

Cancer pagurus

Status and assessment in Europe

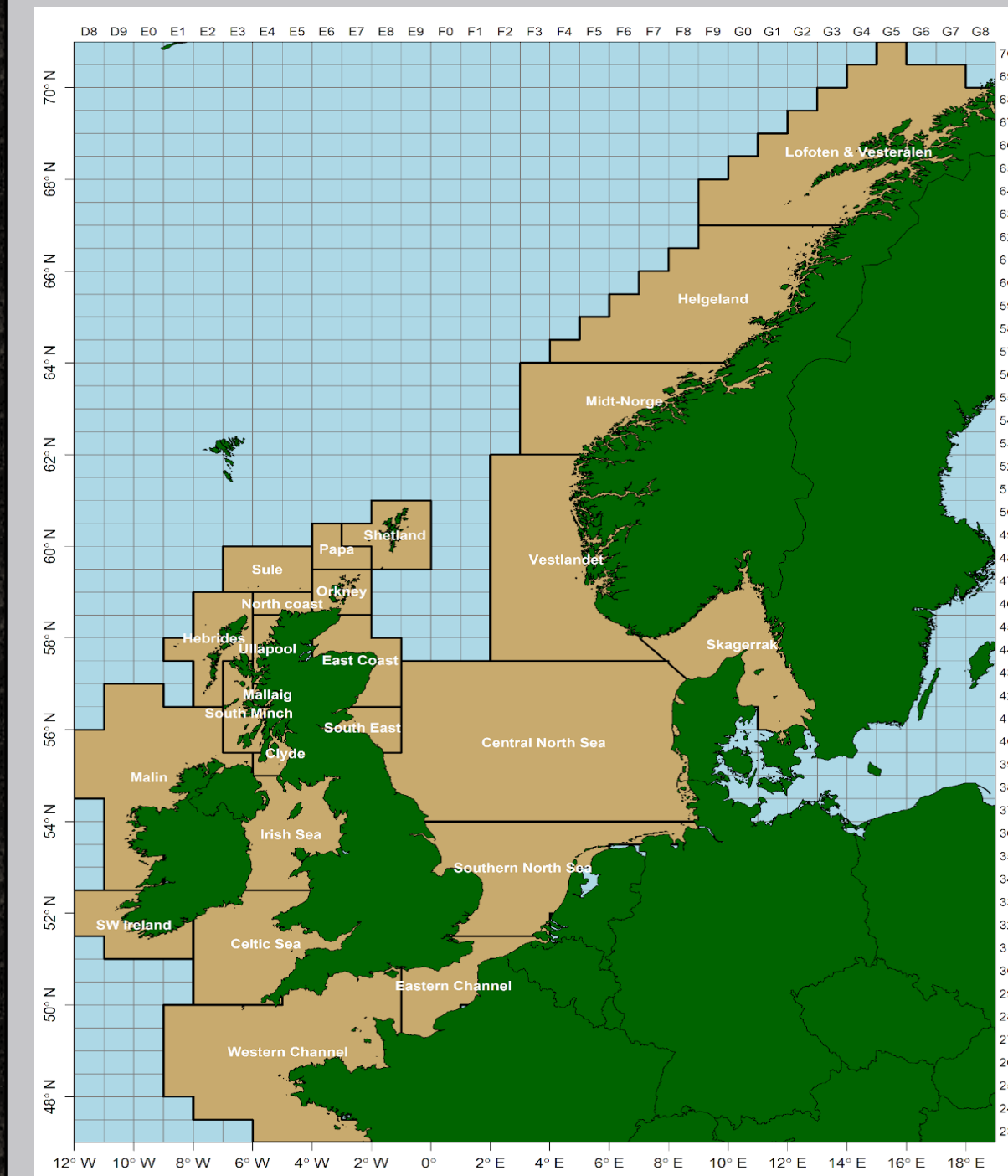
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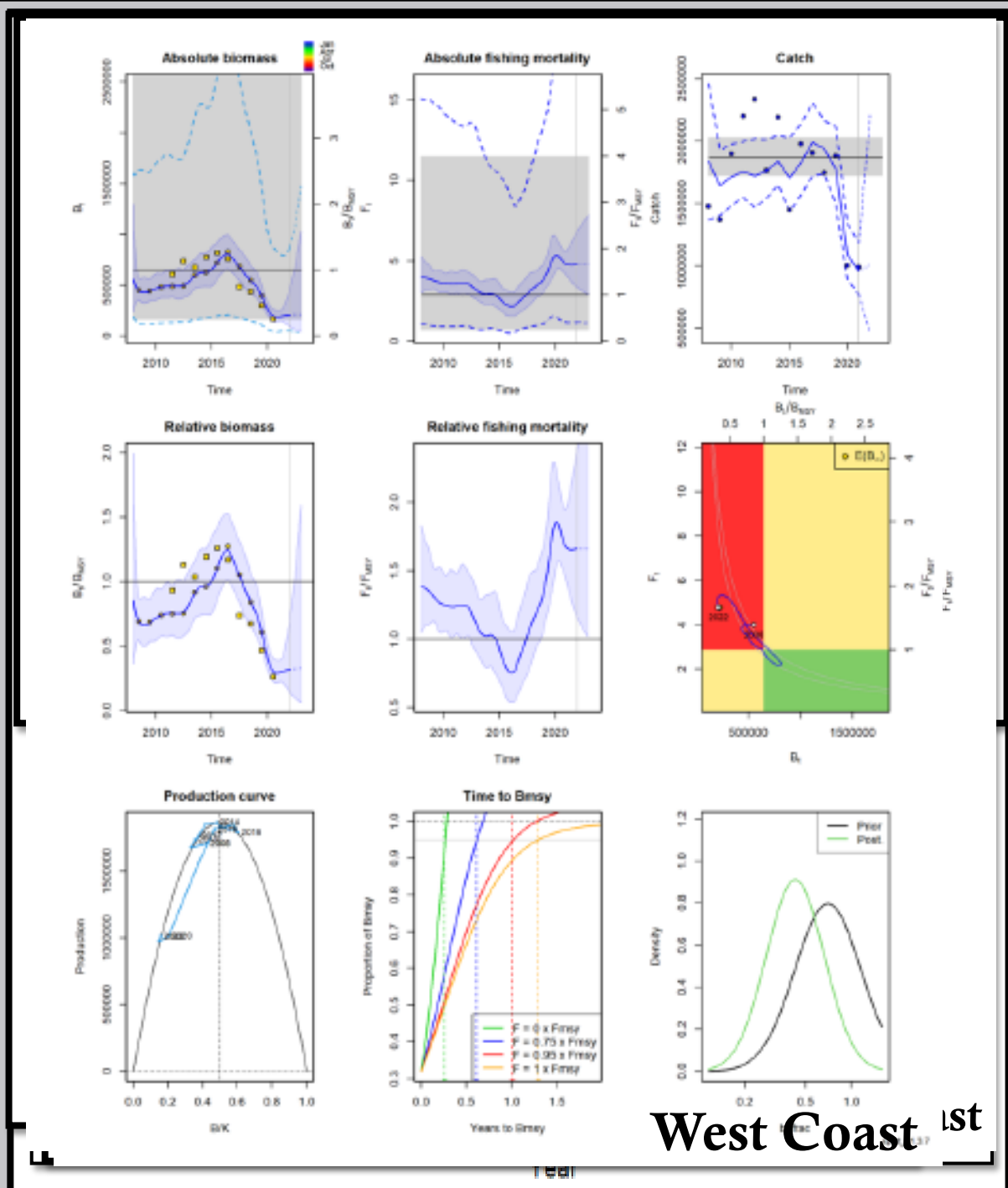
Crab management units

- A brief summary of the assessment across several management units in Europe



Scotland

- Declining landings since mid 2010's
- Not-directed scientific surveys. **Scallop trawl and dredge surveys.**
- Length Cohort Analysis (LCA) and Yield-Per-Recruit (YPR). F_{max} as a proxy for F_{msy} .
- LCA suggest a **decrease in F in all areas** in the last assessment period (2016-2019), but most **stocks still above F_{max} .**
- Preliminary SPiCT assessment in the East and West Coast areas.

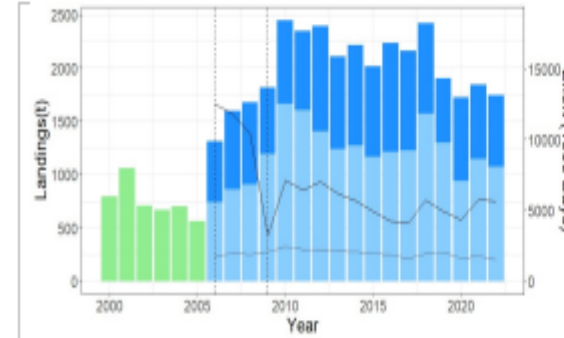


West Coast ^{1st}

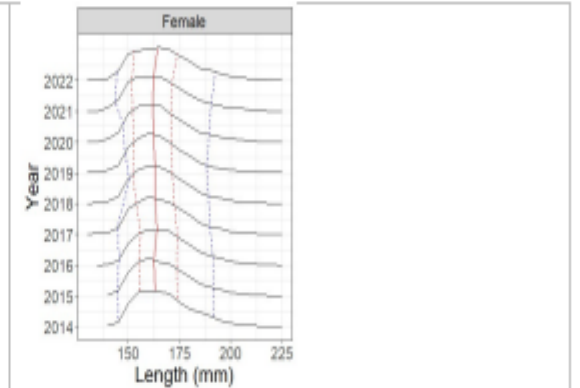
England

- Length Cohort Analysis (LCA) and Yield-Per-Recruit (YPR). 35% SPR as a proxy for MSY and 15% SPR as a risk limit reference point.
- Increasing F in North Sea Areas and decreasing F in the W channel. And the Celtic Sea

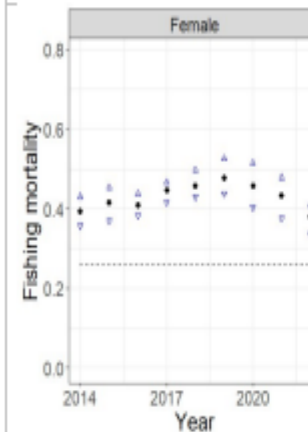
West of England North Sea



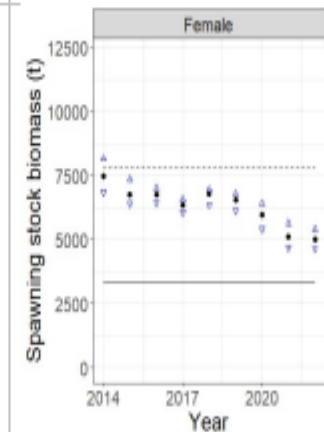
a) Live landings (in tonnes, bars) and effort (days fished, lines) for $\leq 10\text{m}$ fleet (dark blue/solid line) and $> 10\text{m}$ fleet (light blue/dashed line): Note: Changes in recording levels in 2006 and 2009



a) Length distributions (running three year average) as used in the assessments. Solid red line represents the median length; blue dashed lines represent 25th and 75th percentiles; red dashed lines represent the 5th and 95th percentiles.



b) Fishing mortality three-year average with FMSY target (35% SPR, dashed) and maximum reference point limit (15% SPR, solid).



c) Spawning stock biomass (three-year average) with MSY target (35% SPR, dashed) and minimum reference point limit (15% SPR, solid).

England

- Length Cohort Analysis (LCA) and Yield-Per-Recruit (YPR). 35% SPR as a proxy for MSY and 15% SPR as a risk limit reference point.
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France-England. W Channel

- Combined assessment from France and England in the W channel using commercial catch size data raised to landings
- Female oriented fishery. Above F_{msy} .
- **Declining biomass** continues up to 2022. French vivier has stopped operating in the W channel for economic viability.



Figure 2.11. Estimated fishing mortality time series for males and females. Dashed line = F_{MSY} target.

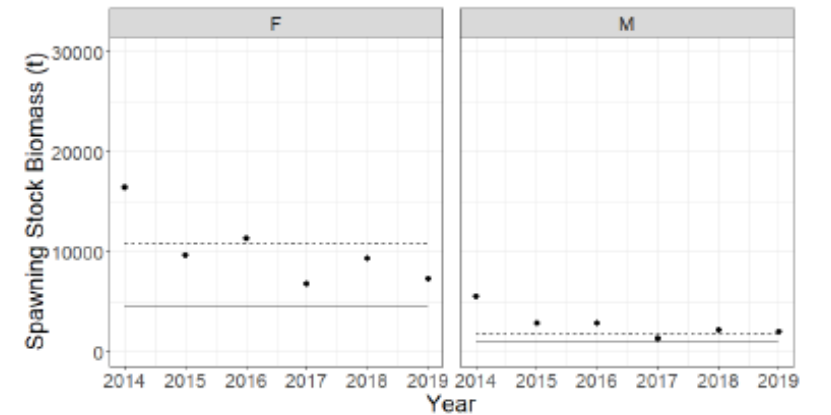


Figure 2.12. Biomass time series with MSY target (dashed) and minimum reference point limit (solid).

Summaries from the UK crab FMP

Region	Stock size 2017	Stock size 2019	Exploitation rate 2017	Exploitation rate 2019
Crab Fishery Units				
Central North Sea	Below MSY. Around minimum reference point limit for males, approaching target for females.	Below MSY. Approaching target for males and above the target for females.	Moderate. Below maximum reference point limit for females, males close to limit.	Moderate. Below maximum reference point limit for females, males are at the limit
Southern North Sea	Below MSY. Around minimum reference point limit for males, approaching target for females.	Below MSY. Between minimum reference point limit and target for males and females.	High. Around the maximum reference point limit for both males and females.	High. Above the maximum reference point limit for males and females.
Eastern English Channel	Unknown	Unknown	Unknown	Unknown
Western English Channel	Near MSY. High, around the level required to achieve MSY for both males and females.	Near MSY. High, around the target level required to achieve MSY for females	Moderate. At a level required to achieve MSY for both males and females.	Moderate. Around target level required to achieve MSY for females.

Summaries from the UK crab FMP

Region	Stock size 2017	Stock size 2019	Exploitation rate 2017	Exploitation rate 2019
Celtic Sea	Below MSY. Below Maximum Sustainable Yield level but above minimum reference point limit for females. Unknown for males.	Below MSY. Below Maximum Sustainable Yield level but above minimum reference point limit for females. Unknown for males.	Moderate. Around level generating Maximum Sustainable Yield for females. Unknown for males.	Moderate. Close to target level generating Maximum Sustainable Yield for females. Unknown for males.
Northumberland and Durham	Below minimum ref. Below minimum reference point limit but stable for males and females.	Below minimum ref. Below the minimum reference point limit for females, just above for males	Very high. Beyond maximum reference point limit for both males and females.	High. Around maximum reference point limit for males, above for females.
Yorkshire Humber	Near minimum ref. Around minimum reference point for males and females.	Near minimum ref. Near minimum reference point for males and females.	Very high. Beyond maximum reference point limit for males and females.	High. Above the maximum reference point limit for both males and females.
East Anglia	Unknown, catch rates are fairly stable.	Below minimum ref. Low, below minimum reference point for males and females	Unknown	High. Above minimum reference point for males and female.

France

- No assessment (except W Channel). Status assessed based on standardized LPUE from daily catch and effort logbooks.
- Declining landings
- Declining trends in LPUE across areas. More abrupt since 2014.
- Raw LPUE from offshore vivier boats show a declining trends in LPUE since 2017.

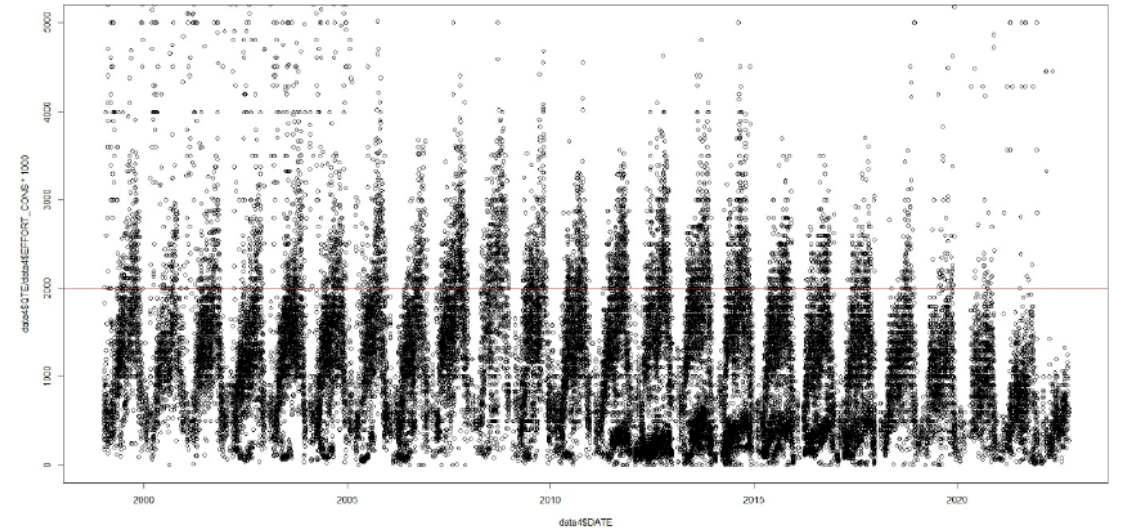


Figure 1.23 : Time series of daily LPUE from the offpotters in Western English Channel and Bay of Biscay.

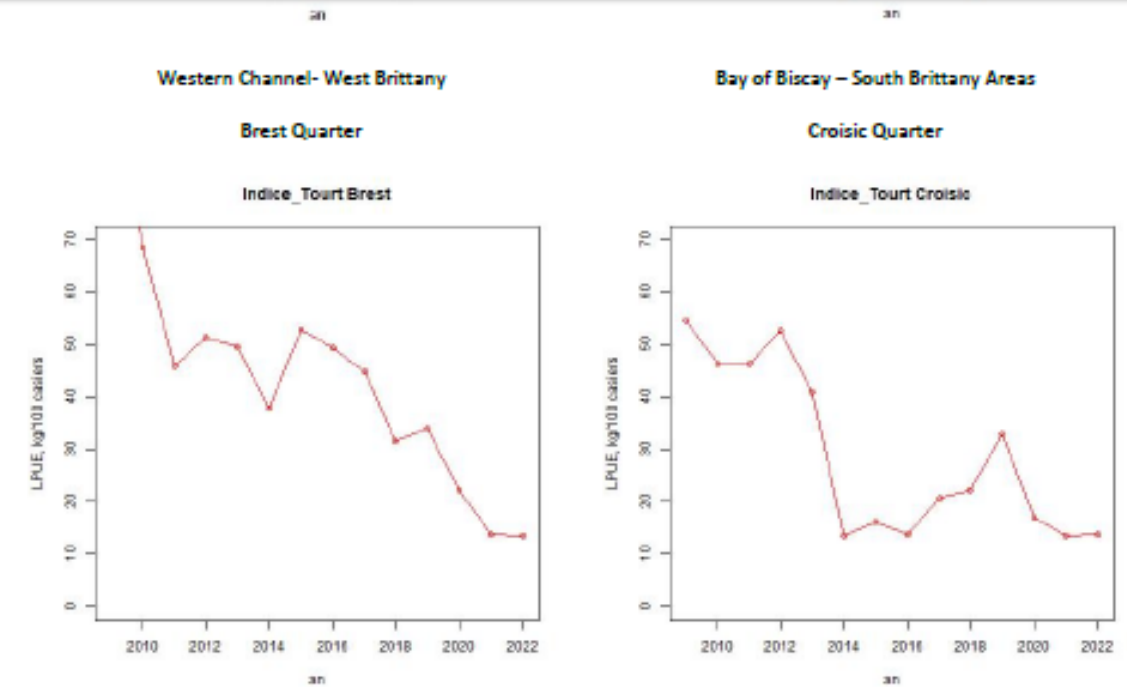


Figure 1.22. LPUE index trend in different areas from coastal vessels.

Northern Ireland

- No assessment. Status assessed based on standardized LPUE from daily catch and effort logbooks.
- Declining trends in LPUE in most of the ICES rectangles

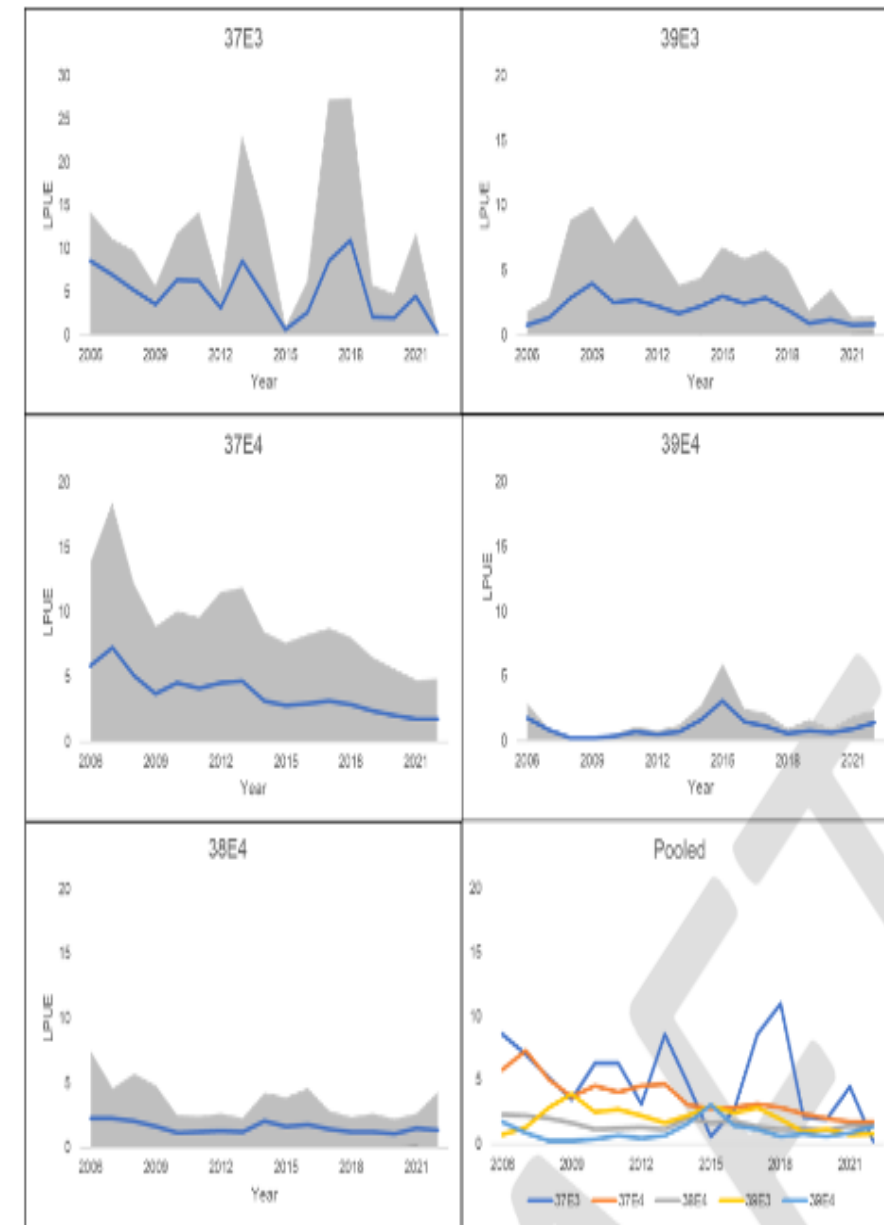


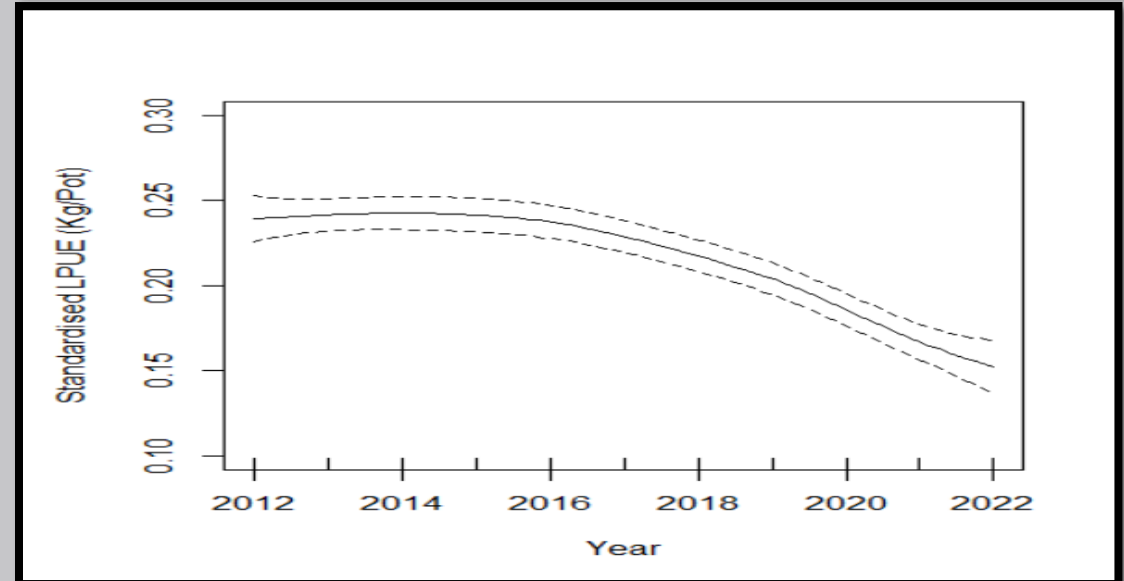
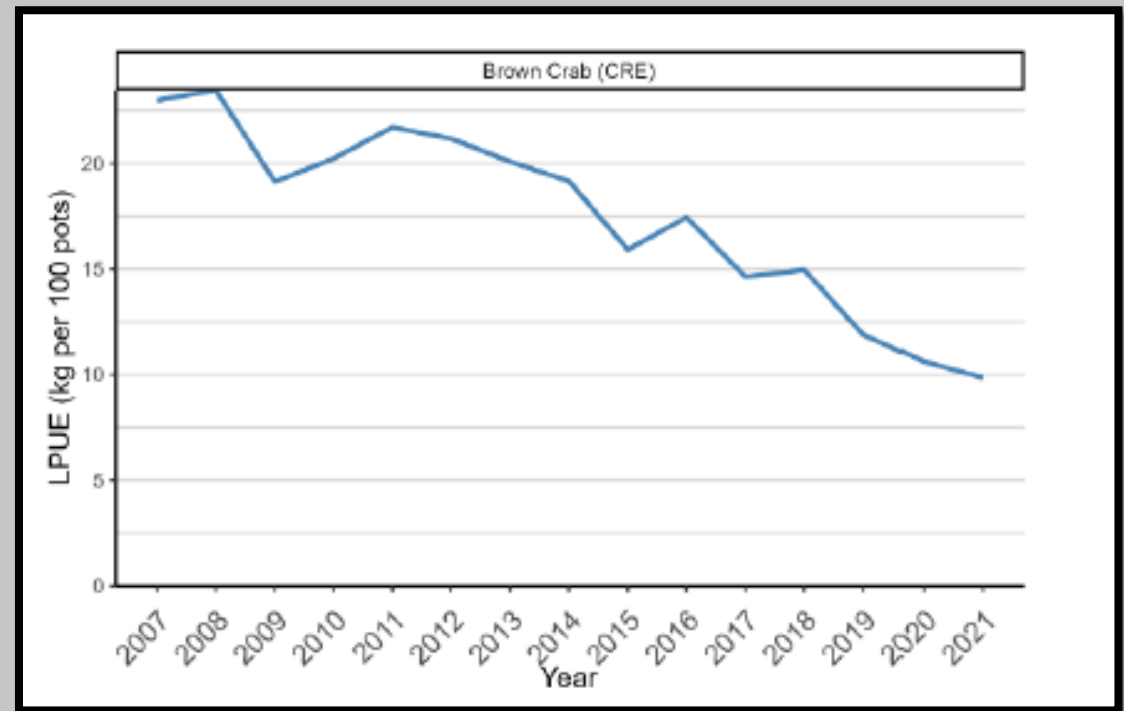
Figure 10. LPUE for brown crab by ICES rectangle. Note the vertical axis for 37E3 is different than the others due to the higher variability in LPUE.

Jersey

- No assessment. Status assessed based on standardized LPUE from daily catch and effort logbooks.
- Declining trends in LPUE since 2012. Lowest in 2021.

Isle of Man

- No assessment. Status assessed based on standardized LPUE from daily catch and effort logbooks.
- Slight decline in standardized LPUE from daily catch and effort logbooks.



Norway

- No assessment. Status assessed based on LPUE from reference fishery.
- Two most important regions (Helgeland and Midt-Norge) show **stable or increasing trends**.
- Landings have remained stable

Sweden

- No assessment.
- **Increasing landings reported**
- **LPUE** from logbooks (19% coverage) shows **increasing LPUE's since 2016**

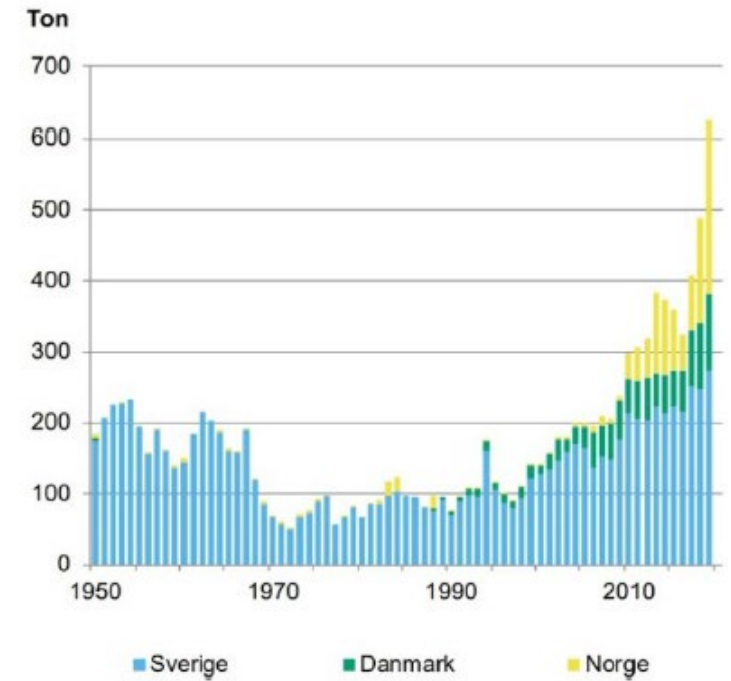


Figure 1.31. Commercial landings of brown crab, 1950 - 2021 for Sweden, Denmark and Norway.

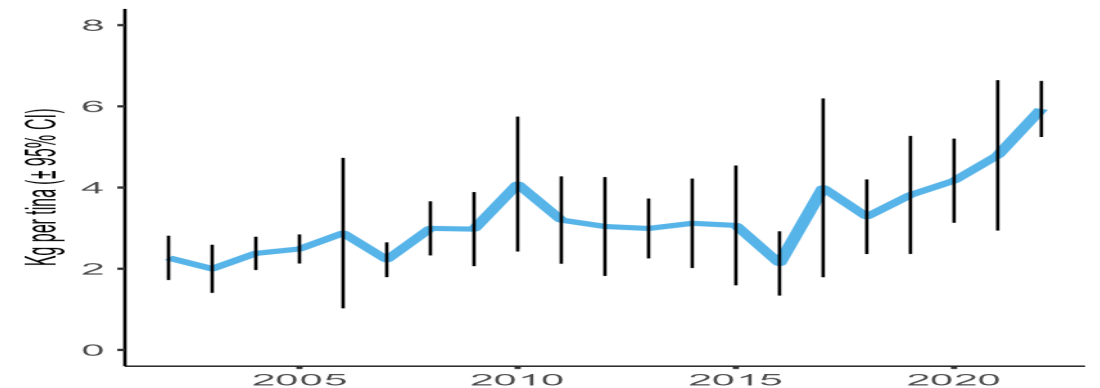


Figure 1.33. Catch per effort (kg per crab tin) in the Swedish commercial fishery during the high season (June–November) 2006–2021. Error bars are 95 percent confidence intervals.