

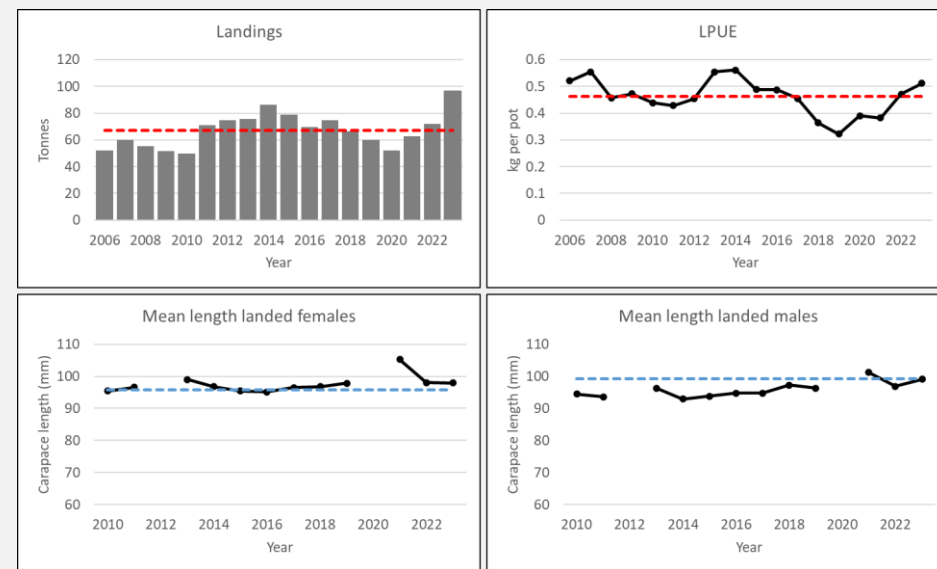
# European lobster, *Homarus gammarus*

## ADVICE

Landings may be increased in line with the increasing LPUE and length indicator. It is advised that **landings in 2025 should be no more than 83 tonnes**.

## FISHERY AND STOCK TRENDS

In 2023, 96 tonnes of lobster were landed by NI registered vessels from the ICES rectangles 37E3, 37E4, 38E4, 39E3 and 39E4 (Fig 1). This is the largest weight of lobsters which have been recorded as landed from NI waters (Fig 1). While the Landings per Unit Effort (LPUE) increased in 2023, it is still below the 2014 peak value (Fig 1). The mean size of landed females remains above the size at which growth is optimal,  $L_{opt}$ . Whilst the average length of landed males increased in 2023, they are still marginally below  $L_{opt}$ . 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. 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) |      |      |                         |
|------------------|------|------|---------------------------|-------------------------|------|------|-----------------------------|---------------------------|------|------|-------------------------|
| 2021             | 2022 | 2023 | Increasing; Above average | 2021                    | 2022 | 2023 | Increasing; Below $L_{opt}$ | 2021                      | 2022 | 2023 | Stable; 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 (2022 - 2023)           | 0.49 kg/pot   |
| Index B (2019–2021)             | 0.36 kg/pot   |
| Index ratio (A/B)               | 1.34          |
| Recent landings for 2021 – 2023 | 77 t          |
| Precautionary Reduction         | Applied (0.8) |
| Landings advice**               | 83 t          |
| % Advice change ^               | 7.7 %         |

\* 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.

\*\* [Mean recent landings (2021 – 2023)] × [Index Ratio].

^Advice change is based on the current advised landings compared to mean recent landings (2021 – 2023).

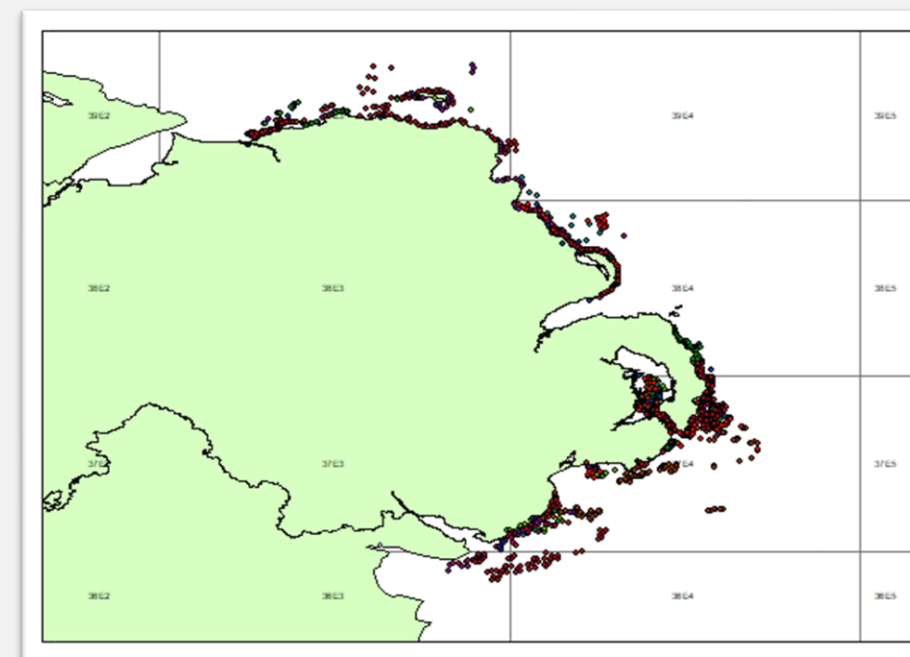
## REFERENCE POINTS

**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. The current assessment does not account for landings from other nations vessels, information on these landings could improve the assessment of stock.



**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 2023 (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 2023, an average of 22 trips have been carried out annually and 1,437 lobsters measured.

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 | Mean Length |
|------|----------|---------|-------------|-------------|
| 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        |
| 2023 | 96.2     | 22964   | 99.1        | 98.0        |

\*Reported number of pots not individual hauls.