

Velvet crab, *Necora puber*

ADVICE

Catches may be increased in line with increasing Landings per Unit Effort (LPUE) trends and size indicators of crab catches. This supports that catches in 2021, 2022 should be no more than 253 tonnes.

FISHERY AND STOCK TRENDS

In 2020, 220 tonnes of velvet crab were landed by NI registered vessels from NI waters (ICES rectangles: 37E3, 37E4, 38E4, 39E3, 39E4). This is an increase in landings from a low of 119 tonnes in 2014, but similar to the 2019 landings (223 tonnes). The LPUE had decreased between the beginning of the time series and 2015 but has since increased slightly. The mean size of individual velvet crab measured in the catches indicate that whilst for females these are above the length at which growth is optimum (Lopt), for males these are below Lopt since 2011.

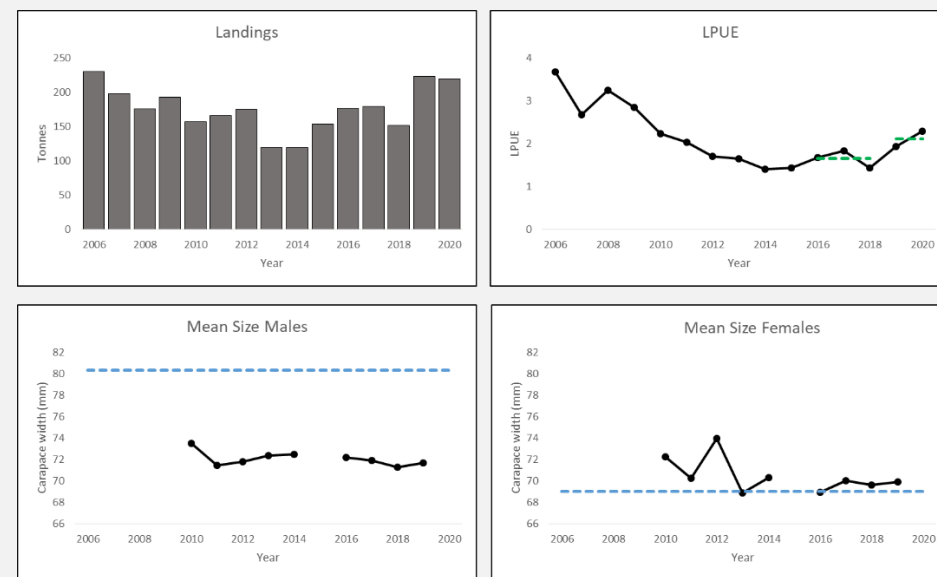


Fig 1. Velvet in ICES rectangles: 37E3, 37E4, 38E4, 39E3, 39E4. Summary of the stock assessment. Catches, LPUE, length based indicators. The dashed green lines indicate the average of the most recent two years and the previous three years. The dashed blue lines indicate Lopt.

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

Fishing Pressure			Stock Indicators (males)			Stock Indicators (females)		
2018	2019	2020	2018	2019	2020	2018	2019	2020
↗	↗	↘	↘	↘	-	↘	↗	-
Decreasing			Below; increasing			Above; increasing		

ADVICE BASIS

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

A precautionary buffer was not applied for this stock due to the indicator of size of female velvet crab being above the Lopt.

Table 2 Velvet crab in ICES rectangles: 37E3, 37E4, 38E4, 39E3, 39E4. Basis for advice.*

Index A (2019 - 2020)	2.11 kg/pot
Index B (2016–2018)	1.66 kg/pot
Index ratio (A/B)	1.27
Recent catch for 2018 - 2020	198 t
Precautionary Reduction	Not applied
Catch advice**	253 t
% Advice change ^	+27 %

* 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 catch (2018 – 2020)] × [Index Ratio].

^Advice change is based on the current advised catch compared to mean recent catch (2018 – 2020).

REFERENCE POINTS

Table 2. Reference points

Reference point	Value	Technical basis
L _{opt} Male	80.4	Length at which growth rate is maximum
L _{opt} Female	69.0	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, 39E4) by NI registered vessels. These landings are made into NI, other UK and Irish ports.

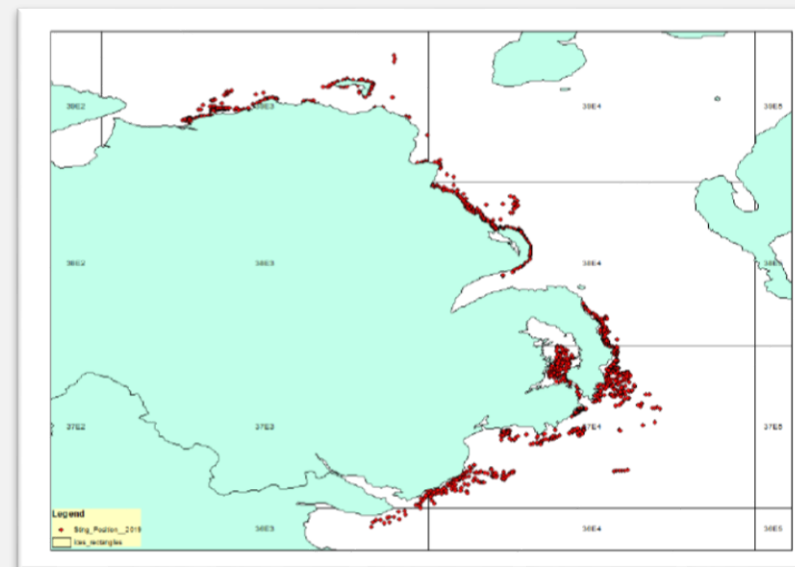


Fig 2. At-sea observation of pot fishing.

Of all the velvet crab measured, 30% were under the MLS. Whilst an average of 70% of animals are greater than the MLS, only an average of 60% of catch are actually landed, giving a discard rate of 40%.

A length based model was used to examine the health of the velvet crab stock. For a stock to be healthy the mean length should be at Lopt. The output of the assessment indicates that whilst female velvet crab are being fished sustainably, male velvet crab are shown to be overexploited (mean length is below Lopt).

The data used in the length based model is collected through an observer programme. Observer data is available from 2010 to 2019 (no data is available in 2020 due to Covid-19 which meant observer trips could not take place). The data used in the assessments excludes lengths from crabs in Strangford Lough which are felt to have a different growth rate. Between 2010 and 2019, an average of 18 trips have been carried out annually.

The LPUE series is derived from reported landings data. This data is 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

The assessment is based on a length based model but excludes Strangford Lough data as velvet crab from the Lough are thought to have a different growth rate. A minimum landing size of 65mm.

2020 landings and effort may have been impacted by Covid-19 which impacted fishing and markets due to lockdown within UK and Europe.

SUMMARY OF THE ASSESSMENT

Table 3 *Necora puber* in ICES rectangles: 37E3, 37E4, 38E4, 39E3, 39E4.

Assessment summary.

Year	Landings	Effort*	Mean Length Males	Mean Length Females
2006	230.6	11013	-	-
2007	198.3	11216	-	-
2008	175.9	9855	-	-
2009	192.8	12176	-	-
2010	157.6	12685	73.5	72.3
2011	166.1	12518	71.5	70.3
2012	174.8	12895	71.8	74.0
2013	119.8	13197	72.4	68.9
2014	119.4	12772	72.5	70.3
2015	153.3	9257	-	-
2016	176.8	12158	72.2	68.9
2017	179.1	13973	72.0	70.0
2018	151.7	14424	71.3	69.6
2019	222.8	17164	71.7	69.9
2020	219.8	13100	-	-

*This is the reported number of pots fishing not the number of hauls