

19. Ross Worm Reefs *Sabellaria spinulosa*



Figure 1: Ross worm, *Sabellaria spinulosa* © Joint Nature Conservation Committee (JNCC)

Background

Sabellaria spinulosa is a small, tube-building polychaete worm found in the subtidal and lower intertidal/sublittoral fringe. In most parts of its geographic range, it does not form reefs but is solitary or found in small groups, encrusting pebbles, shell, kelp holdfasts and bedrock. When conditions are favourable dense aggregations may be found, forming reefs up to about 60cms high and extending over several hectares; these are often raised above the surrounding seabed. The reef infauna typically comprises polychaete species such as *Protodorvillea kefersteini*, *Scoloplos armiger*, *Harmothoe* spp., *Mediomastus fragilis*, *Lanice conchilega* and cirratulids together with the bivalves *Abra alba* and *Nucula* spp. and tube-building amphipods such as *Ampelisca* spp. Epifauna comprise calcareous tubeworms, pycnogonids, hermit crabs, amphipods, hydroids, bryozoans, sponges, and ascidians (OSPAR Commission, 2008).

Rationale for spatial protection in the western Irish Sea

Sabellaria spinulosa reefs are listed by OSPAR with reference to its sensitivity, rarity, ecological significance, and decline. The reefs provide biogenic habitat and are host to a wide range of associated species. This biotope is not currently protected or conserved in the western Irish Sea but is amenable to spatial protection.

Sensitivity assessment

Sabellaria spinulosa reefs are moderately and highly sensitive to pressures associated with the construction and operation of offshore wind farms (low confidence). All marine habitats and benthic species are considered to have a resistance of 'None' to physical loss (to land or freshwater habitat) and to be unable to recover from a permanent loss of habitat (resilience is 'very low') (Tyler-Walters et al., 2018). This habitat was assessed as moderately

sensitive to removal of substratum (high confidence). The removal of sediment or substratum down to 30 cm depth is likely to remove the whole *Sabellaria spinulosa* reef within the extraction footprint. Therefore, resistance to this pressure is assessed as ‘none’. However, if suitable substrata were to remain, recruitment rates are high and recovery could be quite rapid, therefore resilience is considered to be ‘medium’ (Tillin et al., 2022).

***Sabellaria spinulosa* reefs have a high sensitivity to bottom trawling and dredging/beam trawling and a medium sensitivity to pelagic and static gear fishing (low confidence).**

The reef is highly sensitive to the physical change to another sediment type (low confidence). Where the reef occurs on mixed sediments an increase in fine sediments to the degree that sediments are re-classified as mud or sandy mud would severely reduce habitat suitability. Sensitivity to abrasion (low confidence) and penetration (medium confidence) of the substratum were assessed as medium for this habitat. Abrasion at the surface of *Sabellaria spinulosa* reefs is considered likely to damage the tubes and result in sub-lethal and lethal damage to the worms while structural damage to the seabed sub-surface is likely to damage and break-up tube aggregations leading to the loss of reef within the footprint of direct impact. However, depending on the level of impact recovery is likely to be quick (Tillin et al., 2022).

***Sabellaria spinulosa* has been scored as not sensitive to shipping related activities (low confidence).** However, a number of pressures associated with the shipping sector have not been assessed for this reef habitat. Further research could determine this habitat as sensitive to shipping activities.

Further research needs

There is insufficient evidence on the effects of chemical pressures on *S. sabellaria* reefs. These include transition elements & organo-metal contamination, hydrocarbon & PAH contamination, synthetic compound contamination, introduction of other substances and deoxygenation. As previously mentioned, further research could determine this reef habitat sensitive to shipping activities as well as increase the sensitivity to pelagic and static fishing gear.



Figure 2. Global distribution of *Sabellaria spinulosa*, Source: <https://mapper.obis.org/?taxonid=130867>

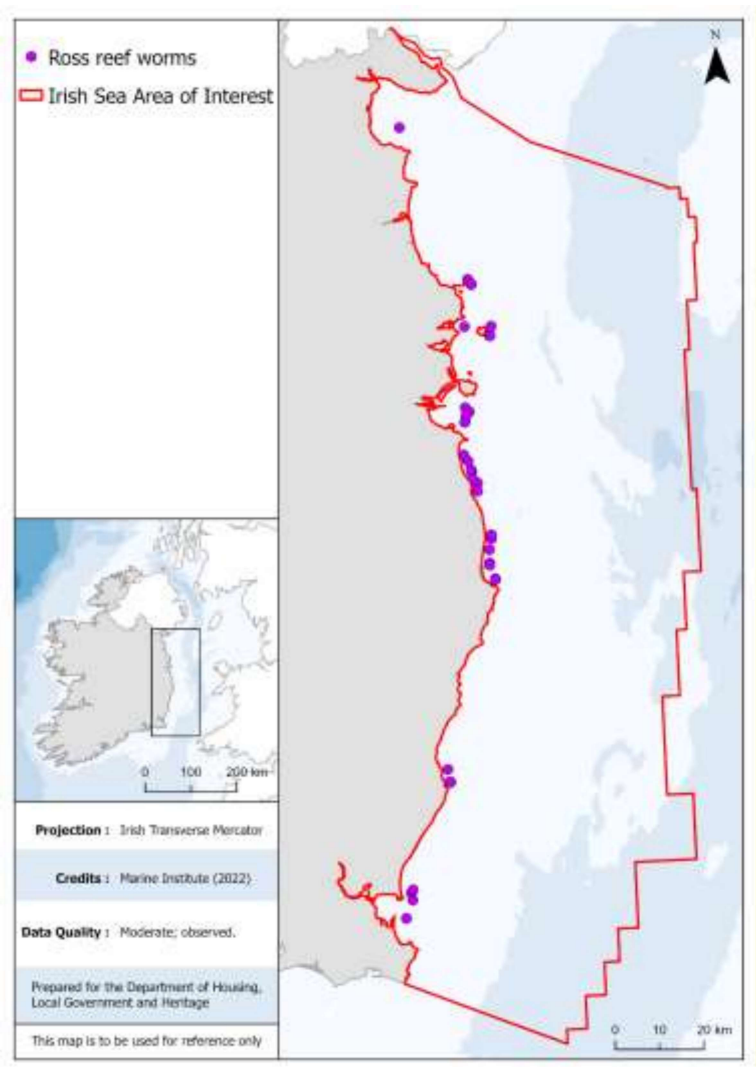


Figure 3. Data available for Ross worm reef, *Sabellaria spinulosa* in the western Irish Sea.

Data sources and quality

Dataset Name	Data Owning Organisation	Dataset Quality	Metadata URL	Comments
Marine Institute Water Framework Directive Benthic Data	Marine Institute	Moderate; observed		

References

OSPAR Commission (2009) Background document on *Sabellaria spinulosa* reefs. OSPAR Commission, United Kingdom.

- Tillin, H.M., Marshall, C., Gibb, N. & Garrard, S. L. 2022. *Sabellaria spinulosa* on stable circalittoral mixed sediment. In Tyler-Walters H. and Hiscock K. (eds) *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [on-line]. Plymouth: Marine Biological Association of the United Kingdom. [cited 26-04-2023]. Available from: <https://www.marlin.ac.uk/habitat/detail/377>
- Tyler-Walters, H., Tillin, H.M., d'Avack, E.A.S., Perry, F., & Stamp, T. (2018). *Marine Evidence-based Sensitivity Assessment (MarESA) – A Guide*. Marine Life Information Network (MarLIN). Marine Biological Association of the UK, Plymouth. <https://www.marlin.ac.uk/assets/pdf/MarESA-Sensitivity-Assessment-Guidance-Rpt-Dec2018.pdf>