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### Biotope analysis of Marine Scotland Science underwater video footage from the Hebridean Slope – Report Addendum

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# Biotope analysis of Marine Scotland Science underwater video footage from the Hebridean Slope – Report Addendum

This addendum to the 'Biotope analysis of Marine Scotland Science (MSS) underwater video footage from the Hebridean Slope' report has been prepared in order to consider additional information on *Nephrops* hauls from MSS trawl surveys of the slope. These haul data are from the same FRV Scotia MSS cruises undertaken between 2000 and 2009 as the underwater video sampling events.

## 1 Evidence for Nephrops norvegicus

The areas of burrowed mud observed at underwater camera stations DW0412, DW0901, DW0906, and to a lesser extent DEEP26, were characteristic of those constructed by the Norwegian lobster, *Nephrops norvegicus*. Figure 3.26 shows example images of *Nephrops* burrows captured from surveys of other areas around the British Isles. Although the burrows captured in the MSS video footage may be on the larger size expected for *Nephrops*, the *Nephrops* caught on the shelf edge tend to be very large animals compared to those sampled on the shelf (A. Weetman, pers. comm). The only other crustacean taxon identified within the video footage of a size suitable for the construction of the burrow features were brachyuran crabs belonging to the family Geryonidae. Evidence of burrowing in Geryonidae is largely circumstantial, but those burrows that have been attributed to Geryonidae have quite different entrances compared to those constructed by *Nephrops* (Rice & Chapman, 1971, Attrill *et al* 1991). Geryonidae burrows lack the crescentiform entrance of *Nephrops* burrows, and only have a single entrance, unlike the multiple entrances/exits commonly found with *Nephrops*. Images of presumed Geryonidae burrows can be found in Attrill *et al* (1991).



**Figure 1.1** Example images of *Nephrops norvegicus* burrows. **A)** From Campbell *et al* (2009); **B)** From Moore & Atkinson (2012).

Figure 3.27 shows *Nephrops* catch data from five FRV Scotia MSS deep water trawl surveys conducted on the same cruises as the underwater video camera transects (September 2000 to September 2009) discussed in Allen *et al* 2014. Although each cruise deployed both kinds of equipment, video lines and trawl lines were not completed in exactly the same location. *Nephrops* trawls were undertaken along the Herbidean Slope from sites located to the south of the southern-most selected underwater camera stations, up to the area where the northern-most selection of camera stations were located. However, the highest *Nephrops* 

catches were in the general vicinity of the camera stations were the large crustacean burrows were observed, offering further evidence for the likelihood that they were constructed by *Nephrops*. The trawling surveys caught *Nephrops* on the slope between ~250m down to ~800m across the whole survey area. This depth range was comparable with the depths from which the *Nephrops* burrows were observed at stations DW0412, DW0901, DW0906, and DEEP26.



**Figure 1.2** MSS *Nephrops* trawl haul data and location of underwater video survey stations. NB. Height of bar proportional to number of *Nephrops* caught – see legend for scale (note the video survey stations are a subset from the slope coinciding with pMPAs).

## 2 References

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