

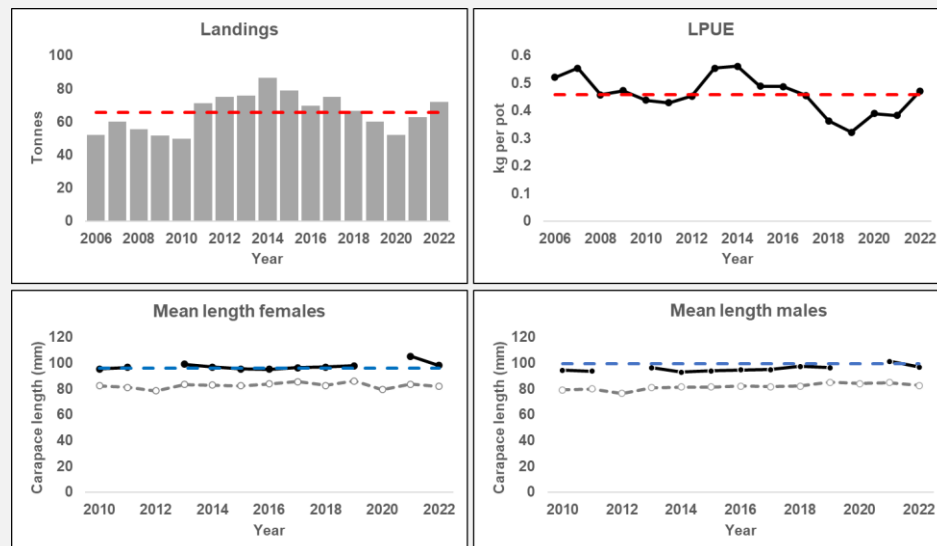
# European lobster, *Homarus gammarus*

## ADVICE

Landings should be decreased in line with the declining size indicators of male lobster catches. It is advised that **landings in 2024 should be no more than 62 tonnes**.

## FISHERY AND STOCK TRENDS

In 2022, 72 tonnes of lobster were landed by NI registered vessels from the ICES rectangles 37E3, 37E4, 38E4, 39E3 and 39E4 (Fig 1). Whilst this is an increase in landings compared to the previous four years, landings remain below their peak in 2014 (Fig 1). The Landings per Unit Effort (LPUE) also peaked in 2014, followed by a decrease until 2020, since which LPUE has rallied (Fig 1). The mean size of landed females remains above the size at which growth is optimal,  $L_{opt}$ . Whilst males in 2021 were above  $L_{opt}$  for the first time since the time series began, in 2022 they fell below  $L_{opt}$  again. Using  $L_{opt}$  as a proxy for Maximum Sustainable Yield (MSY), the female stock is considered to be exploited sustainably whilst the males are considered over exploited.



**Fig 1.** Lobster in ICES rectangles 37E3, 37E4, 38E4, 39E3 and 39E4. Summary of the stock assessment. Landings, Landings per Unit Effort (LPUE), length-based indicators. Red dashed line represents average over time period. For the length-based indicator, the solid black line indicates mean size lobster landed and the dashed black line is mean size of all lobsters measured. The dashed blue lines indicate  $L_{opt}$ .

**Table 1.** Lobster in ICES rectangles 37E3, 37E4, 38E4, 39E3 and 39E4. State of the stock relative to reference points and qualitative fishing pressure.

Fishing Pressure				Stock Indicator (males)			Stock Indicator (females)				
2020	2021	2022	Increasing; Above average	2020	2021	2022	Decreasing; Below $L_{opt}$	2020	2021	2022	Decreasing; Above $L_{opt}$
↓	↓	↓		-	↑	↓		-	↑	↓	

## ADVICE BASIS

A commercial LPUE time series is used to indicate stock trends. The advice is based on the ratio of the mean LPUE of the last two index values (Index A) and the mean of the three preceding values (Index B), multiplied by the recent average catch (3 years).

A precautionary buffer was applied for this stock due to the indicator of size of male lobsters being below  $L_{opt}$ .

**Table 2** Lobster in ICES rectangles 37E3, 37E4, 38E4, 39E3 and 39E4. Basis for advice.\*

Index A (2021 - 2022)	0.43 kg/pot
Index B (2018–2020)	0.36 kg/pot
Index ratio (A/B)	1.19
Recent landings for 2019 – 2022**	65 t
Precautionary Reduction	Applied (0.8)
Landings advice***	62 t
% Advice change ^	-4.7 %

\* The figures in the table are rounded. Calculations were done with unrounded inputs and computed values may not match exactly when calculated using the rounded figures in the table.

\*\* 2020 landings excluded due to Covid-19 impacts on landings

\*\*\* [Mean recent landings (2019 – 2022)] × [Index Ratio].

^Advice change is based on the current advised landings compared to mean recent landings (2019 – 2022).

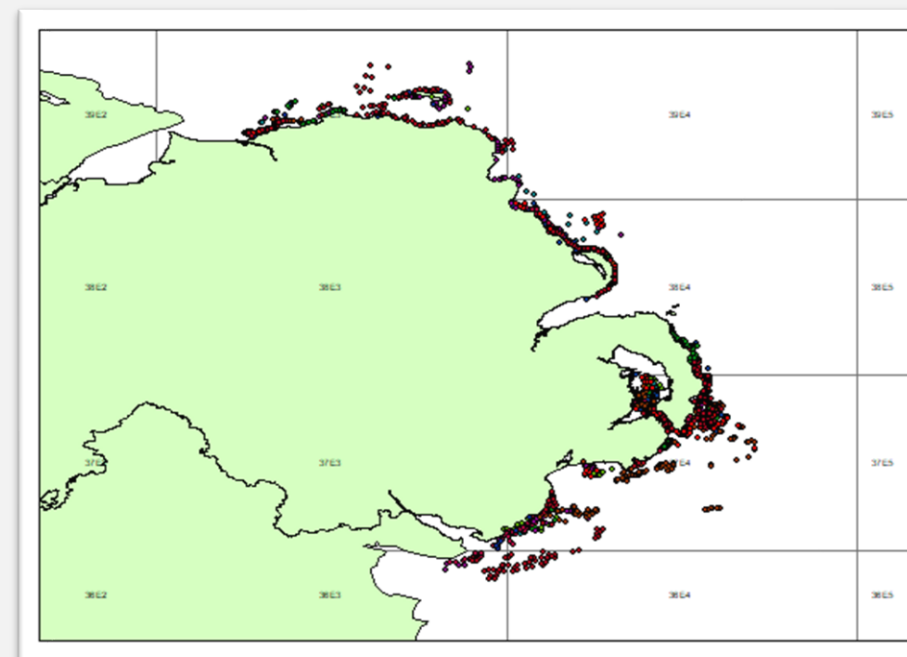
## REFERENCE POINTS

**Table 2. Reference points**

Reference point	Value	Technical basis
$L_{opt}$ Male	99.3	Length at which growth rate is maximum
$L_{opt}$ Female	95.8	Length at which growth rate is maximum

## QUALITY OF THE ASSESSMENT

The assessment is based on landings from NI waters (ICES rectangles 37E3, 37E4, 38E4, 39E3 and 39E4) by NI registered vessels. These landings are made into NI, other UK and Irish ports.



**Fig 2.** At-sea observation of pot fishing.

The landings and effort in 2020 may have been impacted by Covid-19 due to market factors and public restrictions to limit Covid-19 spread.

Genetic studies show that the lobster population in NI waters is connected through larval dispersal.

A length-based model was used to examine the health of the lobster stock. For a stock to be healthy the mean length should be at  $L_{opt}$ . The output of the assessment indicates that whilst female lobsters are being fished sustainably, male lobsters are overexploited (mean length is below  $L_{opt}$ ).

The data used in the length-based model are collected at-sea, on board fishing vessels. These data are available from 2010 to 2022 (limited data are available in 2020 due to Covid-19). The data used in the assessments exclude lengths from lobsters in Strangford Lough which are considered to have different growth characteristics. Between 2010 and 2022, an average of 21 trips have been carried out annually.

The LPUE series is derived from reported landings data. These data are reliant on accurate self-reporting from commercial fishers. Methods for automated data collection would provide more detail on effort trends, including the duration over which pots are deployed.

## ISSUES RELEVANT FOR THE FISHERY

A minimum landing size of 87mm is applied in NI.

## SUMMARY OF THE ASSESSMENT

**Table 3** Lobster in ICES rectangles 37E3, 37E4, 38E4, 39E3 and 39E4. Assessment summary.

Year	Landings	Effort*	Mean Length	
			Males	Females
2006	52.0	15135	-	-
2007	60.1	15700	-	-
2008	55.5	18499	-	-
2009	51.7	19655	-	-
2010	49.9	21916	94.5	95.4
2011	71.2	22247	93.6	96.6
2012	74.9	21340		
2013	75.7	22387	96.3	99.0
2014	86.5	21076	92.9	96.8
2015	78.7	18443	93.8	95.5
2016	69.8	18992	94.7	95.2
2017	74.9	22407	94.8	96.5
2018	66.5	23733	97.2	96.8
2019	60.0	26178	96.3	97.8
2020	51.9	17183	-	-
2021	62.7	18335	101.2	105.3
2022	72.0	21074	96.9	98.1

\*Reported number of pots.