

Stock Annex Norway lobster (*Nephrops norvegicus*) in Division 4.b, Functional Unit 33 (central North Sea, Horn's Reef)

Stock-specific documentation of standard assessment procedures used by the ICES.

Stock:	Norway lobster (<i>Nephrops norvegicus</i>) in (FU33)
Working group:	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)
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A. General

Stock definition

Throughout its distribution, *Nephrops* is limited to muddy habitat, and requires sediment with a silt & clay content of between 10–100% to excavate its burrows. This means that the distribution of suitable sediment defines the species distribution. Adult *Nephrops* only undertake very small scale movements (a few 100 m) but larval transfer may occur between separate mud patches in some areas. Off Horn's Reef is located in the eastern part of Division IV. In common with other *Nephrops* fisheries the bounds of the Functional Unit are defined by the limits of muddy substrate.

Fishery

General description

The Off Horn's Reef *Nephrops* grounds are exploited mainly by Denmark, Netherlands, Belgium and Germany, with minor landings from the UK. Approximately 10 % of Danish *Nephrops* landings are taken within these fishing grounds.

Fishery management regulations

Ecosystem aspects

No information on the ecosystem aspects of this stock has been collated by the Working Group

B. Data

Commercial catch

Two types of sampling occurs for this stock: Catch and discard sampling at sea (on board sampling) and to a small extent (in Danish ports) some sampling of landings. The sampling provides information on size distributions and sex ratios. However,

given that the levels of market and discard sampling are low, the length structure of removals in the fishery is not considered to be well represented by the available data. The MLS for *Nephrops* in the North Sea is 25 mm carapace length.

Table B1-1 shows the landings, effort and LPUE data for single trawls, multiple trawls and combined while Figure B1-1 illustrates the long term commercial LPUE data. The low levels of sampling for this fishery mean it is not realistic to draw conclusions from changes in size composition or sex ratio. Figures B1-2 and B1-3 show landings and effort, and LPUE data, respectively. Due to the very low levels of effort, small changes are likely to have very large effects and for this reason some data points in Figure B1-3 have been removed.

Biological sampling

No data available

Surveys

No Underwater TV surveys are available for this stock

Commercial CPUE

Landings and effort data for Danish and Dutch *Nephrops* trawl gears are used to generate a LPUE index. LPUE is estimated using officially recorded effort (hours fished) although the recording of effort is not mandatory. Discard sampling commenced in 1990 for this fishery, and for years prior to this, an average of the 1990 and 1991 values is applied. There is no account taken of any technological creep in the fleet.

For more information see section B.1

Other relevant data

C. Assessment methods and settings

Choice of stock assess model

Model used of basis for advice

Assessment model configuration

D. Short-term prediction

E. Medium-term prediction

F. Long-term prediction

G. Biological reference points

H. Other issues

I. References

Table B1.1. -Off Horns Reef (FU 33): Danish logbook recorded Landings (tonnes), effort (kW days) and LPUE (kg/kW day) for bottom trawlers catching *Nephrops* with codend mesh sizes of 70 mm or above 1993-2015.

	<i>All Nephrops gears</i>		
	Landings	Effort	LPUE
1993	159	629	0.253
1994	137	388	0.353
1995	158	376	0.420
1996	74	213	0.348
1997	274	490	0.559
1998	333	753	0.442
1999	683	1169	0.584
2000	537	1040	0.516
2001	667	1251	0.533
2002	772	1610	0.480
2003	842	1598	0.527
2004	1097	1901	0.577
2005	803	1085	0.741
2006	710	960	0.740
2007	610	774	0.788
2008	362	445	0.813
2009	231	275	0.841
2010	180	247	0.729
2011	396	346	1.144
2012	394	298	1.321
2013	310	239	1.298
2014	387	374	1.034
2015*	371	279	1.330

* provisional na = not available

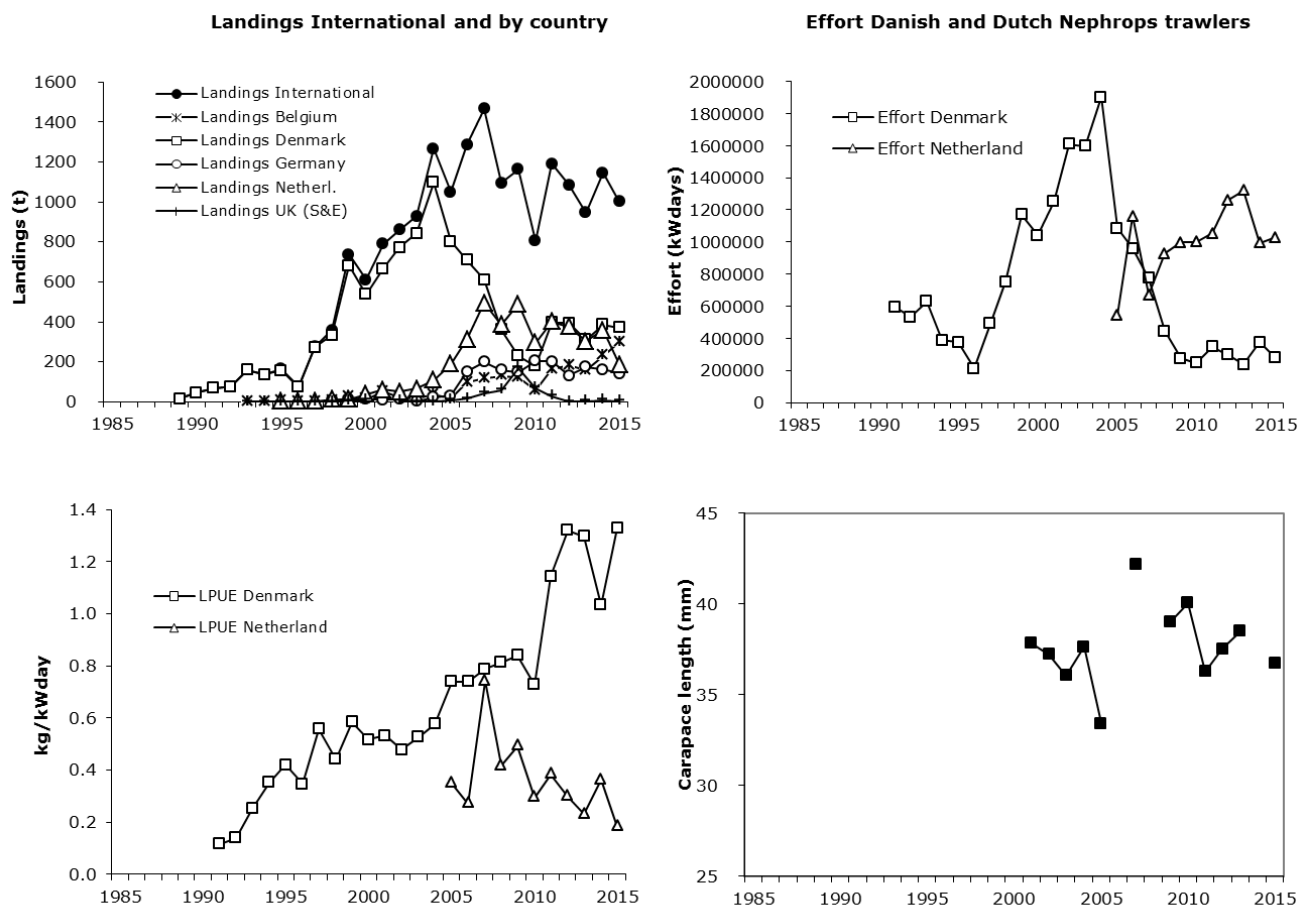


Figure 3.4.1.11 *Nephrops*, Off Horn's Reef (FU 33), Long term landings, effort, LPUE and mean sizes.