

Marine sightings of grass snakes *Natrix natrix*

JOHN M. R. BAKER

Amphibian and Reptile Recorder for Suffolk

Email: johninhalesworth@aol.com

The grass snake *Natrix natrix* frequents fresh water in search of prey (amphibians and fish) but there is also a long history of accounts of this species in sea water, although it is unclear whether such incidents resulted from accidental or active entry (Del Canto & Busack, 2011). In an early natural history volume Wood (1863) wrote 'This reptile will even take to the sea, and has been noticed swimming between Wales and Anglesea'. One of the earliest published first-hand observations was made by Böse (1897) who captured a grass snake approximately 1 km from land in Flensburg Fjord, Denmark, and reported that grass snakes were known to travel 3-4 km (1.9-2.5 miles) across sea water. Guérin-Ganivet (1909) reported a grass snake found swimming between the Îles de Glénan and the French mainland, about six miles (10 km) from the coast, or four miles (6 km) from the Île de Penfret. This may be the origin of the later account in Smith (1951) of a grass snake captured in the Bay of Biscay (the Îles de Glénan lie in the Bay of Biscay).

Boulenger (1913) also wrote that grass snakes were sometimes found in the sea and gave an example of one 25 miles (40 km) from land but with no specific details of location. Hecht (1930) catalogued several sightings of grass snakes in waters off the coasts of Denmark, Germany, Norway and Sweden from literature dating from 1873 to 1918. The furthest from land was approximately 25 nautical miles (29 miles/46 km). The coincidence of 25 (nautical miles) and 25 (miles) in Boulenger's text raises the possibility that these accounts stemmed from the same observation, albeit with inconsistent units of distance.

A more recent sighting was reported on the online forum Reptiles and Amphibians of the UK (RAUK) (www.herpetofauna.co.uk) in 2012; a grass snake was photographed off the Pembrokeshire coast of Wales, swimming between the mainland and an offshore island. The RAUK forum also includes two observations of unidentified snakes swimming off the eastern coast of Norfolk. These could be either grass snakes or adders. A more specific sighting, on the same forum, reported by the late Peter Stafford, relays a colleague's account of a young grass snake moving across the beach, towards (but not entering) the sea, at Minsmere, Suffolk, in the summer of 2005.

Suffolk appears to be a hotspot for grass snakes either in the sea or on the beach. Information held by Suffolk Biological Records Centre includes a juvenile grass snake seen on the beach at Minsmere, heading for the dunes, in June

2003, and a grass snake seen swimming in the sea and coming ashore at Fort Green, Aldeburgh, in July 2007. A description fitting that of a grass snake moving along the water's edge on a shingle beach, then swimming out to sea at Dunwich in September 2007 was sent to New Scientist magazine's The Last Word question and answer column (Parker, 2008). This prompted several comments including one from John Annis, who reported that 'it was not unusual to see grass snakes by the sea's edge' along the Suffolk coast 55 years previously (i.e. the 1950s), and a more specific, but anonymous, observation of a young grass snake entering the water from Dunwich Beach and swimming out to sea in July 2008.

Two further sightings have been reported to Suffolk Wildlife Trust (Baker & Simnett, 2013). In June 2010 Sue Thompson saw a grass snake at Sizewell crossing the shingle and swimming out to sea and in September 2013 Eve Simnett photographed a grass snake swimming about two metres from the shore at Walberswick harbour before making landfall on the sea defences.

In three of the eight aforementioned cases from Suffolk grass snakes were seen actually entering the water, showing that, sometimes at least, they actively enter the sea rather than being transported by some other means (for example stowing away on a boat, or being dropped by a bird during a predation attempt, or being carried out to sea by flooding). Grass snakes are relatively mobile reptiles so entering the sea may be a consequence of their natural wandering behaviour. Swimming in sea water, however, is presumably hazardous, risking predation and, eventually, dehydration. Nevertheless, marine dispersal may enable grass snakes to colonise offshore islands and maintain population exchange between these and the mainland.

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