18. Witch Flounder *(Glyptocephalus cynoglossus)*

Irish name: Leathóg bhán

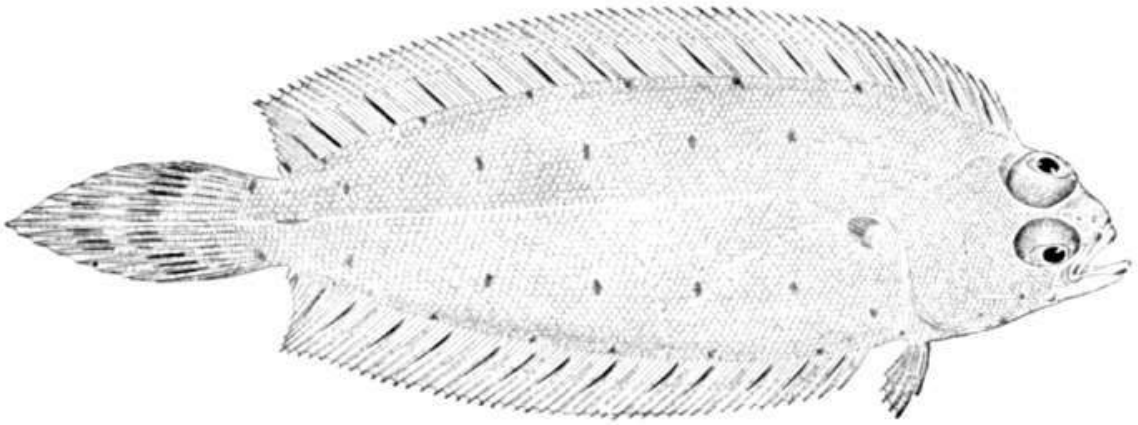

Figure 1. Witch flounder, *Glyptocephalus cynoglossus* (Linnaeus, 1758), Public Domain, https://commons.wikimedia.org/w/index.php?curid=677206

Background

Witch is a species of right-eye flounder from the family Pleuronectidae. It occurs on both sides of the North Atlantic Ocean on muddy sea beds in fairly deep water. It feeds primarily on crustaceans, polychaetes, and brittle stars. Eggs and larvae are pelagic and spawning occurs from May to September (Source: Fishbase).

There are very few directed fisheries for witch in European waters but due to its association with muddy substrates it is a by-catch species in the Nephrops and demersal trawl fisheries.

Rationale for spatial protection in the western Irish Sea

Witch flounder is nominated for inclusion with particular reference to its listing as Vulnerable by the global IUCN Red List. This is however a joint assessment of the western and eastern Atlantic populations and the western Atlantic stocks were weighted heavier when estimating global decline. The European Red List places witch in the Least Concern category. Nevertheless, witch is not subject to individual stock assessment or management in the western Irish Sea and there are no fishing restrictions in place under the Common Fisheries Policy (2015) so the precautionary principle was applied and spatial management is considered.

The western Irish Sea is a significant part of its range. Data on the distribution of this species in the Irish Sea is comprehensive; catch and positional data are available from the fishery (logbooks and VMS) and the IBTS survey reports CPUE, length, weight, age, sex and maturity from scientific hauls spread across the area in a stratified design.

Witch are amenable to spatial protection owing to its close association to fine-grained substrate types and the fact that tagging studies have shown little movement from resident areas (Bailey, 1997).

Sensitivity assessment

The highest associated sensitivity scoring for witch was in relation to physical loss or alteration of its habitat and its targeted and non-targeted removal (bycatch) by fishing. Elements of both of these pressure classification were deemed a medium sensitivity (with medium confidence). Due to its close association with fine-grained/muddy sediments, resistance to physical loss and change of sediment type were scored as low but, as witch are mobile and have pelagic eggs and larvae, resilience was scored medium.

One study in the western Atlantic found evidence to suggest the health of bottom-dwelling flatfish at three sites was impaired by chronic exposure to sediment contaminated with PAHs or PCBs. Overall however there was not enough literature to form an assessment of sensitivity.

Witch were assessed as not sensitive to waterflow changes but it should be noted that the transport and retention of their eggs and larvae to suitable areas of habitats in the Irish Sea relies on a certain ocean current and large scale disruption of that feature could disrupt settlement of larval witch.

Further research needs

Evidence to identify the potential effect of multiple pressures was insufficient to form an assessment. These pressures included chemical (transition elements and organo-metal contamination, hydrocarbon and PAH contamination, synthetic compound contamination and introduction of other substances).

Figure 2. Global geographic distribution of witch flounder, *Glyptocephalus cynoglossus,* from IUCN Global Red List Assessment 2021.

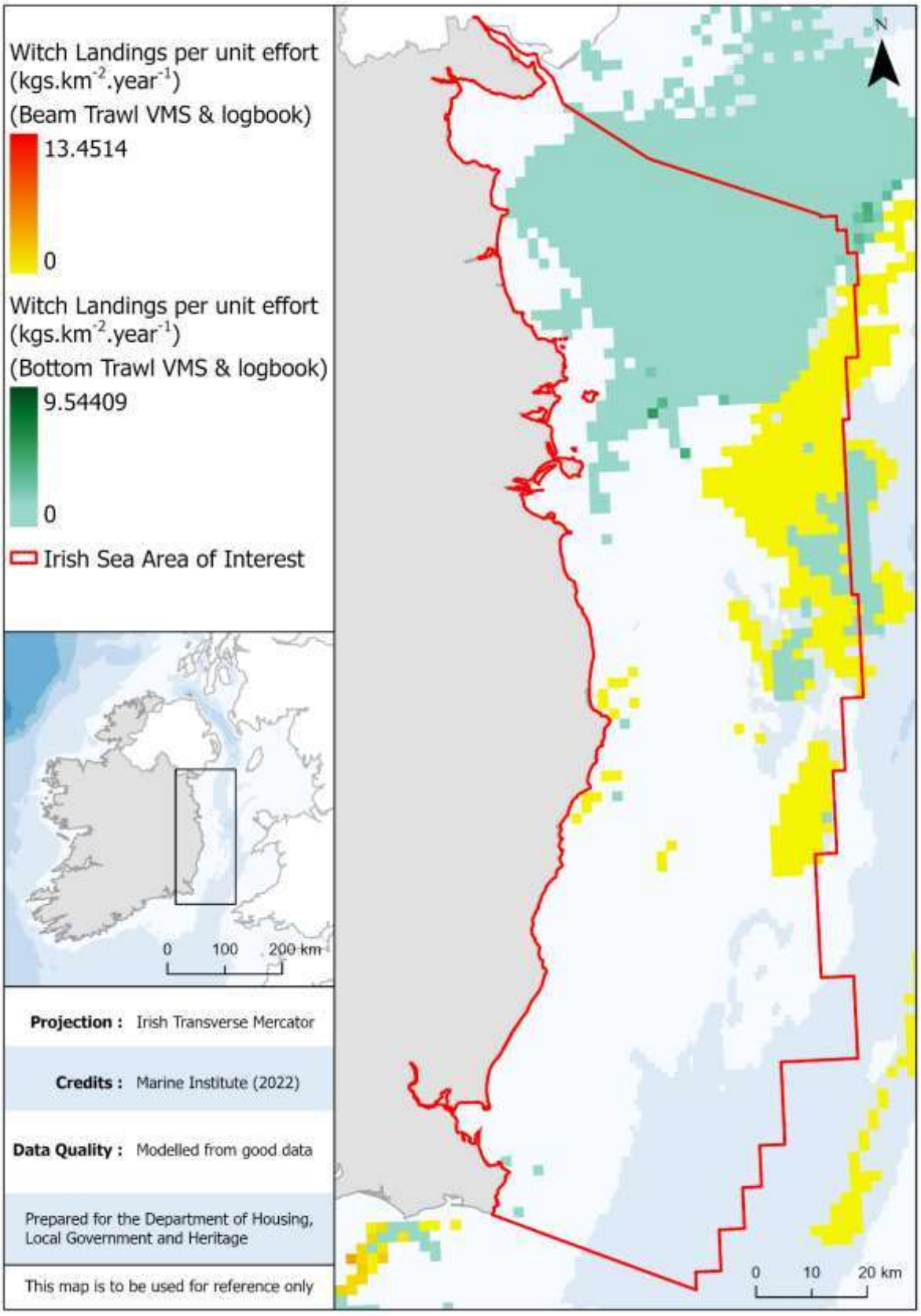

Figure 3. Data available for witch flounder, *Glyptocephalus cynoglossus,* in the western Irish Sea.

Data sources and quality

Dataset Name	Data Owning Organisation	Dataset Quality	Metadata URL	Comments
ICES international fishing effort and swept area ratios; VMS	International Council for the Exploration of the Seas	Modelled from good data		
International Bottom Trawl Survey (IBTS) Fisheries Database of Trawl Surveys (DATRAS)	International Council for the Exploration of the Seas	Good; observed	IE-IGFS and NIGFS	
Marine Institute VMS and logbook	Supplied to Marine Institute by Irish Naval Service and Sea Fisheries Protection Authority	Modelled from good data		

References

Bailey, K. (1997). Structural dynamics and ecology of flatfish populations. Journal of Sea Research, Volume 37, Issues 3–4, Pages 269-280, ISSN 1385-1101, https://doi.org/10.1016/S1385-1101(97)00018-X.

Cadrin, S., González Troncoso, D., Nimmegeers, S., Vansteenbrugge, L., Wheeland, L. & Munroe, T.A. 2022. *Glyptocephalus cynoglossus*. *The IUCN Red List of Threatened Species* 2022: e.T18214757A162704857.