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Leatherback turtle sightings in the Clyde Sea Area, Scotland in 2022

M. O'Reilly* & J. McKechnie

Scottish Environment Protection Agency, Angus Smith Building, 6 Parklands Avenue, Maxim Business Park, Eurocentral, Holytown, North Lanarkshire ML1 4WQ

*E-mail: myles.oreilly@sepa.org.uk

The leatherback sea turtle (*Dermochelys coriacea*) is by far the largest turtle species, with adults typically from 1.8-2.9 m in length and weighing between 250-700 kg. They are also unique among sea turtles for having a leathery rather than bony shell. They are widely distributed in the world's oceans with the Atlantic population being found regularly as far south as the Cape of Good Hope, South Africa and as far north as Newfoundland, Canada. Breeding is, however, restricted to shores in tropical seas. They are capable of diving for up to 1.5 h and as deep as 1.2 km.

Leatherback sea turtles are able to generate and retain heat from the activity of their muscles, allowing them to have a body temperature above that of the surrounding water, which enables them to tolerate colder deep waters and to travel into cooler northerly waters (Lovich & Gibbons, 2021). In summer months they visit the west coasts of Britain and Ireland in search of their jellyfish prey and their wanderings may bring them further north to Norway and even north of the Arctic circle (Willgoos, 1957).

The occurrence of marine turtles in Scottish waters was reviewed by McInerny & Minting (2016). There were 350 records then known of turtles in Scottish waters: 250 leatherbacks, 50 loggerheads (*Caretta caretta*), nine Kemp's ridley (*Lepidochelys kempii*), four green turtles (*Chelonia mydas*), and about 80 turtles unassigned to species. Only adult leatherbacks (length 1.8–2.9 m) appear to visit Scottish waters. Most leatherback sightings are between June and October and are live animals, although some die following entanglement in fishing gear. Sightings or strandings of leatherback turtles in Scottish waters have often been newsworthy (Sutcliffe, 1981, 1983; Simpson, 1984). Even before the days of the internet and social media, the landing of a large leatherback could draw numerous sightseers, as was the case for one brought ashore at Ness, in the Western Isles, in 1987 (Anon., 1988).

As a regular visitor to Scottish waters, the leatherback turtle should be regarded as a *bona fide* member of our marine fauna. Leatherbacks arriving in Scottish or Irish waters may be accompanied by exotic fish, such as pilot

fish (*Naucrates ductor*) or remora fish (*Echeneis naucrates*) and may also host unusual species of barnacles or crabs (O'Reilly *et al.*, 2022).

The largest leatherback so far recorded in the U.K. was found stranded on Harlech beach, Wales, in 1988. It measured almost 3 m and weighed 914 kg and is now displayed at the National Museum of Wales (Hanley *et al.*, 2013). It is perhaps understandable that some previous turtle sightings of leatherbacks in Scottish waters and elsewhere have been mistaken for mythical beasts (Brongersma, 1968a-c).

A database of all turtles ever recorded from the U.K. and Eire was established by Pierpont & Penrose (2002) and information on turtle strandings and live sightings since 2001 has been collated in annual reports produced by Marine Environmental Monitoring (MEM) (www.strandings.com). A long-term analysis of the occurrences of marine turtles around the coasts of Britain and Ireland was provided by Botterell *et al.* (2020).

A total of 286 leatherbacks has now been recorded all around the coasts of Scotland, though they appear to be more frequent on the western coasts (NBN, 2022). Details of some early records from the Clyde Sea Area were given by Sutcliffe (1981) and Gibson (1990), including the famous leatherback captured in Kilbrannan Sound in 1959 and transported to Calderpark Zoo, Glasgow. There are now about 20 records of leatherbacks in the Clyde Sea Area (NBN, 2022), including several records from Loch Fyne and, in 1989, one sighting in Loch Goil, a side-arm of Loch Long.

The first report of a leatherback turtle in the Clyde Sea Area in 2022 was on 17th July at Cairndow, near the head of Loch Fyne (NN1846911440). Just a few days later on 21st July, a leatherback was spotted again near Cairndow but just a little further south (NN1807911235). Just over a week later on 29th July, a leatherback was spotted at the head of Loch Striven (NS0536183674) by angler Mike Lindop. The turtle was not more than 20 m offshore and appeared to be feeding on jellyfish. A couple of photographs were taken (Figs. 1 and 2).

The first observation of a leatherback in Loch Long in 2022 was on the 8th September by Hazel McDonald who observed the turtle from a boat near Morelaggan (NN2752301883) about 2.5 km south-west from Arrochar. The turtle came up to breathe for about 10-15 s then dived. It was quite loud and when it put its head down three distinct ridges could be seen on its back.

On the 11th September, the Long Long Jetty Association (LLJA) posted a video clip of a large marine turtle seen that morning at the jetty in Arrochar



Fig. 1. Leatherback turtle (*Dermochelys coriacea*) in Loch Striven, Scotland, July 2022. (Photo: Mike Lindop)



Fig. 2. Leatherback turtle (*Dermochelys coriacea*) in Loch Striven, Scotland, July 2022. (Photo: Mike Lindop)

(NN29450362) (for link to the video, see LLJA (2022)). The sea state was flat and calm and the video shows the turtle swimming toward the viewer just beneath the water surface before turning shore-wards in a half circle and heading off parallel to the shore in a southerly direction. At closest approach the turtle was only about 5-6 m away and the proximity of the rocks and seaweed on the shore allows the viewer to gauge its length as about 2 m confirming, based on this large size, that it was a leatherback.

On the afternoon of the same day the turtle was also seen nearby by Calum McIlwraith who was fishing with friends from the rocks at the Loch Long caves (NN2784902073), just over 2 km south-west from Arrochar. He provided this account: “The loch was very flat and calm and it was very overcast and raining fairly heavily. The turtle surfaced about ten feet away from us when the tide was still relatively high around 3:30 p.m. Initially we thought it was the seal that chases our mackerel although we got such a fright when we realised it was easily double the size of a seal and had a ridged back. It then pushed back into the water with flippers

that must have been 3 ft. each and disappeared for around 5-10 minutes. It then resurfaced further out on the loch and I managed to get a video clip although you can only just make out its head. The turtle just seemed to be swimming and breaching whilst taking breaths”. The video can be viewed at <https://www.youtube.com/shorts/1HA4vPi6bac>.

As news of the turtle sightings spread on social media a further posting suggested that an angler had inadvertently snagged a hook on the turtle and the British Divers Marine Life Rescue (BDMLR) organisation were alerted. The story of the initial turtle sighting and the video clip from the Arrochar jetty appeared in the press a few days later (Anon., 2022a,b; Fitzpatrick, 2022 (which includes a link to the original video)). There were further sightings at Arrochar, reported to BDMLR, on 17th and 18th September. With the turtle so far up at the head of the loch, there was some concern it may become trapped there, as had three bottlenose whales (*Hyperoodon ampullatus*) near Garelochhead in 2020 (O'Reilly & Payne, 2021). However, there still appeared to be many jellyfish at Arrochar for the turtle to feed on and there was no indication that it was injured or was in any difficulty. Sightings continued around Arrochar over the next few days.

On 27th September, at around 12.40 p.m., James Gilchrist was recovering a boat across the loch at Ardgartan (NN2768102985) when he spotted the turtle about 100 m offshore. The weather was slightly overcast with a light breeze and so the sea state was calm. A video clip was taken, on a phone camera, looking north from Ardgartan before swinging round looking directly east across the loch. However, the turtle is clearly seen for only around 10 s bobbing on the surface. The head and back were visible and it seemed to be mouthing at something. The video clip can be viewed at <https://youtu.be/XuzrKQAMsGs>.

On the same date, while paddle boarding south west of Arrochar, Gemma Varley, a BDMLR volunteer, sighted the leatherback at 5.30 p.m. approximately 250 m north of Ardmay House Outdoor Centre (NN2826302779); the sighting lasted for approximately 25 min. The turtle was observed travelling east and west across the loch before heading south. The head and back clearly visible, it was observed diving and resurfacing several times.

There were several more sightings reported in the Arrochar area around 28th September and an image was captured by David Devoy, a BDMLR volunteer and keen paddle boarder. The photo from the shore is looking south-west towards the promontory at Ardmay House (NN28250280). The image clearly shows the turtle's head and ridged back (Fig. 3).

There was a further sighting by local fishermen on September 29th. On the morning of 30th September BDMLR dispatched three volunteers in response to a call from the Scottish Society for Prevention of Cruelty to Animals (SSPCA) which had received a report from



Fig. 3. Leatherback turtle (*Dermochelys coriacea*) near Ardmay House, Loch Long, Scotland, September 2022. (Photo: David Devoy)

a member of the public of a leatherback in distress in shallow waters below Ben Arthur Bothy in Arrochar (NN2982304482). A search in the reported locality within an hour of the call was followed by a more extensive evening walk of the shore and by paddle board which both revealed nothing. However, later discussions with some local fishermen and tourists established that the leatherback had been seen free swimming near Arrochar mid to late afternoon showing no signs of distress.

The next sighting in the area was on 10th October at Arrochar. There were no subsequent reports of turtles, either alive or dead, within Loch Long or the Clyde Sea Area in 2022. It is therefore assumed that the turtle safely left the area.

The most recent previous sighting of a leatherback in the Clyde Sea Area was at Loch Gilp in August 2006. The 2022 leatherback sightings described here are the first from Loch Striven and Loch Long. With leatherback sightings in 2022 in three different Clyde sea-lochs, it is unclear whether only one, or more than one, turtle was being observed. It is quite probable that the records in Loch Fyne and in Loch Striven around a week later are the same turtle and it is even plausible that the sightings just over a month later in Loch Long may also be the same individual. Although leatherbacks have unique skin mottling patterns which might allow individuals to be recognised, it is very difficult to photograph these in the field unless the turtles are captured.

The prevalence of social media has helped alert anglers, recreational water-users and other sea-farers to turtles visiting our shores and it is hoped that others will be lucky enough to catch a glimpse of these fascinating creatures.

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