

7 MARINE FISH

7.1 INTRODUCTION

There are two components of the marine fish monitoring for FEPA reporting purposes: analysis of annual CEFAS trawl surveys and consultations with local fishermen through the Fisheries Liaison Officer. Analysis of semi-quantitative fish result (as a by-catch of the epifaunal beam trawl survey) is presented in Section 5.

7.2 CEFAS SURVEYS

The CEFAS trawl surveys have followed a consistent sampling protocol since 1989 and provide a useful baseline with which to examine temporal trends in the relative abundance of demersal fish. Relative abundance varies to a high degree naturally; indeed, indices of mean annual Catch Per Unit Effort (CPUE) for many species are likely to have high variance, and so only extreme impacts would indicate significant change, whereas more subtle impacts may be within the natural levels of variation and so remain undetected. However, the examination of temporal trends in the relative abundance of demersal fish in the south eastern Irish Sea should be a useful method for determining whether or not any major changes have occurred on a broader scale.

The purpose of the present report (Appendix xx) is to describe the CEFAS beam trawl survey undertaken in the Irish Sea in September 2004, summarise the main fish species in the area, and analyse long-term trends in CPUE for selected fish species, with a view to examining any major changes in abundance of fishes from 2003 onwards. Data are examined at both a regional and site-specific scale. This present report updates the original report (Ellis and Parker-Humphreys, 2004) and includes data collected from the 2004 survey.

Catch per Unit Effort (CPUE) data are presented, as no of fish per hour, at prime site 32, at all stations fished, and at all stations where each species was caught, for each of 17 major fish species. These were the flatfish dab, sole, solenette, plaice and scaldfish; the gadoids cod, whiting, bib and poor cod, the elasmobranches lesser spotted dogfish, spotted ray and thornback ray, together with dragonet, pogge, lesser weever, tub gurnard and grey gurnard. They were selected either because they were abundant, commercially important, of conservation importance, or considered useful indicators for monitoring change.

The intended use of the current CEFAS report in relation to the wind farm is to compare this against the baseline report presented the previous FEPA report. Identification of any possible effects of the wind farm operation (and residual effects from construction) on demersal fish would be virtually impossible, save for affects of an extremely large magnitude, since the data is from a single location on a single occasion, and the station is somewhat removed from the wind farm. In future years, once further data is available, it should be possible to make more meaningful analyses of trends, though the power to detect changes attributable to the wind farm will always be low. For these reasons, discussion of the results here is necessarily very cursory.

7.2.1 Results

Results from regular demersal fish surveys carried out by CEFAS in the Eastern Irish Sea have been summarised by CEFAS . This report (Appendix xx) updates the previous report and focuses on results of 4m half hour beam trawls carried out at "prime Site 32", which lies several km to the north east of the North Hoyle Offshore Wind Farm. The surveys are carried out annually in the autumn. The most recent data are from September 2004, which was during the operational period for the wind farm.

Approximately 40 species of marine fish were recorded around the North Hoyle wind farm area during CEFAS beam trawl surveys of the eastern Irish Sea between the years 1988 to 2004, which is in contrast to the more than 80 species that were observed over the whole eastern Irish Sea during these surveys, and to the 172 species that are known from the Irish Sea (Ellis et al., 2002). It must be stressed, however, that these data were from a beam trawl survey and pelagic fish (e.g. herring and

sprat), and small-bodied, benthic fish (e.g. sand gobies) will be under-represented.

The most abundant species in the North Hoyle site were flatfish (dab, sole, solenette, plaice and scaldfish), gadoids (whiting and poor cod), lesser weever, common dragonet and grey gurnard. These ten species accounted for >90% of the fish caught (by numbers). In terms of biomass, the dominant species were broadly similar, although large-bodied species such as lesser-spotted dogfish and thornback ray comprised a significant proportion of the fish biomass. The most common elasmobranch species caught were lesser-spotted dogfish, thornback ray and spotted ray, although occasional specimens of blonde ray and nurse hound were recorded.

The results from the 2004 survey showed that catches of dab, plaice, sole and solenette at station 32 were greater than catches in 2002 (pre-construction), and all except those of sole were above the long-term average for this site. Catches of solenette were particularly high at station 32 (1024 ind.hr⁻¹). Catch rates for scaldfish (290 ind.hr⁻¹) were also relatively high, and appear to show a generally increasing trend. Although the average CPUE for plaice throughout the eastern Irish Sea increased in 2004, this included a very large catch (2327 ind.hr⁻¹) at a single station (prime station 43), compared to a long-term average (1993 to 2003) of 54 ind.hr⁻¹ at this station.

Although no cod were caught in the North Hoyle area, since 2002 (pre-construction) CPUE increased for both whiting and poor cod and are currently above the long term average for station 32. The catch rate for whiting (180 ind.hr⁻¹) at this station was of a comparable magnitude to the 1995–1997 peak, while the catch rate of poor cod (86 ind.hr⁻¹) was the greatest catch reported from this site since 1993.

All the elasmobranch species examined have shown great variation in their CPUE in the North Hoyle area, but all species had a higher CPUE in 2004 than in 2002. CPUE of thornback ray was 20 ind.hr⁻¹, spotted ray was 12 ind.hr⁻¹ and lesser-spotted dogfish was 26 ind.hr⁻¹, and these catch rates were all above the long-term average catch rates for this station.

Conclusions

Data for the demersal fishes near North Hoyle and in the eastern Irish Sea were analysed from beam trawl catches (1993–2004) sampled during an annual beam trawl survey of the Irish Sea. This gear is a suitable gear to sample flatfish, juvenile gadoids and other demersal fish, though it is less efficient for small-bodied demersal species (e.g. gobies) and pelagic fishes.

Approximately 40 species of demersal fish occur in the vicinity of the North Hoyle site, with about 15 of these abundant.

The distribution and relative abundance (catch per unit effort), and temporal changes in relative abundance were examined for edible crab and 17 species of fish.

Catch rates of fish sampled on a single occasion during an annual survey can be highly variable. Only one species (pogge) had a relatively consistent catch rate over time (1993 to 2003) at Prime station 32. The catch rates of six other species (dab, plaice, lesser weever, solenette, scaldfish and common dragonet) at Prime station 32 were more variable, and the catch rates for the remaining species were highly variable.

Data from 2004 indicated that catch rates of 12 species (dab, plaice, sole, solenette, scaldfish, whiting, poor cod, thornback ray, spotted ray, lesser spotted dogfish, tub gurnard and common dragonet) at the station near North Hoyle were greater than those in 2002. Catches of solenette and poor cod reached a record high for the time-series. There was, however, a decline in the catches of grey gurnard, pogge and lesser weever. Catches of the three species of elasmobranch near North Hoyle were all above the long-term average for the sampling station.

Fish populations are naturally variable and when sampled at a single location will show large fluctuations in abundance from year to year. Populations are affected by a wide range of environmental factors, especially temperature and food availability, and will respond to changes in these conditions, as well as the potential adverse effects of human activities.

Bearing in mind the limitation outlined above, the CPUE data nevertheless suggest no major deviations in demersal fish populations in autumn 2004. Ten of the seventeen species were caught in

numbers which were higher than the ranges for the previous ten years in the North Hoyle area suggesting that construction and operation of the wind farm have not had any major deleterious effects on fish populations.

7.3 CONSULTATION/CANVASSING OF LOCAL FISHERMEN

The North Hoyle Offshore Wind Farm is wholly within the 6 miles coastal fishing limit. Only UK-registered fishing vessels are permitted to fish within the 6 mile fishing limit where they are all subject not only to EU and UK fishery legislation but also the byelaws of the North Western and North Wales Sea Fisheries Committee (NWNW SFC).

Vessels of any length fishing with hooks and lines, drift nets or dredging for mussels are permitted to fish anywhere with the NWNW SFC district; length restrictions apply to all other vessels, including trawlers, set netters and scallop dredgers. In that part of the SFC district west of Rhyl coastguard station, i.e. including North Hoyle wind farm, only trawlers, set netters and scallop dredgers not exceeding 13.7 m in length are permitted to fish (SFC Byelaw 9).

For all practical purposes, Byelaw 9 limits fishing to vessels that are based in or operate from ports, harbours and landing places around Liverpool Bay. Drift netting has not been practised in the area for many decades and the occasional licensed mussel dredging tends to be close inshore off Llandulas and Rhos-on-Sea. Itinerant beam trawlers from, for example, the south west of England or scallop dredgers from Scotland or the Isle of Man are likely to exceed this size limitation and, therefore, will not fish closer than approximately 2 miles from the North Hoyle wind farm. Nevertheless, representative organisations of these vessels were notified of the annual monitoring consultation exercise (see below) and invited to comment if they wished.

7.3.1 Consultation

A network of fishing industry contacts with active interests on or around the North Hoyle ground was established as part of the North Hoyle environmental impact assessment (Innogy, 2002). This network has been maintained and expanded in response to the need to monitor commercial and recreational fishing interests around North Hoyle and as part of the preparation of an environmental impact assessment for a proposed larger offshore wind farm (Gwynt y Môr) off the North Wales coast (Lockwood, 2005).

The complete consultation list compiled for the Gwynt y Môr wind farm comprises almost 100 individuals and representative bodies but only 54 of these were contacted as part of the North Hoyle FEPA monitoring programme (Annex 1). The majority were sent a letter notifying them of the annual FEPA review and invited them either to offer comments or await a visit or telephone call. Some recipients did not respond and could not be contacted further; several Fleetwood skippers were consulted in person during a port visit on the 7 and 8 July 2005.

In all, 30 individual fishermen or fishing organisation representatives contributed to the consultation exercise, plus three of the local fishery regulators:

- <10 m vessels – 12
- >10 m vessels – 4
- Charter angling – 5
- Regulators – 3

7.3.2 Effects of North Hoyle Wind Farm on Fishing Activity

7.3.2.1 Angling Charter Boats

Locally-based angling charter boats generally fish in close proximity to the numerous wrecks that are found across Liverpool Bay, including some immediately to the north west of North Hoyle wind farm. There are no wrecks within the wind farm boundary and the site is not a destination that the angling

charter boats have tended to fish, neither before nor during construction work. During the early summer of 2005, however, in addition to fishing the wrecks to the north-west of North Hoyle, Rhyl-based boats have worked close to, but not yet within, the north-west boundary of the wind farm.

Rhyl skippers report that when working close to the wind-farm, anglers' catches have been good and comprised a wide variety of species, including: small cod, whiting, 'skate' (most probably thornback ray), a variety of dogfish, tope, plaice, dab, flounder, mackerel, black bream and ballan wrasse. Currently, the Rhyl skippers take the view that the wind farm has not had any adverse effect on fish or their fishing activities and are optimistic that the site may prove beneficial to their business.

The charter-boat skippers are aware that there is no restriction on them entering or fishing within the wind-farm but they have not yet opted to fish within the wind-farm boundary. The reason they offer is that North Hoyle is not a ground they have fished hitherto but they are aware that some wind-farm service-boat crew have been angling occasionally with some success within the wind farm. They have not ruled out taking angling parties within the wind farm in the future.

Charter boat skippers from Rhos-on-Sea have not fished around North Hoyle but are aware of the Rhyl skippers' experience and take a comparable optimistic view of future wind farm developments. North Hoyle is also beyond the range of Conwy-based charter boats; they are less optimistic about the future.

The Welsh Federation of Sea angling Clubs have discussed wind farms at council meetings and have received only good reports of members' fishing activity and fishing around North Hoyle.

7.3.2.2 Netting

Under 10 m boats based in Conwy/Rhos-on-Sea, Rhyl, Prestatyn and the on the Wirral have set nets each summer across and around the North Hoyle wind-farm site for many years. Construction of the wind farm resulted in loss of access to the wind-farm site plus a zone 1-2 miles wide around the wind farm. (A typical fleet of set-nets operated by local boats is approximately 2000 m long; too long to be worked safely within the wind farm or within a comparable distance of any turbine.)

During the construction phase and summer of 2004, all the local set-net boats experienced poor fishing in proximity to North Hoyle and explored grounds further afield than had been their previous practice. During 2005 some of the boats maintained this new pattern as this proved satisfactory fishing while others returned to the previous pattern "working very close" (i.e. 1-2 miles) to the wind farm. The 2005 catches around the North Hoyle wind farm, both inshore and offshore, were comparable in quantity and composition to catches made before construction work began.

7.3.2.3 Trawling

The ground occupied by the North Hoyle wind farm has rarely, if ever, been a popular trawl ground. Trawling has tended to be to the east (particularly between the Dee and Mersey estuaries), the north and to the west (Chester Flats and Constable Bank).

Only two Rhos-on-Sea and one Conwy-based under 10 m boats trawl throughout the year (weather permitting). Only the Conwy boat fishes east of the river Clwyd and then very rarely and not within the past year. A Wirral-based under 10 m trawler that normally fishes grounds to the east of North Hoyle fished within a quarter of a mile of the turbines during the autumn of 2004 and spring of 2005. The skipper expressed the opinion that fishing was very poor compared to catches made before construction but was unable to offer any firm evidence to support this impression. While this skipper is content to fish close to the wind-farm boundary he said that he would not be willing to fish within it.

Similarly, a Fleetwood-based, under-10 m beam trawl skipper who fished within 2 miles of North Hoyle during the spring of 2005 for the first time said that he would not fish within the wind-farm boundary. Apart from the direct loss of access caused by the presence of the wind farm, he was generally satisfied that North Hoyle was not interfering with his fishing.

Only one other trawler skipper who was consulted had reported fishing near North Hoyle but, as his vessel exceeds the SFC bye-law length restrictions, he did not fish closer than 5 miles from the wind farm. At this distance he was satisfied that the wind farm was not affecting his fishing.

7.3.2.4 Scallop Dredging

The Irish Sea – Liverpool Bay king and queen scallop fishing grounds are to the north west of the North Hoyle wind farm. While some boats might make the occasional tow within 5 miles of North Hoyle the majority of scallop fishing is more than 10 miles away. The UK Scallop Association is satisfied that its members are not affected, as is the Manx Fish Producers' Organisation (FPO).

7.3.3 Conclusions

During the latter stages of the North Hoyle construction phase (spring 2004), and possibly throughout the summer-autumn of 2004 it appears that fish distributions or behaviour were affected in some way that resulted in poor catches. Initially, this appeared to continue into 2005 but from spring 2005 the general impression is that fishing in close proximity to the North Hoyle wind farm has picked up and is not significantly different from how it was immediately before construction work began.

Although formal records have not been kept, the angling charter boat skippers take a keen interest in the range of species taken by their clients as this influences subsequent bookings. They are satisfied that the variety of species and size of fish is sufficient to meet their clients' expectations and ensure further bookings.

The charter-boat angling in close proximity to the north-west corner of the wind-farm site has regularly yielded catches of rays, tope and a variety of dogfish species. Although it is too early to draw any firm conclusions with respect to individual species or elasmobranchs in general, these initial reports suggest that the elasmobranch species are not being driven from the area as a result of operation of the wind farm.