16 & 17. Short-snouted (*Hippocampus hippocampus*) & Spiny (*H. guttulatus*) seahorse

Irish names: Capall mara soc gearr and Capall mara deilgneach

Figure A10.16&17.1. Left: Short-snouted seahorse, *Hippocampus hippocampus*, on knotted wrack. By © Hans Hillewaert, CC BY-SA 4.0, Right: Spiny seahorse, *Hippocampus guttulatus*. Photo © Neil Garrick-Maidment.

Background

While the true distribution of seahorses in Irish waters is uncertain, following a precautionary approach and advice from experts, both the short-snouted (*H. hippocampus*) and spiny seahorse (*H. guttulatus*, often called 'long-snouted seahorse') are considered potentially present in Irish waters. There is limited published research on the ecology of these two species. Therefore, the life history characteristics referred to in this case study are mainly based on review articles on the biology of seahorses (Vincent, 1996; Garrick-Maidment, 1997; Lourie et al., 1999; Garrick-Maidment & Jones, 2004).

Both the short-snouted and spiny seahorse have an extensive geographical range across predominantly subtidal meadows of seagrass and sand and mud substrate, particularly during the speculated summer breeding season (Dowling, 2022). Short-snouted seahorses typically occupy sheltered habitats at depths of 1-15 m and are most commonly observed in waters <5 m (Sabatiniet al., 2021). It is thought that their depth distribution is likely a result of available habitat and varies throughout their range (Sabatini et al., 2021). A study in the Arcachon Basin in France suggested that adults migrate to deeper waters in winter (Boisseau, 1967). Short-snouted seahorses grow up to 15 cm (Dawson, 1986) and mature at

6-12 months old (Lourie et al., 1999). The exact breeding season has not yet been determined but is thought to occur between April and November (Lourie et al., 1999; Garrick-Maidment & Jones, 2004). In contrast, the spiny seahorse (*H. guttulatus*) measures between 12-15 cm (Curtis & Vincent, 2006) and is distinguished by its long snout, dark green, brown or yellow colouration, and is often covered in long spines and white dots (Neish, 2007). Seahorses are ovoviviparous, with females depositing eggs into the male brood pouch. Gestation lasts 20-21 days (Garrick-Maidment, 1997), with 50-250 young produced (Garrick-Maidmen, 1997; Sabatini et al., 2021). Newly hatched young are thought to have a plankton dispersal stage that lasts >8 weeks (Boisseau, 1967). The extent of this dispersal has not yet been described.

The short-snouted seahorse is primarily an eastern Atlantic species, occurring from the Wadden Sea to the Gulf of Guinea, the Canary Islands, along the African coast of Guinea, and in the Mediterranean (OSPAR Commission, 2009). According to Neish (2007), the global distribution ranges from, “the Netherlands, along the east Atlantic coast of Europe south to Morocco and Senegal, and from Italy, Malta, Croatia, Greece and Cyprus in the Mediterranean” and includes, “the south coast of England and south west coasts of Wales”. Irish waters are on the periphery of the western range of both these species (Dowling, 2022), and are on the end of their temperature range (K. Doyle, *pers. comm.* 6th March 2024). All of the confirmed records to date are of the spiny seahorse (*H. guttulatus)*, with seven records in the Celtic Seas focal area (Quigley, *unpublished*) from c. 1834-2001 in Co. Waterford (recorded in 1915), and Co. Cork (Youghal, 1834; Knockadoon, c. 1980; Loch Hyne, c. 1989; Castletownbere, 2001). While no confirmed records are available for the short-snouted seahorse, this may be due to a lack of concentrated survey effort. For example, previously short-snouted seahorses were regarded as very rare in Northern Europe but in recent decades they are more frequently recorded in UK waters (Quigley, 2009) with over 600 records identified by thousands of volunteer surveys since The Seahorse Trust began surveys along the UK coastline in 2009 (Garrick-Maidment et al., 2010). Both species have very small estimated home ranges of 19-400 m^2 (Garrick-Maidment et al., 2010) and high site fidelity (Curtis & Vincent, 2006; OSPAR, 2009). Seahorses are in global decline owing to habitat loss, pollution, climate change and the illegal wildlife trade and use in medicines (Dowling, 2022).

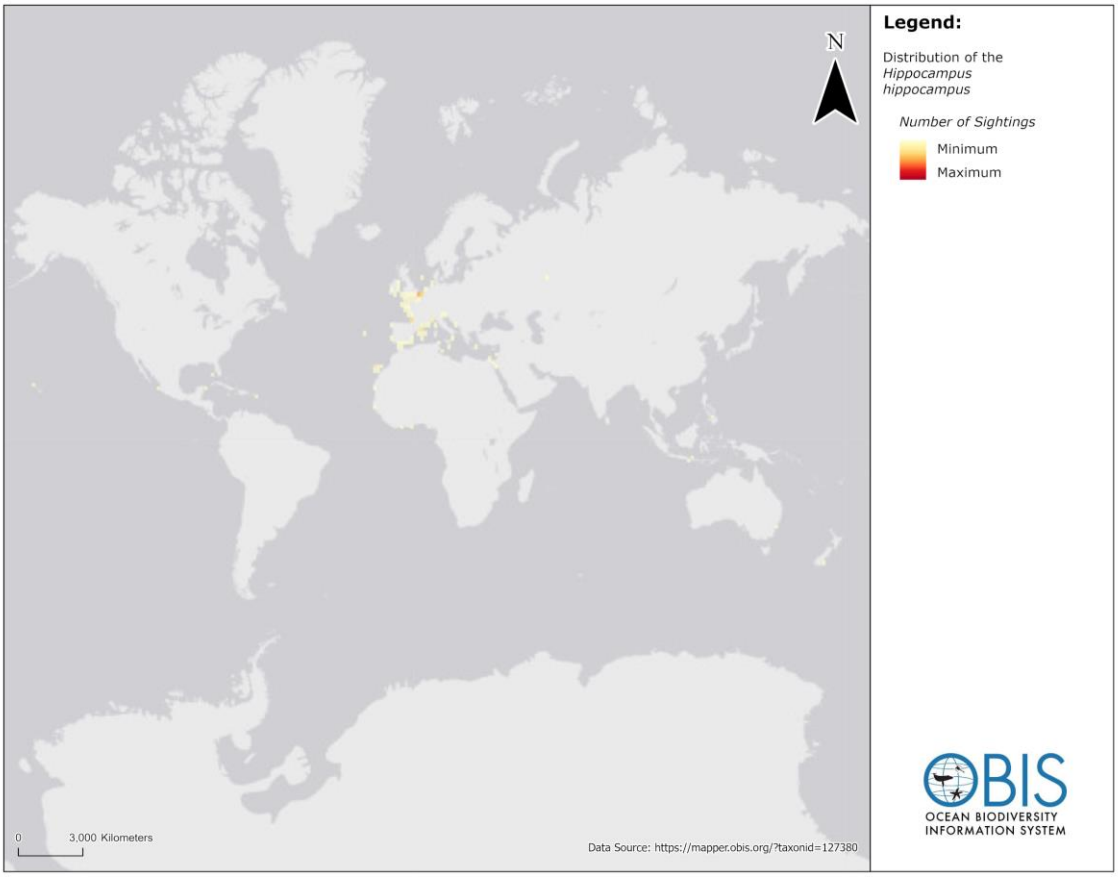

Figure A10.16&17.2. Global geographic distribution of the short snouted seahorse (*Hippocampus hippocampus*). Source: https://mapper.obis.org/?taxonid=127380. Retrieved 2nd April 2024.

Rationale for spatial protection in the Celtic Sea

Both the short-snouted and spiny seahorses were nominated for inclusion with particular reference to their conservation listing under OSPAR. OSPAR considers both species regionally and globally important, highly sensitive, and potentially in decline (OSPAR, 2009). Both species are classed as Data Deficient by the IUCN Red List (spiny, Pollom 2017; short-snouted, Woodall, 2017).

Based on a precautionary approach, both species are potentially found in Irish waters. The population size in the southern Celtic Sea is currently not quantified; at present there are only five confirmed records in the southern Celtic Sea. Following a precautionary approach, spatial protection could be advisable if their distribution can be determined.

Short-snouted seahorses are likely amenable to spatial protection. Species-specific life history characteristics are poorly defined for this species. Both species have very small

estimated home ranges (Garrick-Maidment et al., 2010) and high site fidelity (Curtis & Vincent, 2006; OSPAR 2009).

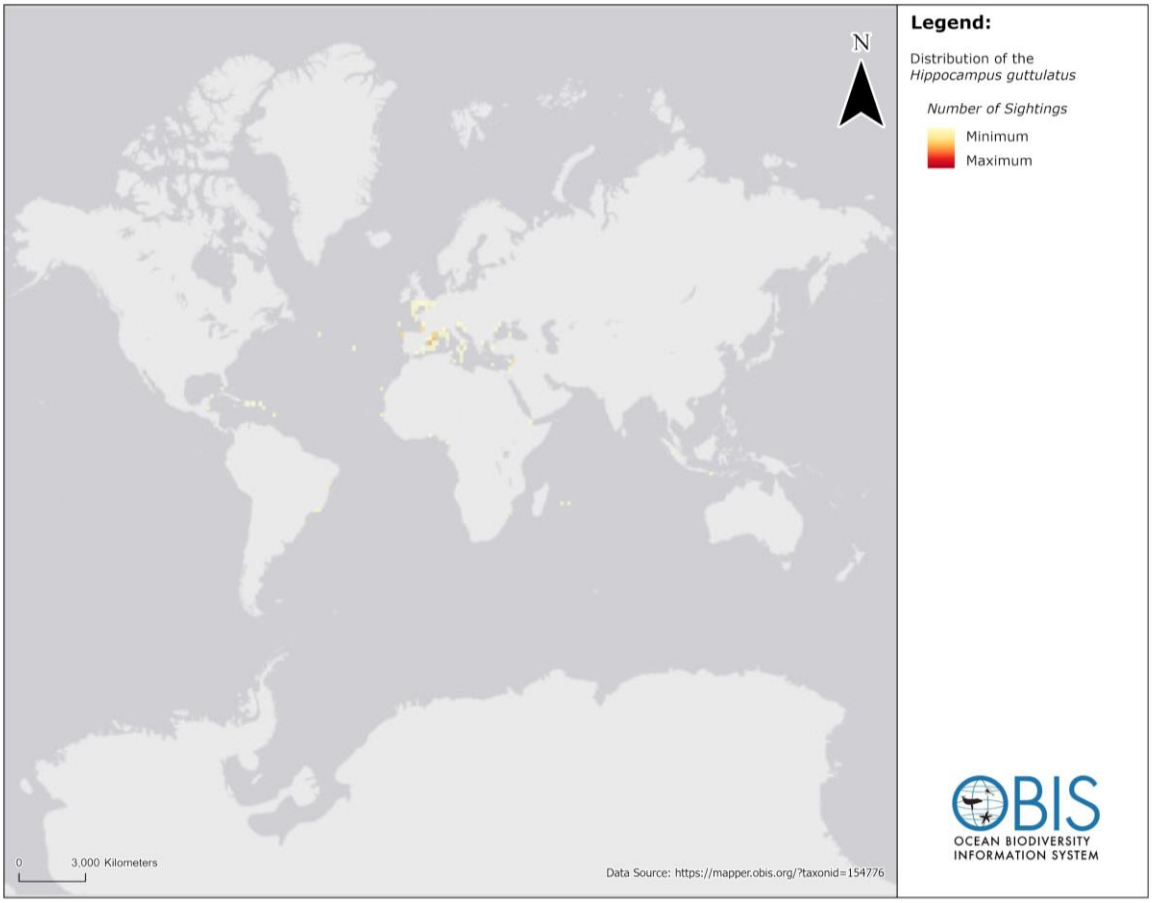

Figure A10.16&17.3. Global geographic distribution of the spiny seahorse (*Hippocampus guttulatus*). Source: https://mapper.obis.org/?taxonid=154776. Retrieved 2nd April 2024.

Sensitivity assessment

This assessment matches that provided in the 2023 Western Irish Sea sensitivity report, and the 2021 short-snouted seahorse MaRLIN assessment.

Short-snouted seahorses are moderately sensitive to several fishing-associated pressures (low confidence). This species is moderately sensitive to fishing gears associated with abrasion/disturbance of the substratum surface or seabed (medium confidence) and highly sensitive to penetration or disturbance of the substratum subsurface (medium confidence). Short-snouted seahorses were deemed moderately sensitive to the introduction or spread of invasive non-indigenous species (low confidence), targeted removal (medium confidence) and accidental removal (medium confidence). Seahorses are globally exploited for use as medicines, aquarium fisheries, food and curios (Sabatini et al.,

2021). There is no documented targeted removal in the southern Celtic Sea. However, it is assumed that there is potential for accidental bycatch of the species by trawling gear.

Shipping-associated pressures were deemed not applicable or resulting in a low perceived sensitivity (low confidence). Underwater noise related to short-term constant motor noise was identified to cause increased opercular movements and an increased likelihood of spiny seahorse abandoning their hold fasts (Palma et al., 2019). Its associated resistance was scored as medium by MaRLIN owing to possible effects on reduced recruitment and increased predation risk (Sabatini et al., 2021); its resilience was scored as high since noise is not thought to cause direct mortality.

Short-snouted seahorses are moderately and highly sensitive to several pressures associated with offshore wind farms. All marine habitats and benthic species are considered to have no resistance to physical loss of habitat to land or freshwater habitat and are unable to recover (low resilience) (Sabatini et al., 2021). As previously mentioned, seahorses are moderately sensitive to abrasion, penetration or disturbance of the substratum surface and seabed, which are all pressures associated with the wind farm construction phase.

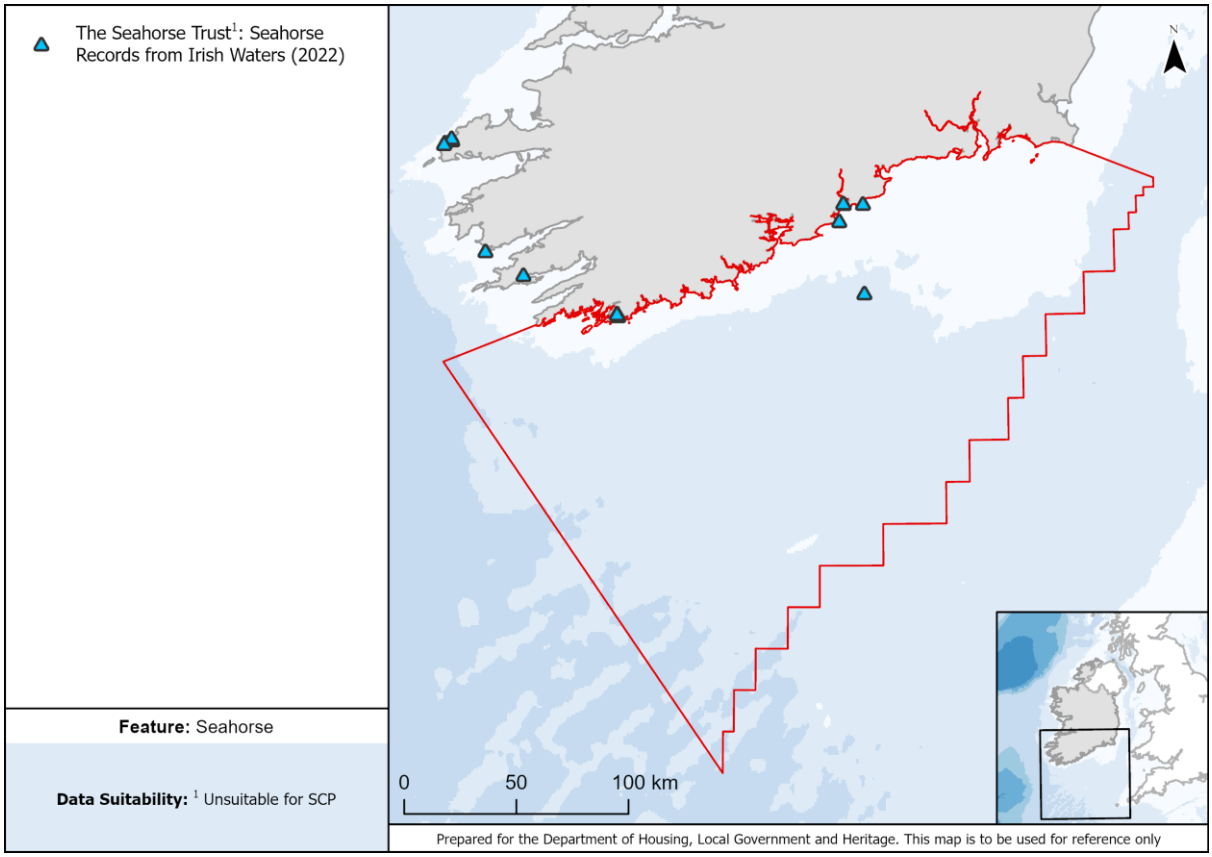

Figure A10.16&17.4. Data available for the spiny seahorse (*Hippocampus guttulatus*) in the Celtic Sea.

Data sources available

Few data are available for these species (Figure A10.16&17.4) and concerted effort is required to generate data so that spatial protection can be fully considered and implemented. For explanation of data suitability, refer to Table 3.2.1 Main Report. Data were not considered suitable for inclusion in prioritization analyses: data were too sparse.

Further research needs

Key knowledge of the distribution and population size in the southern Celtic Sea is essential. Knowledge of the life history characteristics of this species is currently limited and requires further investigation.

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