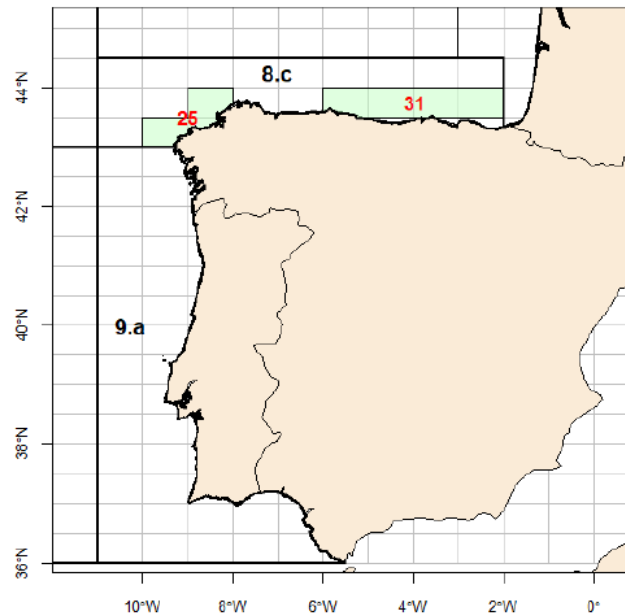


Current state of Nephrops reference points: ICES division 8c

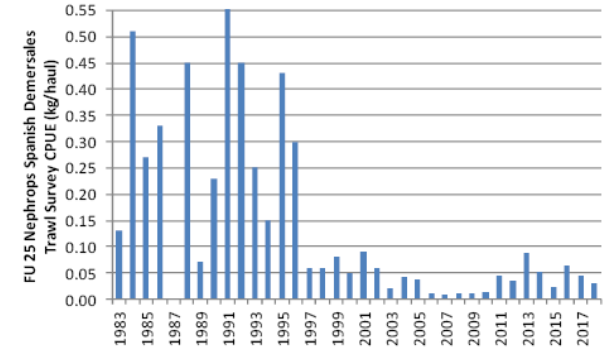
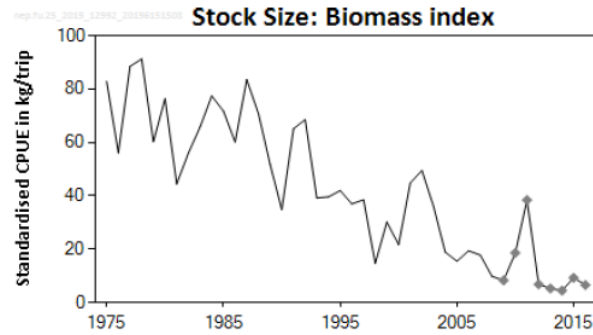
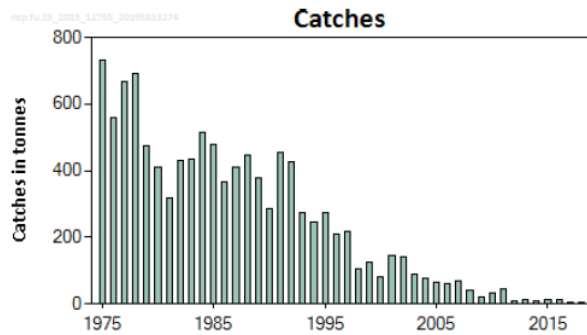
I. González Herraiz

FU 25 North Galicia



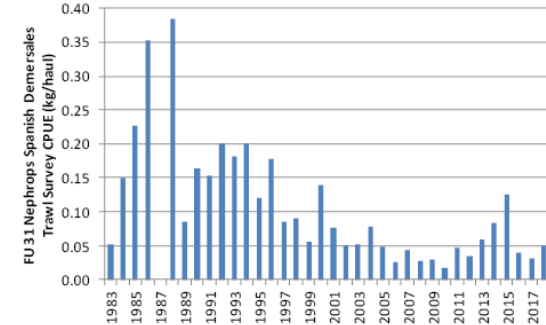
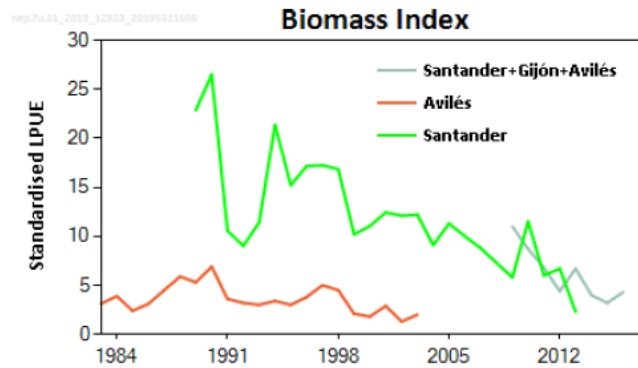
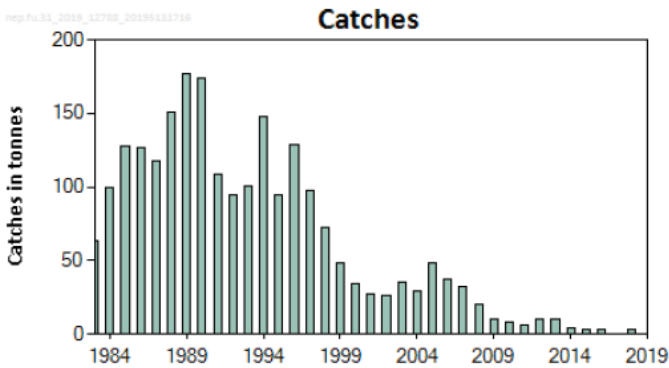
FU 31 Cantabrian Sea

FU 25 North Galicia



Stocks status **undesirable** with extremely low biomass. TAC 0

FU 31 Cantabrian Sea



Data available

FU 25 North Galicia

Landings (≥ 1975), CPUE (≥ 1986), length distributions, mean length and sex ratio (≥ 1982)

Trawl survey (kg/haul) (≥ 1983)

Length at maturity

Sentinel fishery (2017-2019)

In 2007 62 t : analytical assessment (XSA) stopped

Proxies of MSY ref.points in WKLIFE V and WKProxy 2015. $F_{0.1}$ for 1982-2014 = 0.17.

FU 31 Cantabrian Sea

Landings (≥ 1983), CPUE (≥ 1989), length distributions, mean length and sex ratio (≥ 1988)

Trawl survey (kg/haul) (≥ 1983)

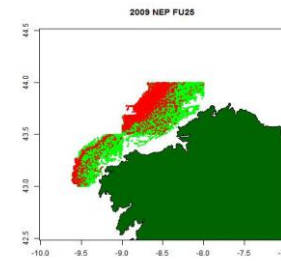
Length at maturity

Sentinel fishery (2019)

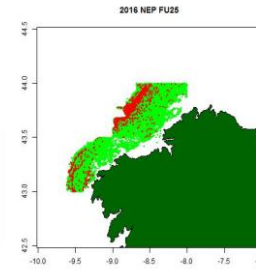
In 2003 : analytical assessment (XSA) stopped

Proxies of MSY ref.points in WKLIFE V and WKProxy 2015. $F_{0.1}$ for 1982-2014 = 0.28 males and 0.47 females.

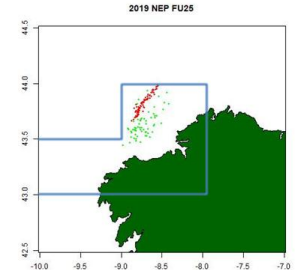
FU 25 North Galicia



2009



2016



2019

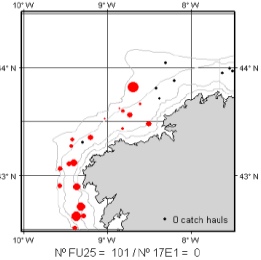
1983- 1996

1997- 2008

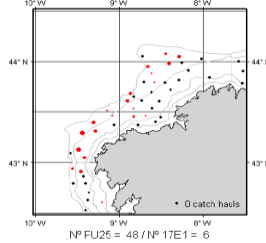
>=2003

>=2009

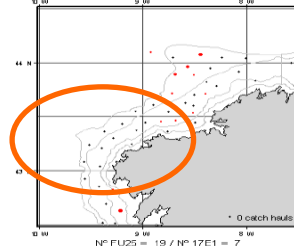
1983



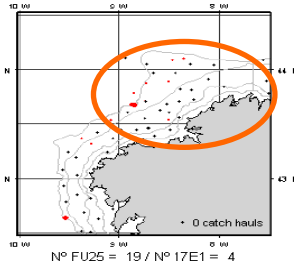
1997



2003



2009



Contraction? Analysis: CPUE average and % catch by decimal of degree and year and stock area by year.

FU 31 Cantabrian Sea

Tried:

- SCA (Separable Cohort Analysis, Bell)
- SCA (Helen)
- Farfish Data limited tool
- LBI (Length based indicators)
- LB-SPR (Length Base Spawning Per Recruit)

Would like:

- Mean length based estimators (Z)
- SPICTs
- ?

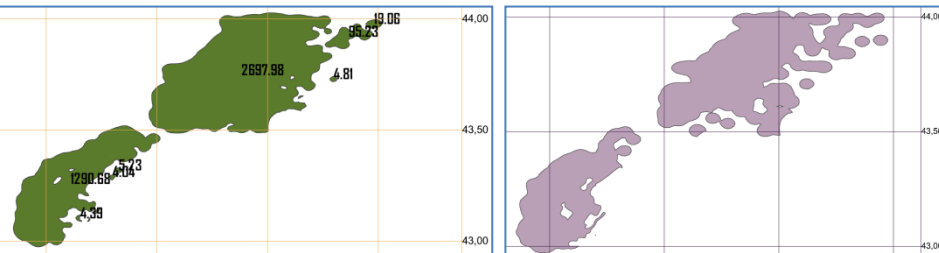
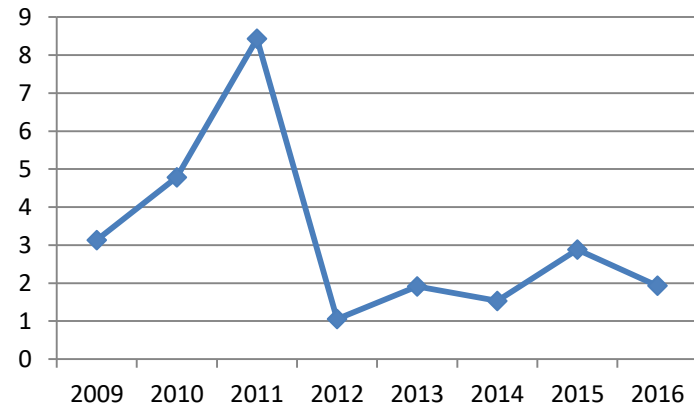
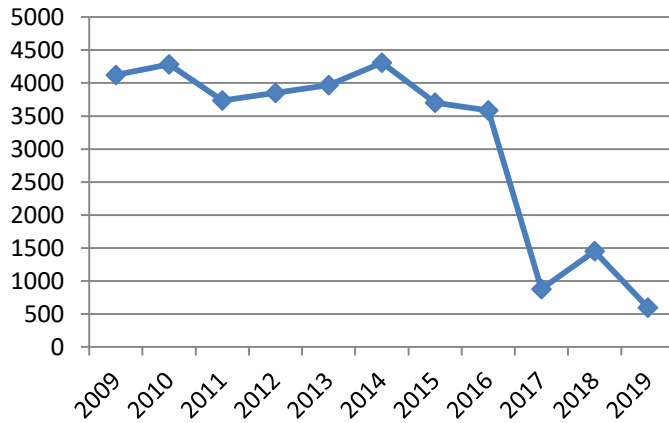
FU 25 North Galicia

Contraction?

Analysis:

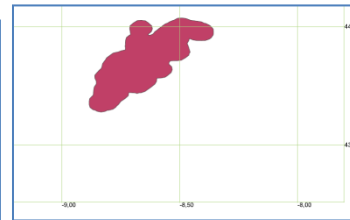
stock area by year.

Criterion: presence/absence

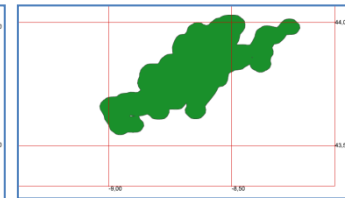


2009

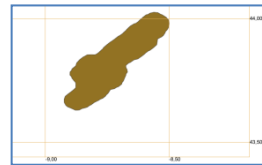
2016



2017



2018



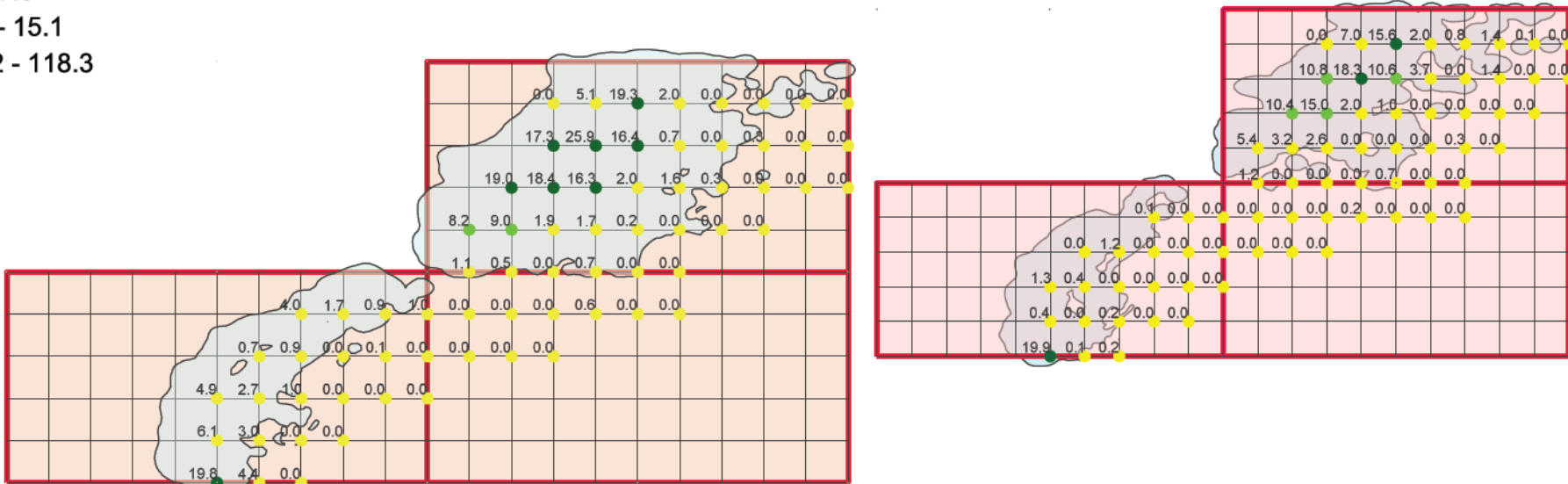
2019

FU 25 North Galicia

Contraction? Analysis: CPUE average and by decimal of degree and year

- 2009 CPUE
- .0 - 7.5
 - 7.6 - 15.1
 - 15.2 - 118.3

- 2016 CPUE
- .0 - 7.5
 - 7.6 - 15.1
 - 15.2 - 118.3

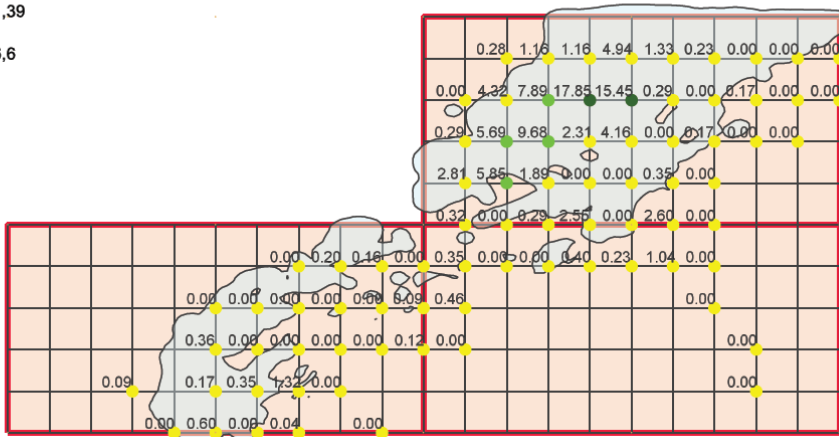


FU 25 North Galicia

Contraction? Analysis: % catch by decimal of degree and year

Fu25 Porcentaje Kg_2013

- 0 - 5,64
- 5,65 - 11,39
- 11,4 - 26,6



2016 Porcentaje KG

- .0 - 5.64
- 5.65 - 11.39
- 11.4 - 26.6

