7. Dog Whelk *(Nucella lapillus)*

Figure 1: Dog whelk, *Nucella lapillus.* © Dr Keith Hiscock (marlin.ac.uk)

Background

The shell of *Nucella lapillus* is broadly conical, bearing spiral ridges and consisting of a short, pointed spire, dominated by the last whorl. The shell is usually up to 3 cm in height by 2 cm broad but may reach up to 6 cm in height (Crothers, 1985), while the shell colour is variable but usually white. A short, open siphonal canal leads from the base of the aperture and the outer lip of the aperture is thin in young specimens, becoming thickened and toothed internally with age. The animal itself is white or cream coloured with white speckles, and a flattened head. The head bears two tentacles, each bearing an eye about one third of the length of the tentacle from its base. It is found on wave exposed to sheltered rocky shores from the mid shore downwards. Rarely present in the sublittoral but may be abundant in areas exposed to extremely strong tidal stress. They are gregarious and common amongst barnacles and mussels on which they feed.

Adult *Nucella lapillus* may be seen spawning or copulating in spawning aggregations, developing in early spring, sometimes summer. The egg capsules of Nucella lapillus are vase shaped, about 8mm high, usually yellow, and found attached to hard substrata in crevices and under overhangs. The number of capsules laid depends on the female's food reserves, age and temperature and although each capsule may contain ca 600 eggs, 94% of the eggs are unfertilized and function as 'nurse eggs' and are fed upon by the developing embryos (Fretter & Graham, 1994; Crothers, 1985). Capsules have been reported to release 12 -15 'crawl-away' hatchlings per capsule (Crothers, 1985), 13-36 hatchlings per capsule (Feare, 1970) or 25-30 hatchlings per capsule (Graham, 1988) (Tyler-Walters, 2007).

Application of feature list inclusion criteria

Nucella lapillus is listed by OSPAR with reference to its decline and sensitivity and was therefore nominated for inclusion on the feature list. The western Irish Sea is an important part of the species range and is amenable to spatial protection.

Sensitivity assessment

A sensitivity analysis was not carried out on *Nucella lapillus* at this time due to the time constraint for this report and its limited relevance due to the lack of data.

The decline of *N. lapillus* has been linked to contamination effects of tributyltin (TBT) compounds used in antifouling paints (*OSPAR Commission, 2008)*. TBT has been banned from use on boats since which time populations have begun to recover. Evans *et al.* (1996) reported marked recovery of many populations from the North Sea and Clyde Sea and that although ports were 'hot spots' of TBT contamination the populations of *Nucella lapillus* were not sterile and produced enough offspring to survive. However, several populations in semi-enclosed areas with high boating activity in southwest England had become extinct (Tyler-Walters, 2007).

Further research needs

Further information is needed on the current population status and distribution of *Nucella lapillus.* A comprehensive sensitivity analysis is also required.

Figure 2. Global distribution of *Nucella lapillus*, Source: https://mapper.obis.org/?taxonid=140403

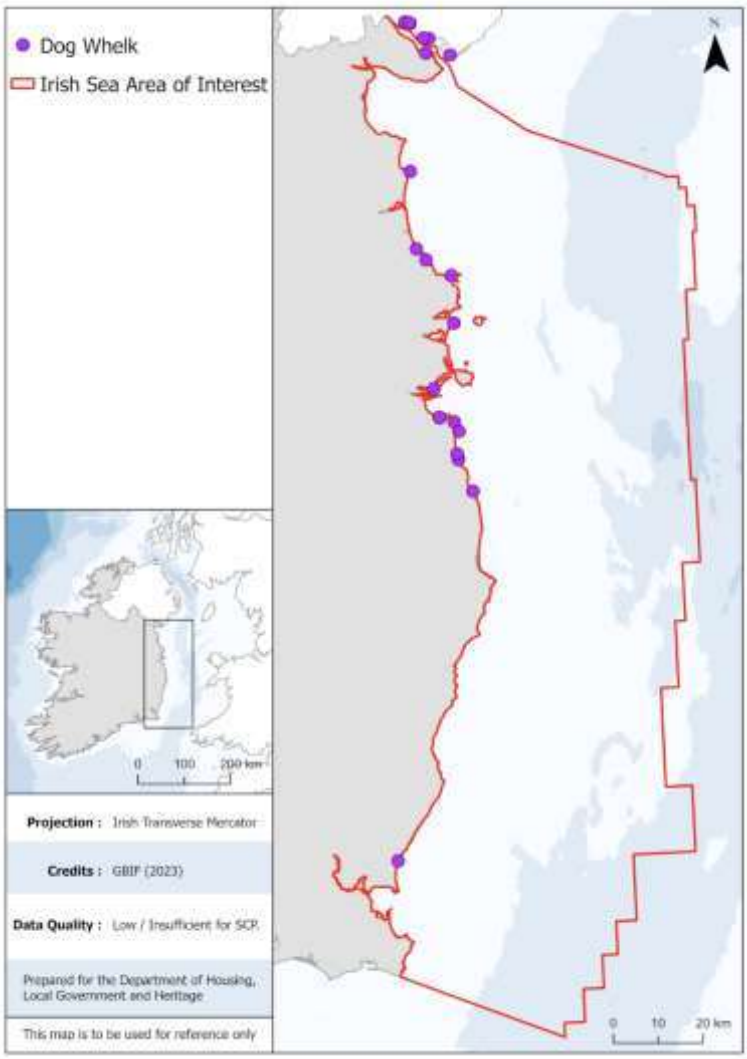

Figure 3. Data available for Dog whelk, *Nucella lapillus* in the western Irish Sea.

Data sources and quality

Dataset Name	Data Owning Organisation	Dataset Quality	Metadata URL	Comments
GBIF Dog Whelk	GBIF	Low / Insufficient for SCP	GBIF Dog Whelk	

References

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