

ShARed Governance of Sustainable fisheries and aquaculture activities as leverage to protect marine resources in the Adriatic sea

WP3– Governance framework

D3.1.3 Application document as output from the assessments resulting from D3.2.7

DISPLACE model results

*How different fishery methods and linked management measures
interfere each other both at biological and socio-economic level*

Project acronym: ARGOS

Project ID number: 10255153

Project title: ShARed GOVERNance of Sustainable fisheries and aquaculture activities as leverage to protect marine resources in the Adriatic Sea

Priority Axis: Environment and cultural heritage

Specific Objective: 3.2 - Contribute to protect and restore biodiversity

Work Package: WP 3 - Governance framework

Activity: 3.2 - Maritime Spatial Planning assessment

Partner in charge: P12 CNR IRBIM

Partner involved: all project partners

URL: <https://www.italy-croatia.eu/argos>

Status: Final version

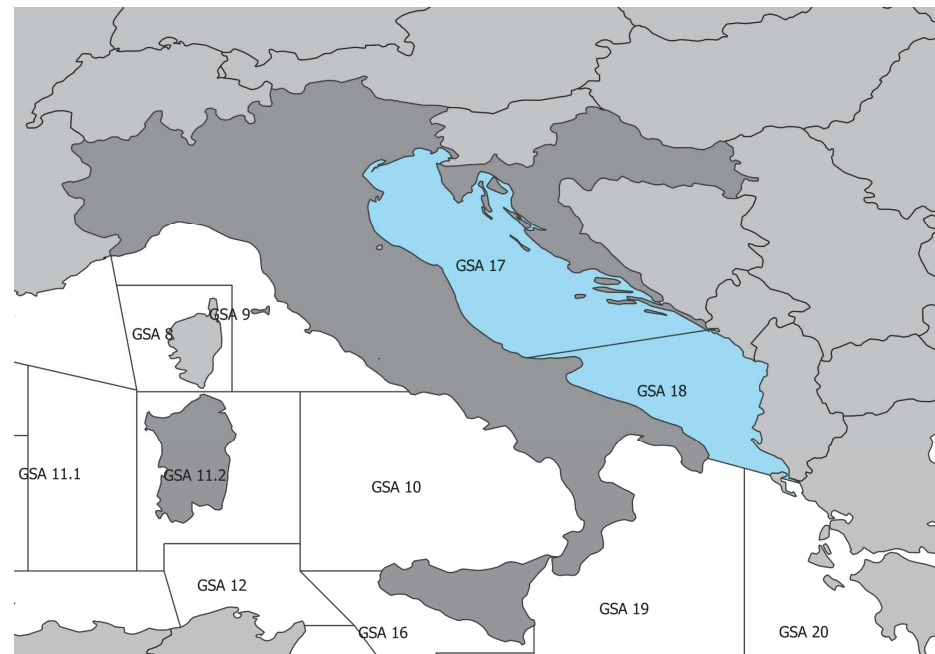
Distribution: Public

Date: June 2023

Case study description

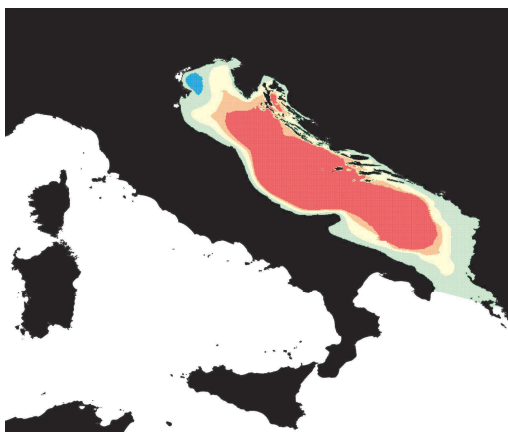
Considering the ARGOS approach:

- Area -> GSA17 + GSA18 (Adriatic Sea)
- Nations actively involved -> Italy and Croatia (other countries included but not modelled as vessels)
- Fisheries modelled -> OTB (pomo/non pomo), TBB, PS, PTM, SSF (gillnetters small/big) **tot=7**
- Species included -> Hake, Sole, Red mullet, Caramote prawn, Mantis shrimp
Anchovy, Sardine **tot=7**



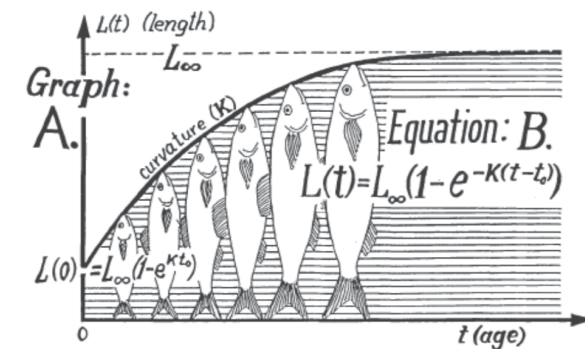
Input data: POPULATIONS

Stock status and biological information on growth derived from official stock assessments (Ref.y. between 2019 and 2021)



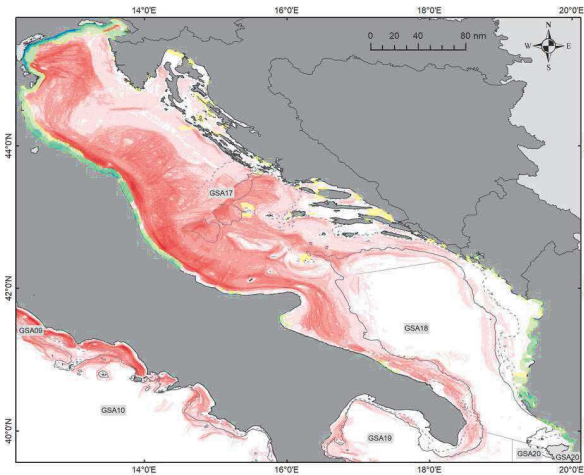
Survey data (2015-2020) averaged to create distribution maps through models MEDITS, MEDIAS, SoleMon depending on the species domain

Commercial data (landings and prices) collected by official national statistics



Input data: FISHERIES

Number of fishing vessels per harbour derived from logbooks (ITA) and STECF Fleet Register (HRV, excluded boats <5m)



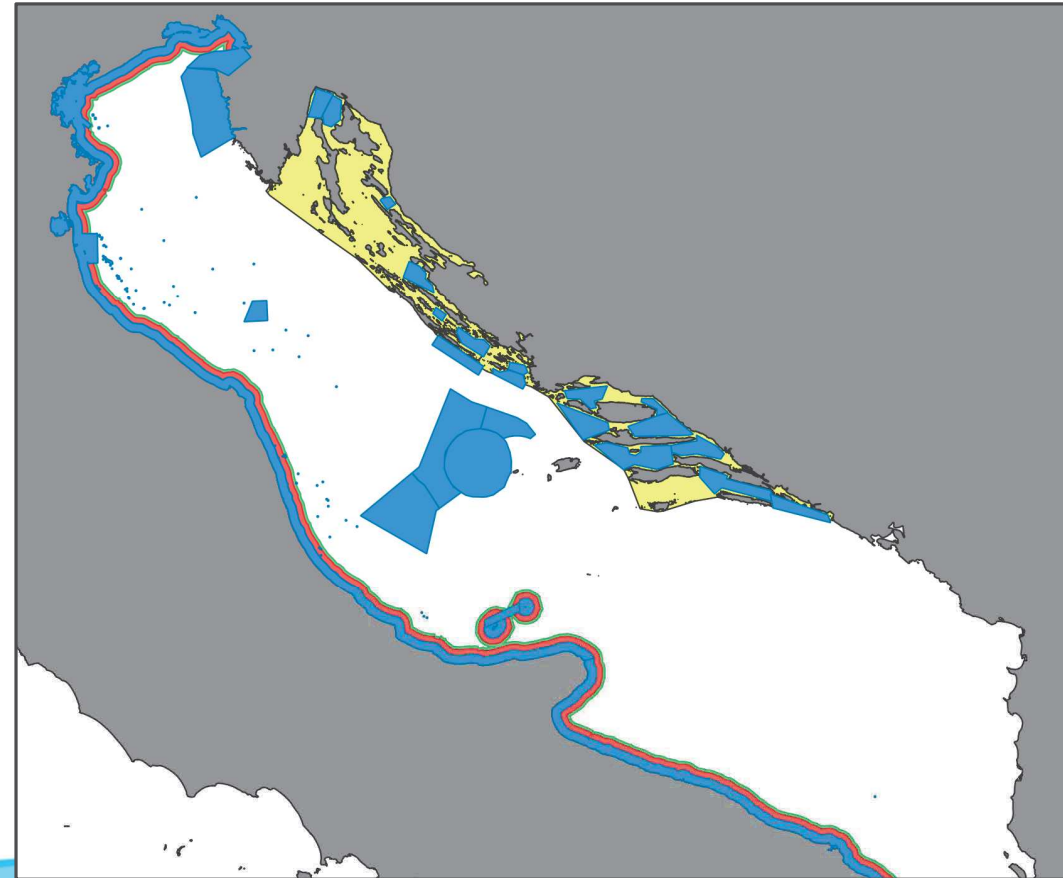
Fishing effort distribution maps by AIS data and participatory mapping work for SSF

Gear and vessel configuration parameters derived from many different scientific studies (e.g. net opening, storage capacity, speed, working hours, fuel consumption, etc.)



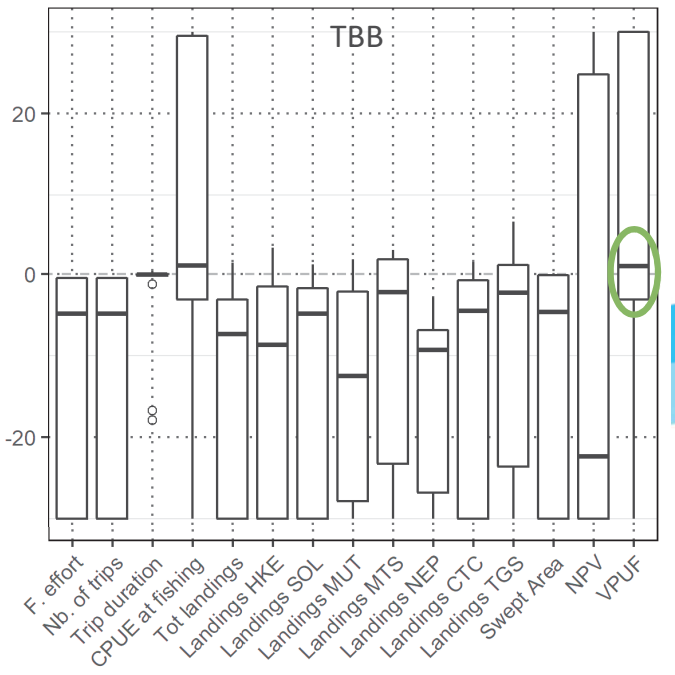
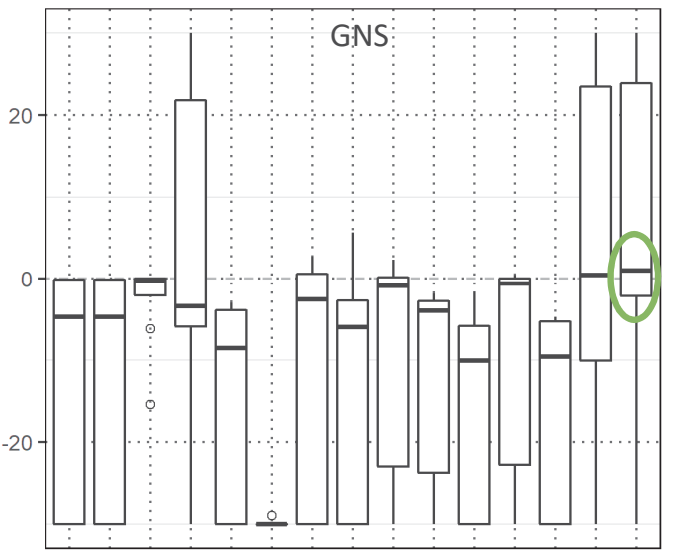
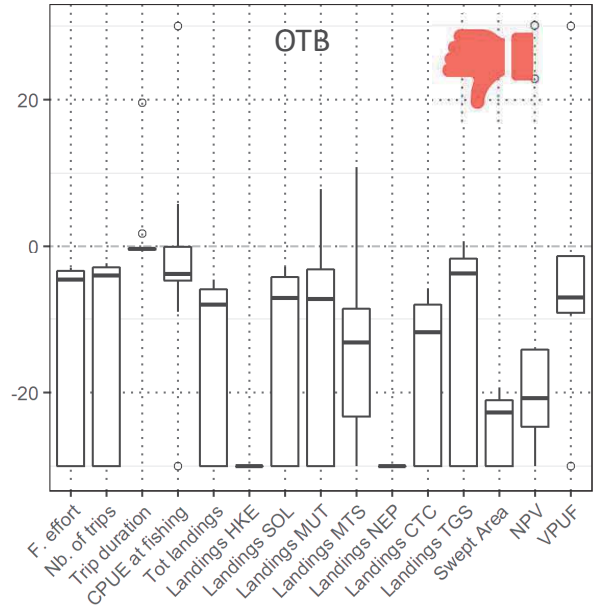
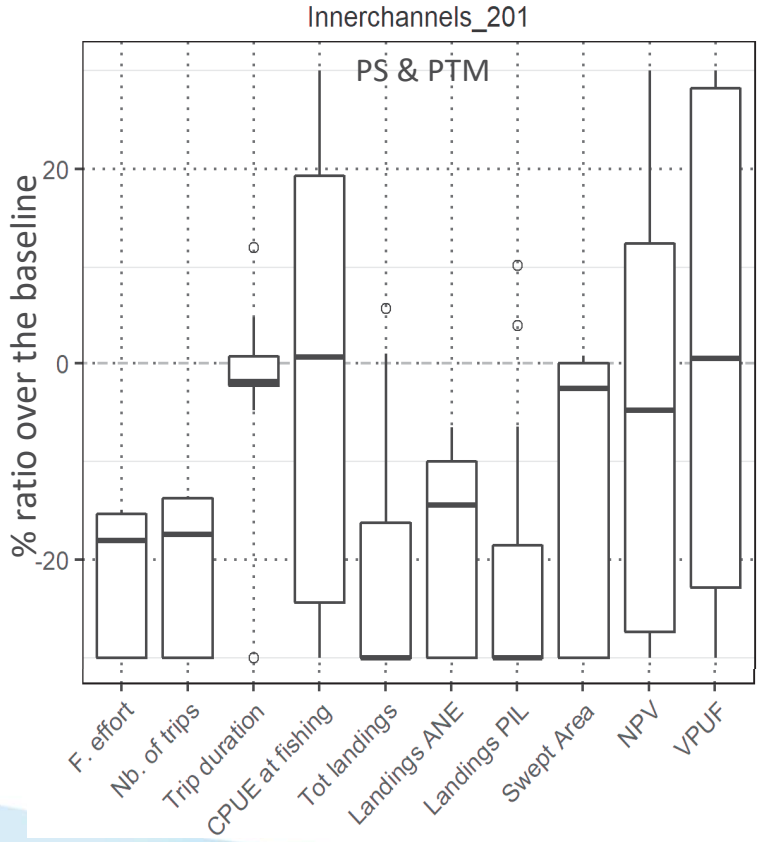
Selected scenarios to be tested:

- **Status quo: baseline**
- **Spatial closure of Croatian inner sea (channels) to PS**
- **6nm closed to italian trawlers all year long**
- **Gradual return to 3nm after italian summer fishing ban**
40d 6nm -> 30d 5nm -> 30d 4nm -> normal 3nm
- **TAC for small pelagics**



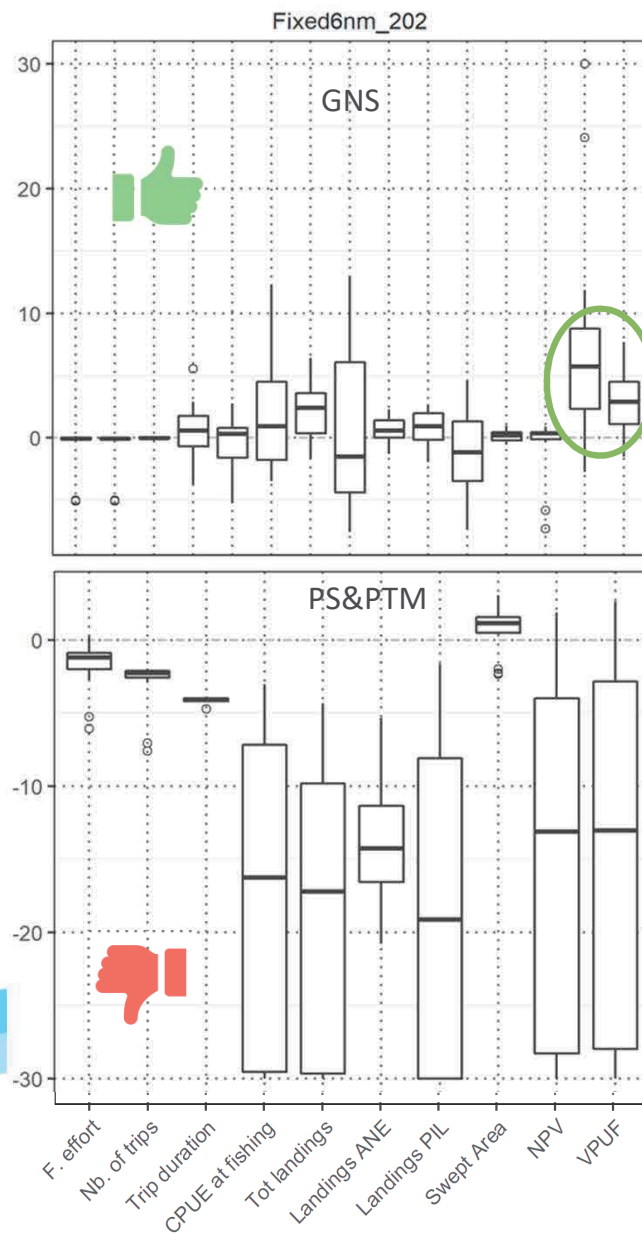
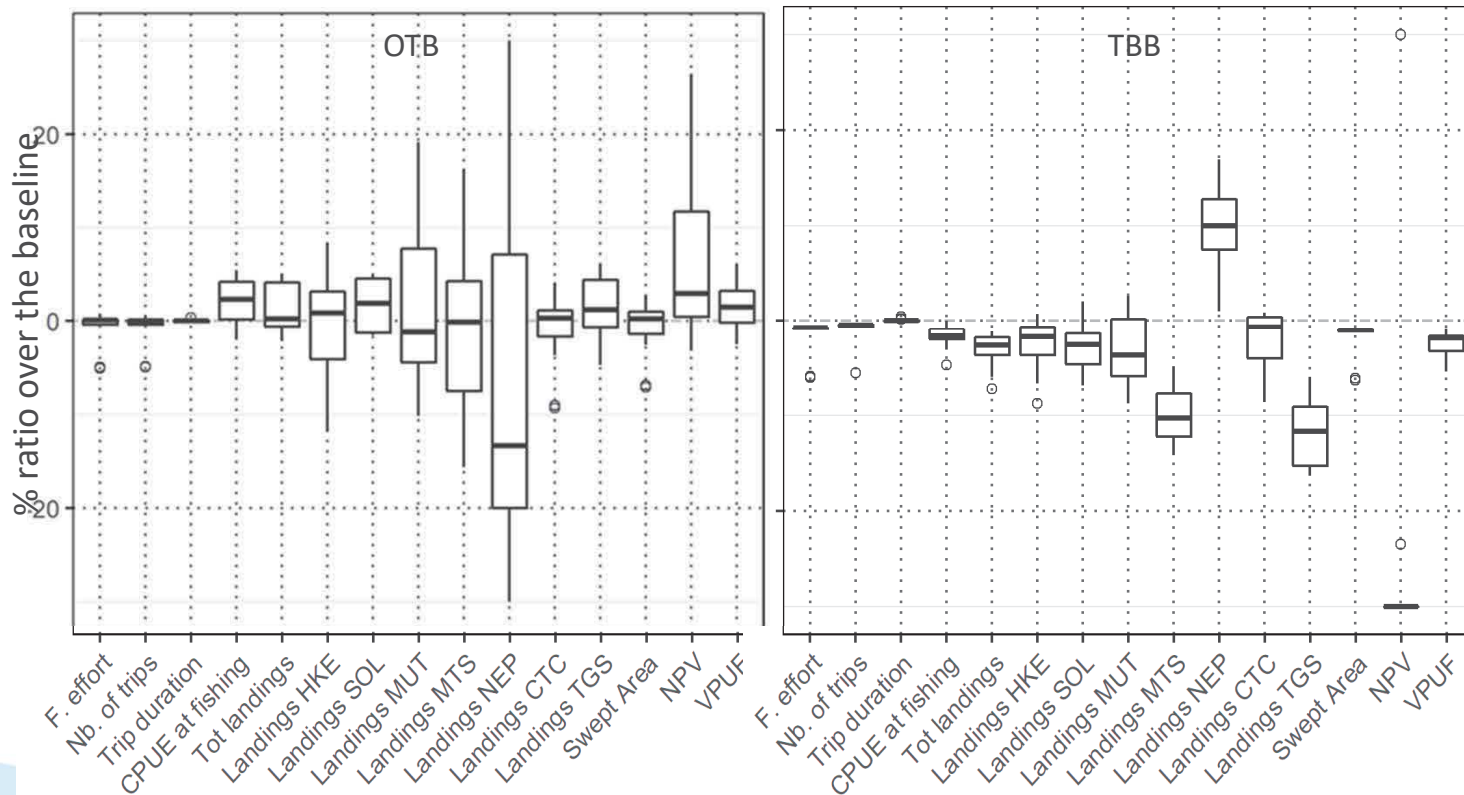
Results

Closure Croatian Inner channels



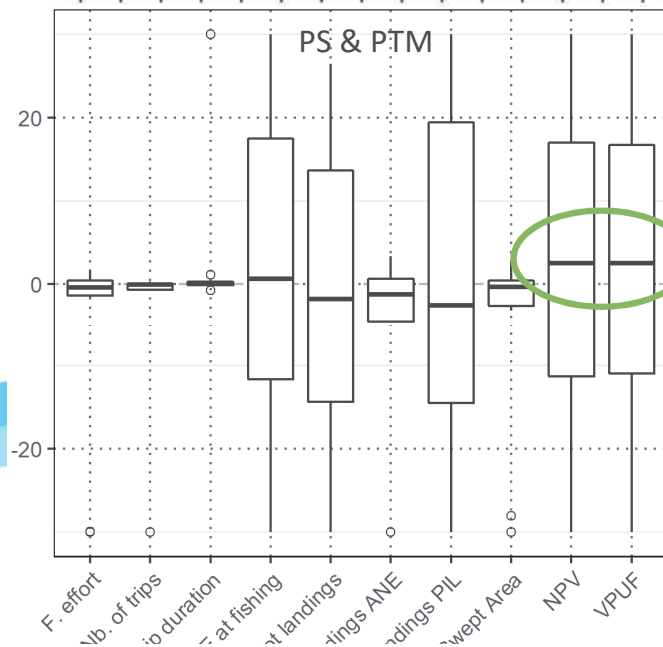
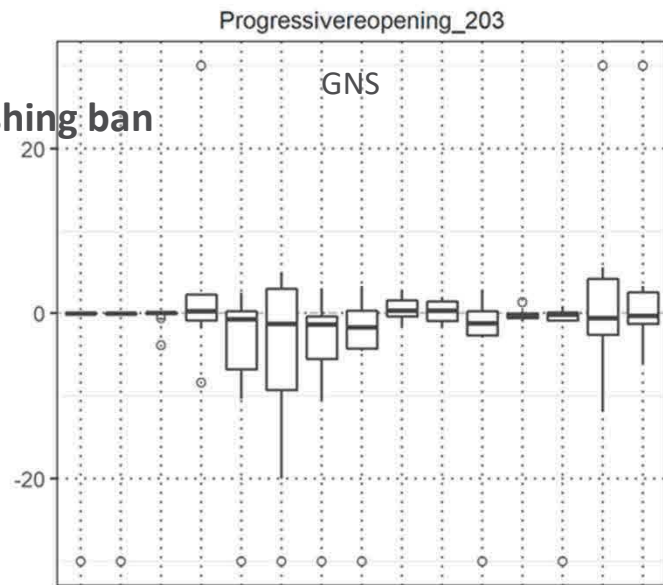
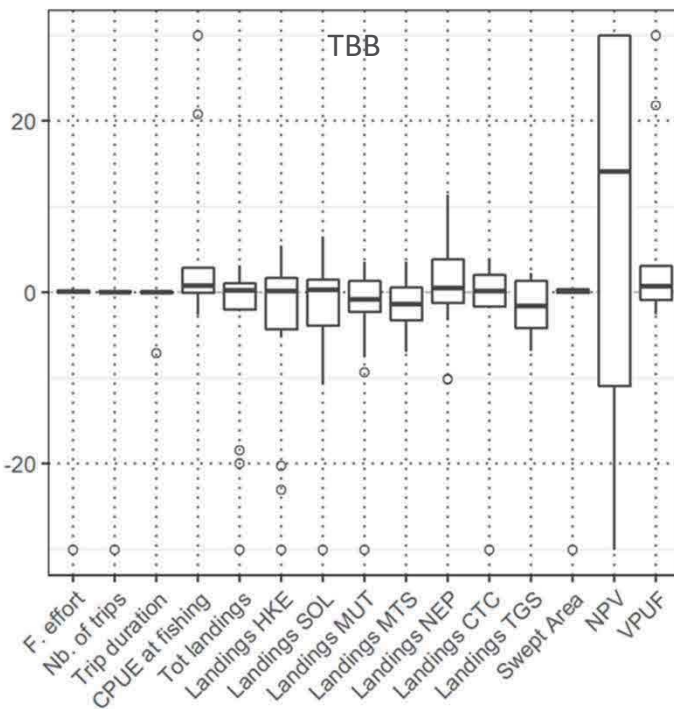
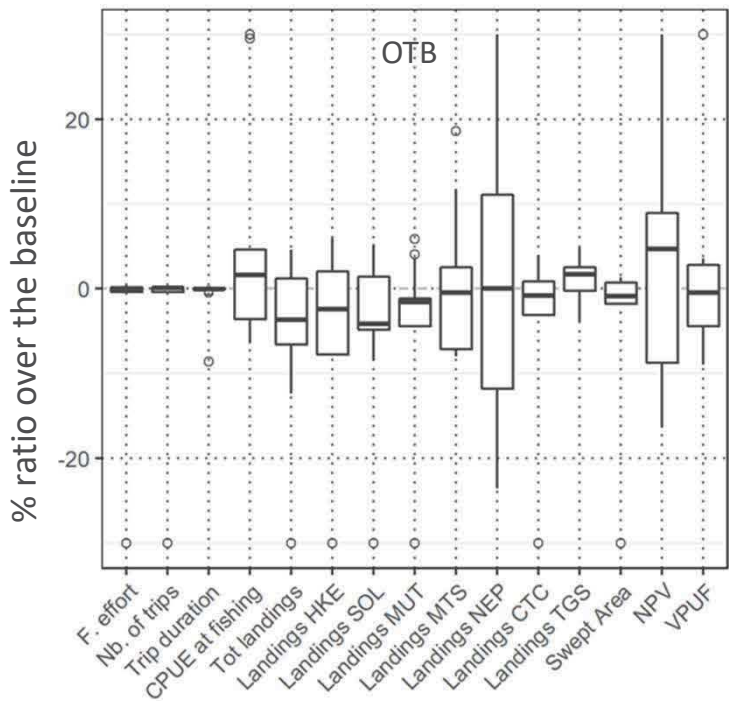
Results

6nm closed to Italian trawlers all year long



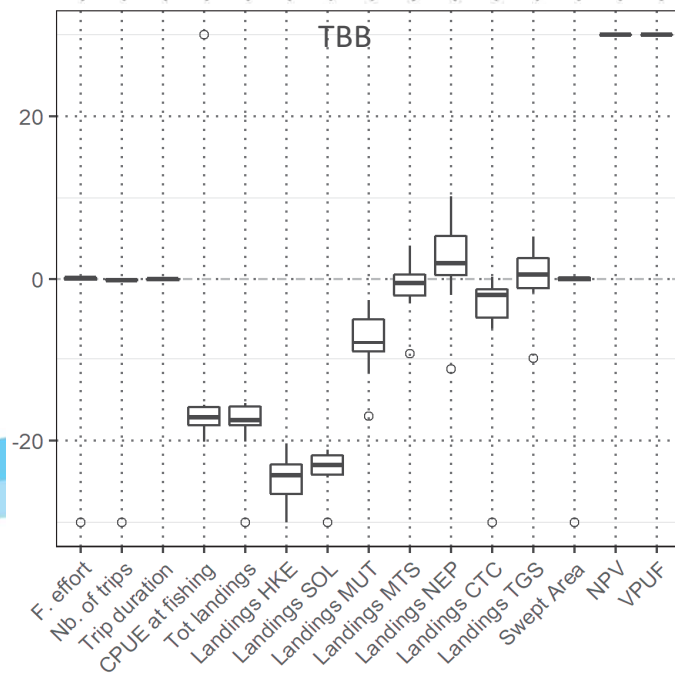
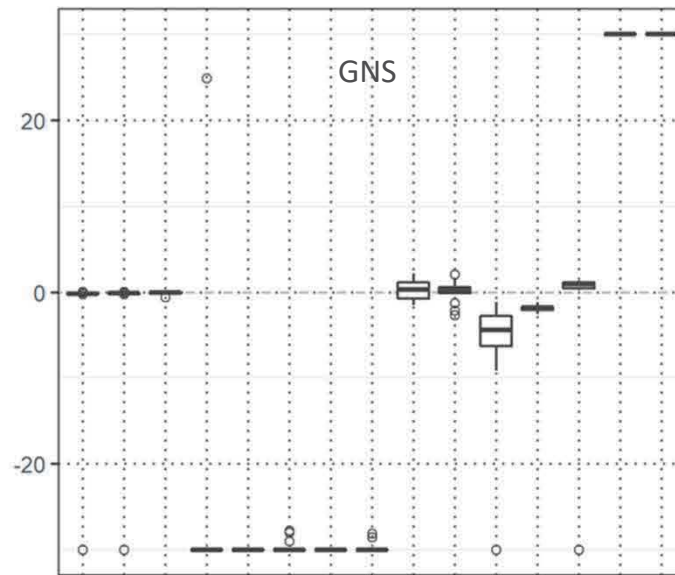
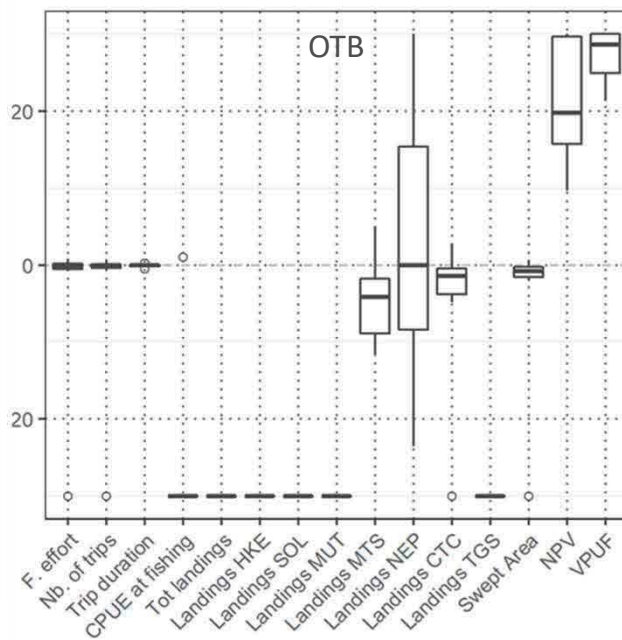
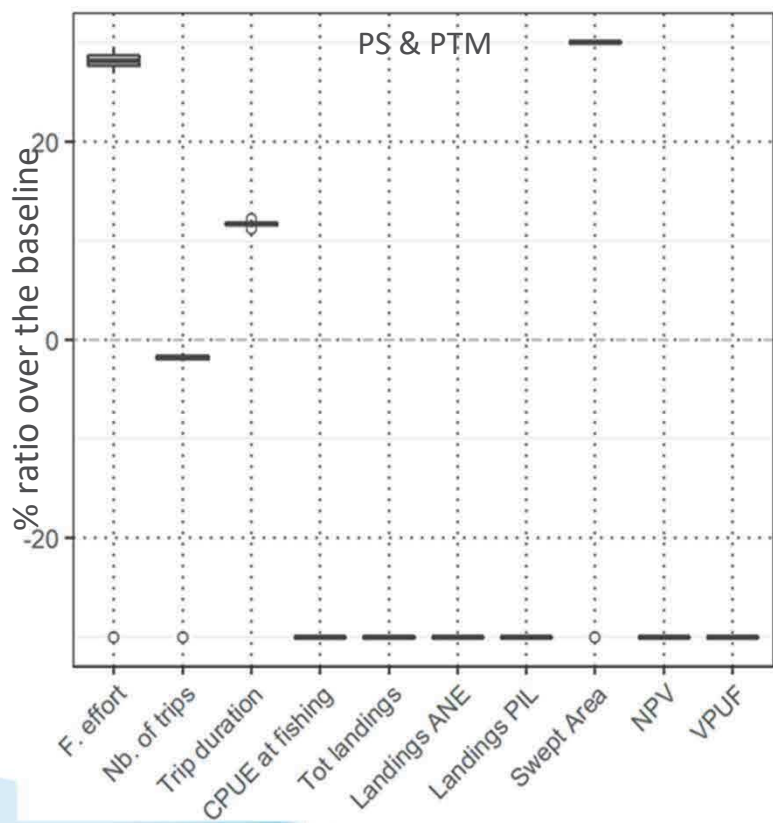
Results

Gradual return to fish at 3nm after Italian summer fishing ban



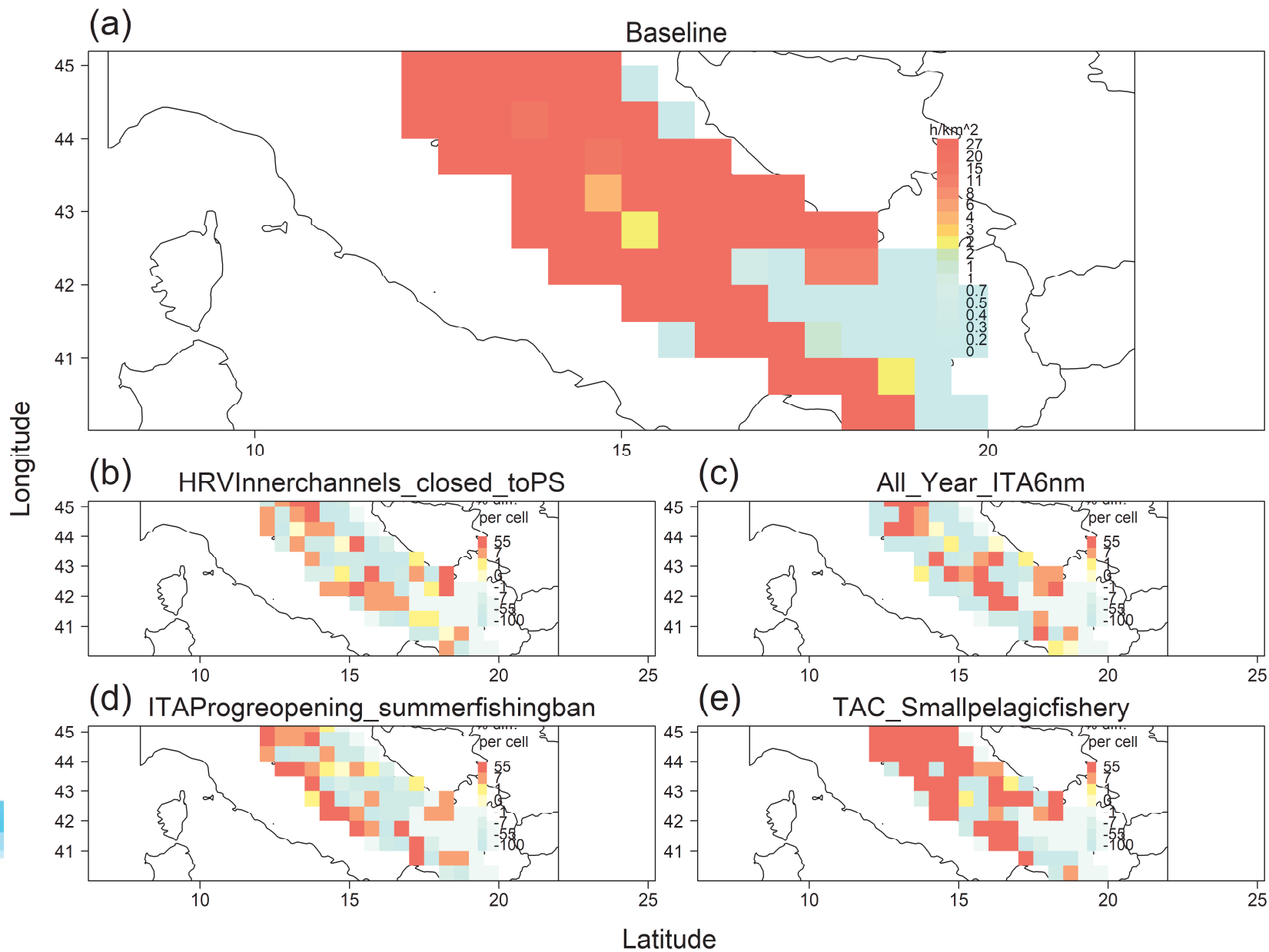
Results

TAC on small pelagics



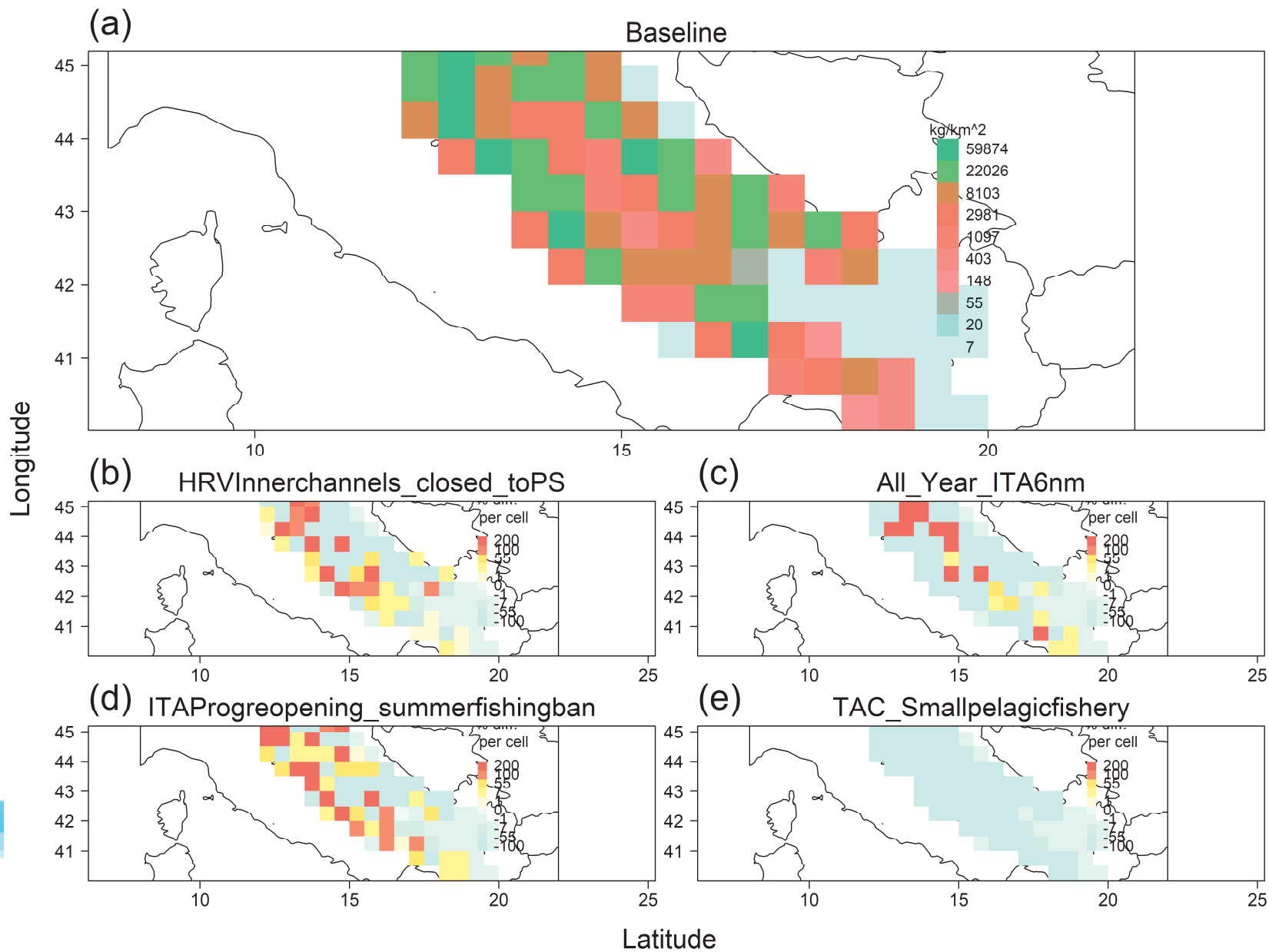
Results

Cumulative fishing effort



Results

Cumulative catches



Conclusion

- Different management measure interfere each other
- Spatial restrictions are suggested
- They protect species in sensible life stages
- Their positive effects could be measured in more than 10 years time frame