of the world's seven marine turtle species, five have been recorded in UK waters. They are the leatherback, loggerhead, Kemp's ridley, green and hawksbill turtles. The leatherback, the largest marine turtle, is the species most frequently recorded in UK waters. Leatherbacks have a flexible, leathery shell and are unique among reptiles in that they are able to metabolically raise their body temperature above that of their immediate environment, allowing them to survive in colder waters. Each summer leatherbacks migrate to UK waters where they feed on jellyfish. The other four species have hard shells and are less frequently encountered in UK waters, where they usually occur as stray juveniles carried by currents from warmer seas.

LEATHERBACK TURTLE

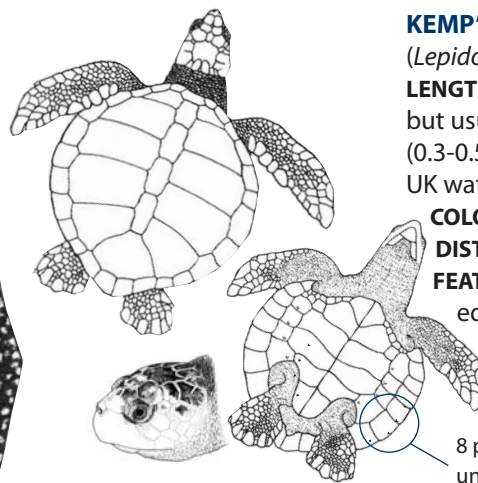
(Dermochelys coriacea)
Most frequently recorded species in UK waters.
LENGTH: up to 2.91 metres.
COLOUR: black, spotted with white.
DISTINCTIVE FEATURES: large, up to 916 kg, pronounced longitudinal ridges on shell, which tapers to a blunt spike.



SCALE 1 metre

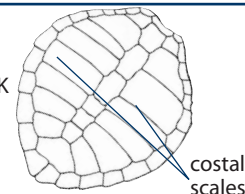
KEMP'S RIDLEY TURTLE

(Lepidochelys kempii)
LENGTH: up to 1 metre, but usually juveniles (0.3-0.5 metres) occur in UK waters.
COLOUR: grey/olive.
DISTINCTIVE FEATURES: shell width equal to or greater than shell length.



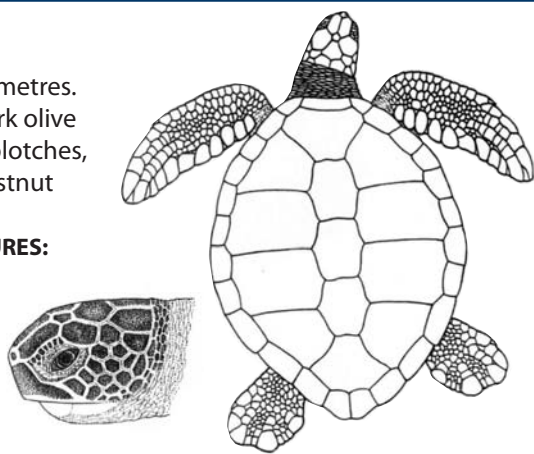
8 pores visible on underside (4 either side)

NB: The olive ridley turtle (*Lepidochelys olivacea*) occurs in the Atlantic, but has not been recorded in UK waters to date. Similar to Kemp's ridley with 8 pores on underside, but has 5-9 pairs of costal scales on shell.



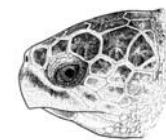
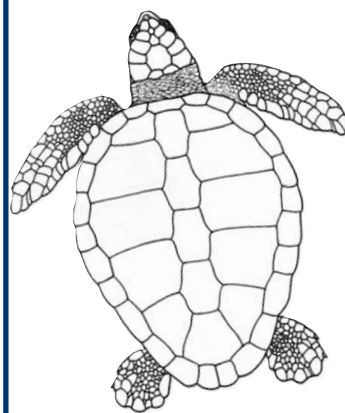
GREEN TURTLE

(Chelonia mydas)
LENGTH: up to 1.5 metres.
COLOUR: adults dark olive or grey with dark blotches, juveniles have chestnut coloured shell.
DISTINCTIVE FEATURES: smooth shell, rounded facial profile (not angular).



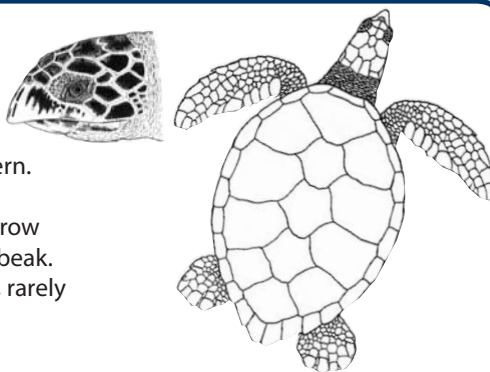
LOGGERHEAD TURTLE

(Caretta caretta)
LENGTH: adults up to 1.5 metres, but usually juveniles (0.3-0.5 metres) occur in UK waters.
COLOUR: reddish brown.
DISTINCTIVE FEATURES: large head, juveniles have small spikes along spine of shell.



HAWKBILL TURTLE

(Eretmochelys imbricata)
LENGTH: up to 1.2 metres.
COLOUR: brown, amber and black tortoiseshell pattern.
DISTINCTIVE FEATURES: shell scales overlapping, narrow tapered head with bird-like beak. Largely tropical distribution, rarely encountered in UK waters.



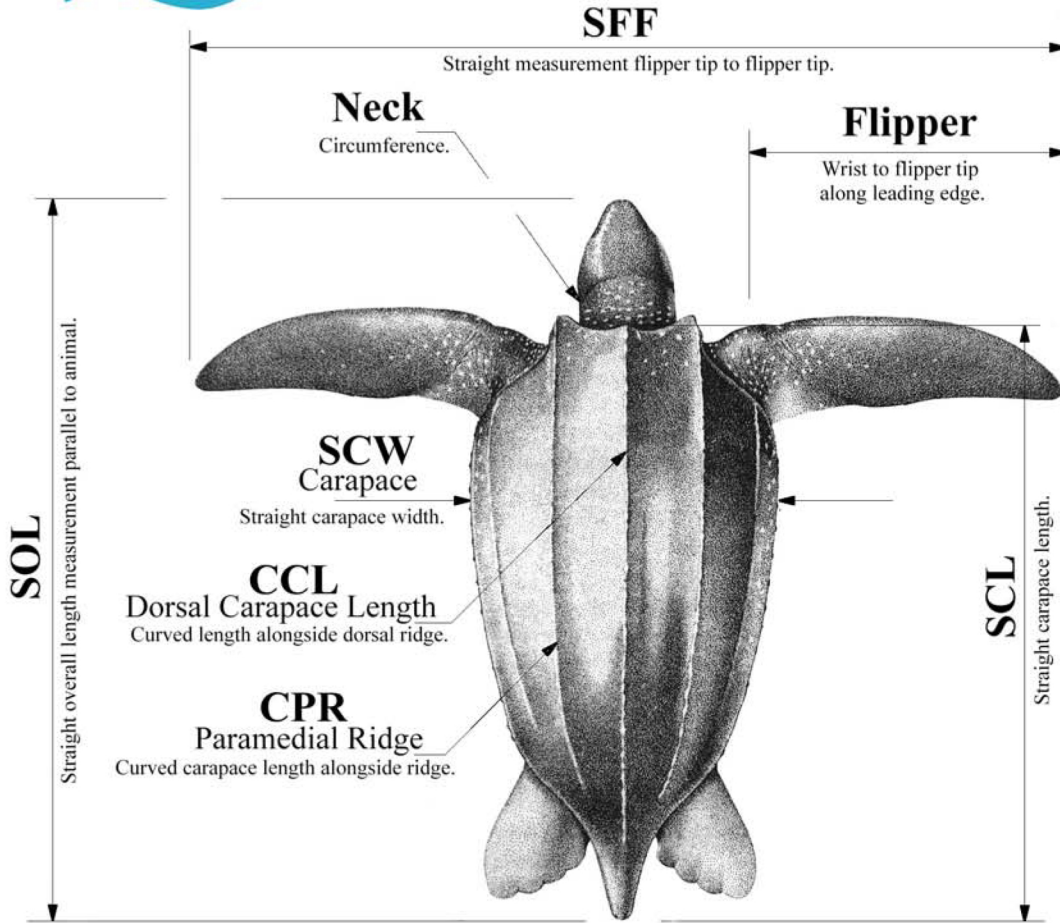
MARINE TURTLES ARE THREATENED

In UK waters threats include:

- **Accidental entanglement in fishing gear.** Although turtles can dive to great depths, they become stressed and drown when trapped underwater by fishing gear. Fishing gear discarded at sea may also entangle and kill turtles.
 - **Marine litter,** especially plastic, which turtles mistake for jellyfish. Once ingested, plastic can block a turtle's gut leading to starvation.
 - **Boat collisions.** Turtles often bask and must surface regularly to breathe, leaving them vulnerable to boat strike.
- PLEASE BE VIGILANT, AND DO NOT DISCARD FISHING GEAR OR LITTER AT SEA.**



Illustrations are taken, with permission, from: Eckert, K.L., K.A. Bjorndal, F.A. Abreu-Grobois, and M. Donnelly (Editors). 1999. *Research and Management Techniques for the Conservation of Sea Turtles*. IUCN/SSC Marine Turtle Specialist Group Publication No. 4. THIS DOCUMENT WAS PRODUCED BY THE MARINE CONSERVATION SOCIETY (MCS) IN 2011 WITH SUPPORT FROM NATURAL ENGLAND AND SCOTTISH NATURAL HERITAGE AND IN COLLABORATION WITH THE TURTLE IMPLEMENTATION GROUP OF THE UK MARINE TURTLES GROUPED SPECIES ACTION PLAN.



Other Measurements Required.

- COL** Curved Overall Length.
- CFF** Curved Flipper tip to Flipper tip over Animal.
- CCW** Curved Carapace Width.
- DMAX** Maximum Body Depth. (Straight).
- TTL** Total Tail Length from Plastron.
- PTL** From Centre of Cloacal Opening to end of Tail.
- WEIGHT** In Kilograms.
- SEX** If Known.

