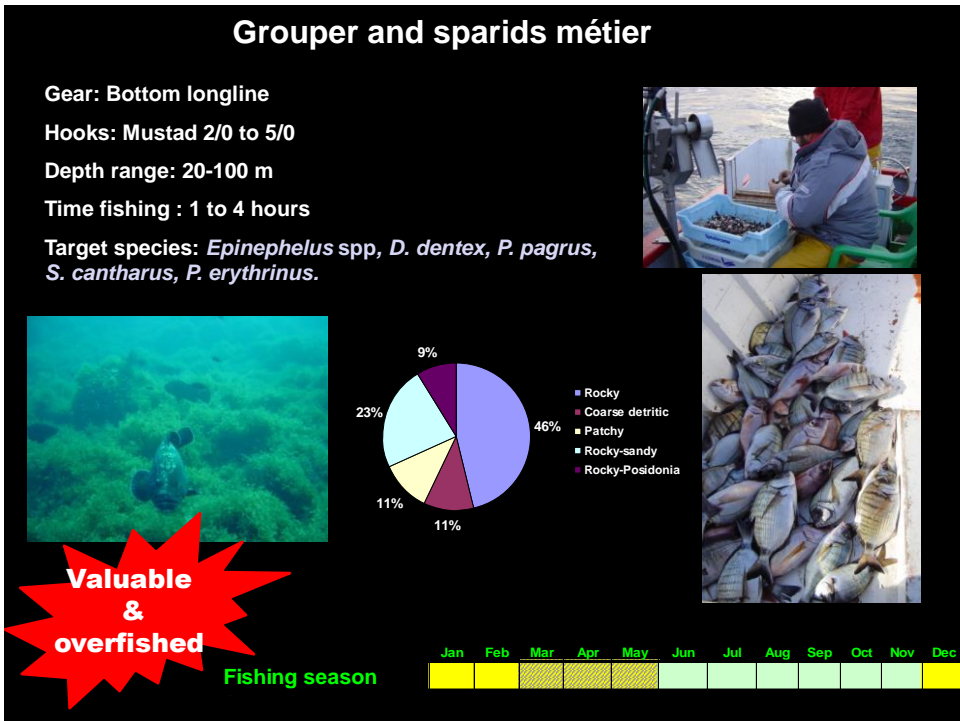
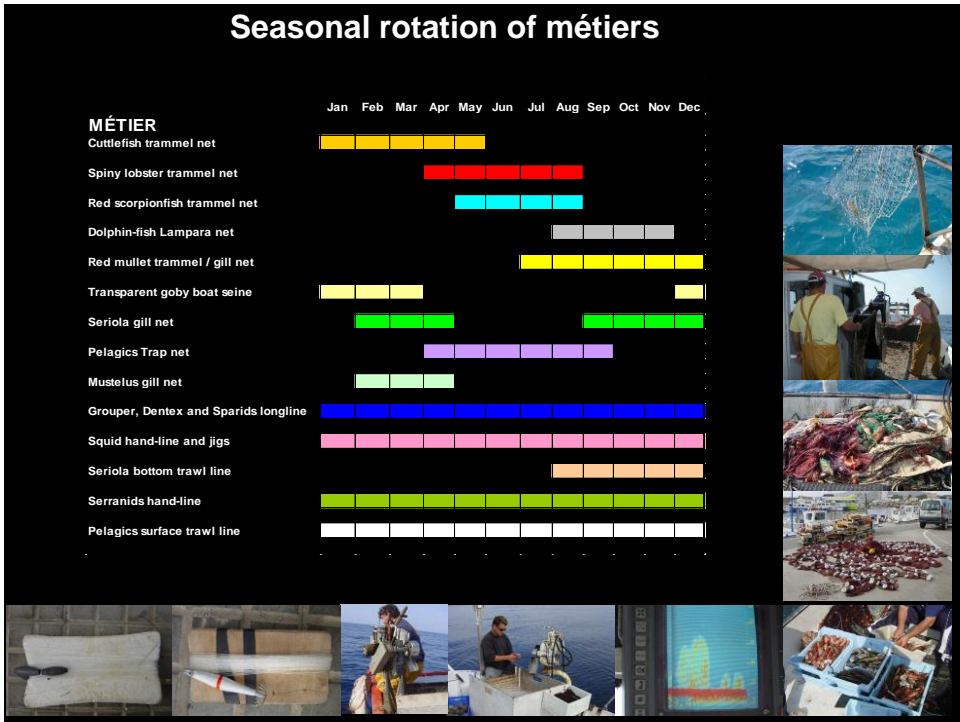


Artisanal fisheries and MPAs in the Spanish Mediterranean

Raquel Goñi, Sandra Mallo, David Díaz & Federico Alvarez

Spanish Institute of Oceanography
Balearic Is. Center, SPAIN





Spiny lobster métier

Gear: Trammel net

Inner mesh size: 133 to 160 mm

Depth range: 50-100 m

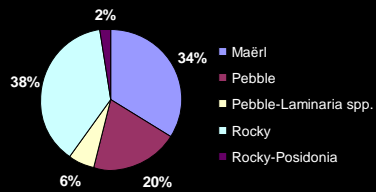
Net soak time: 48 h

Target species: *Palinurus elephas*

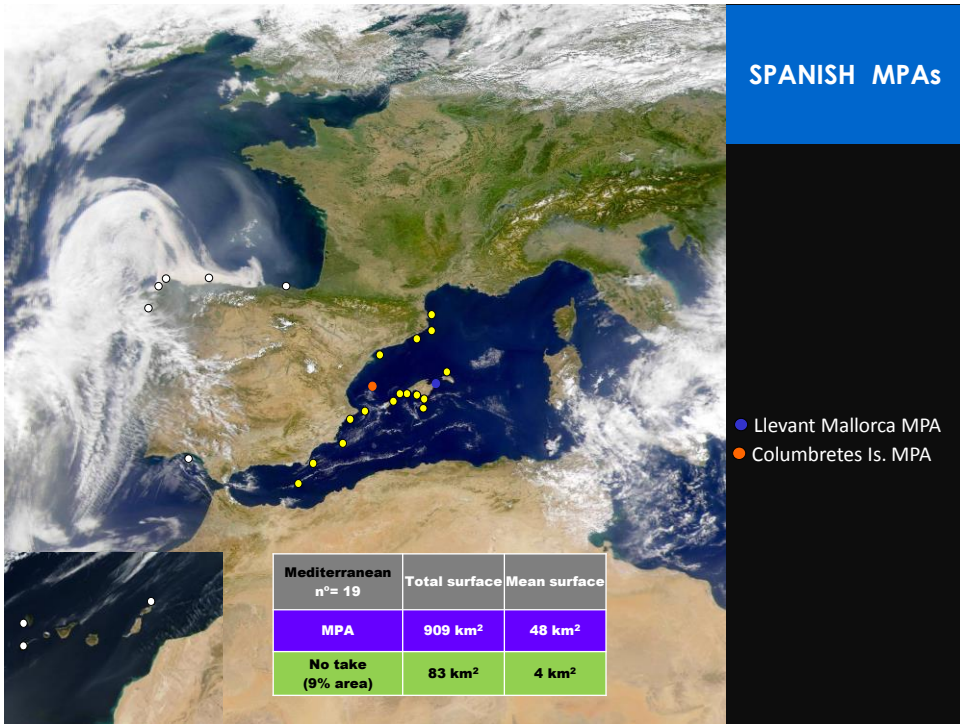


**Valuable
&
overfished**

Fishing season

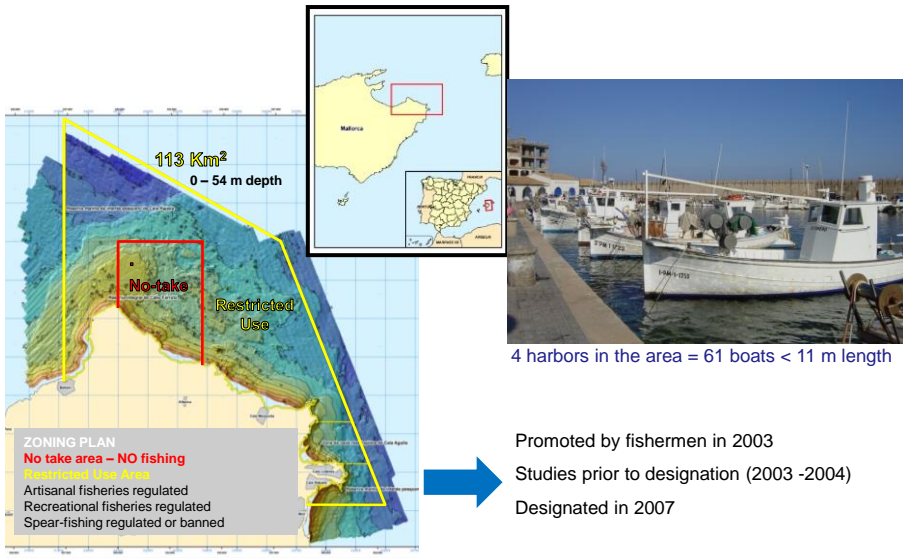


Marine protected areas

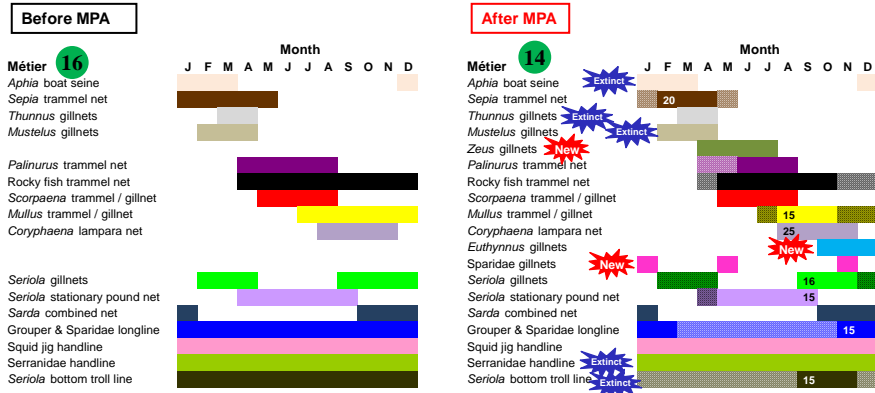


LLEVANT MALLORCA MPA

Artisanal fisheries prior and after the creation of the MPA

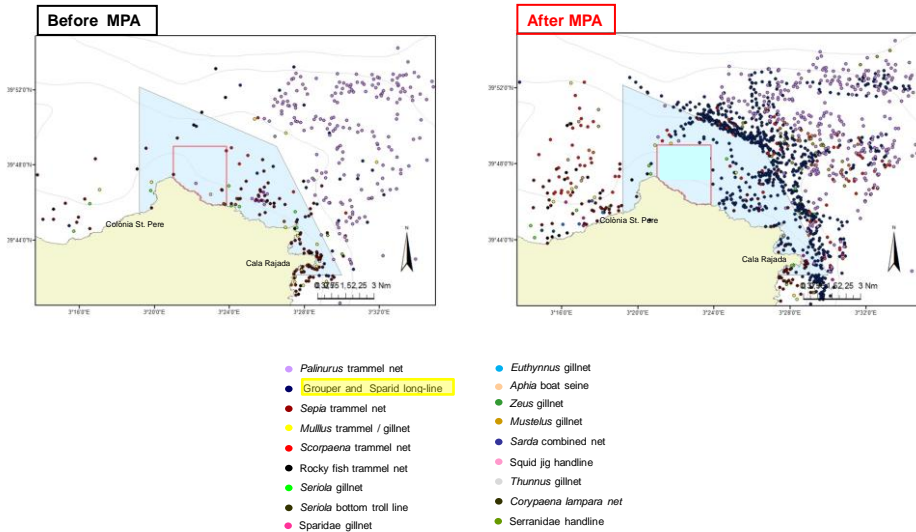


Changes in métiers & seasonal dynamics




Changes in spatial distribution of fishing effort

Grouper and Sparid long-line increase & concentrates along boundary of MPA





COLUMBRETES ISLANDS MPA

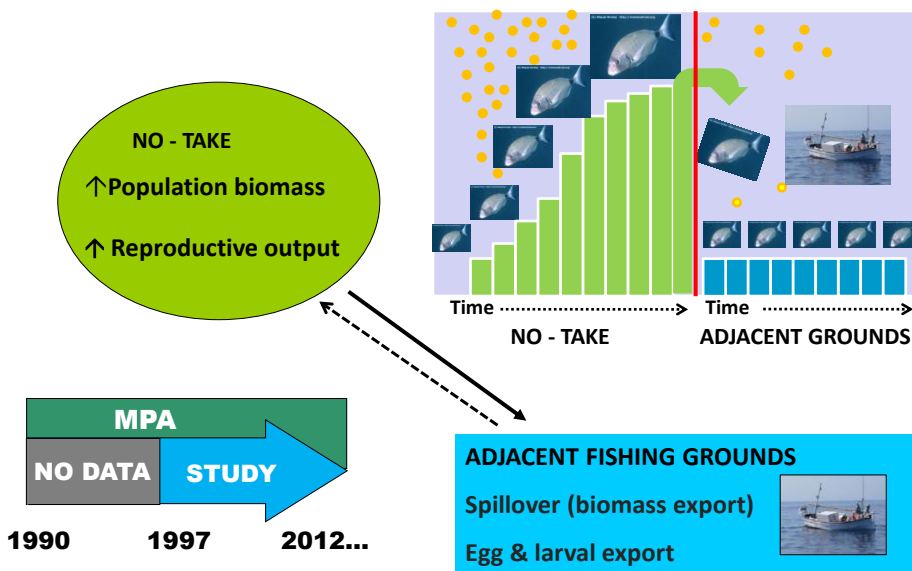
Benefits of protection for spiny lobster



Protected area in 1990
Surface: 55 km²
All commercial fishing forbidden
No lobster fishing allowed in MPA
Fishing prohibitions well enforced

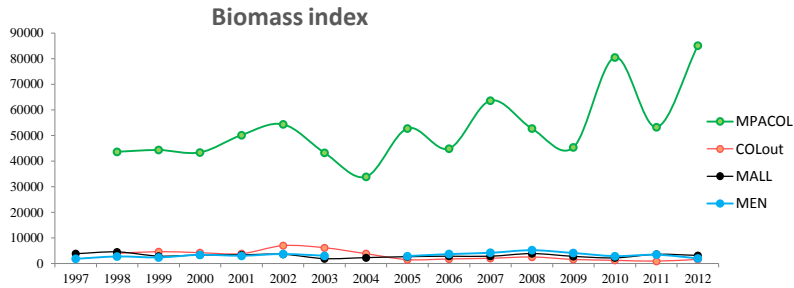
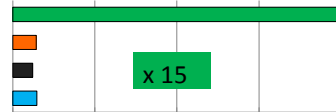
Expected effects of protection on a exploited species



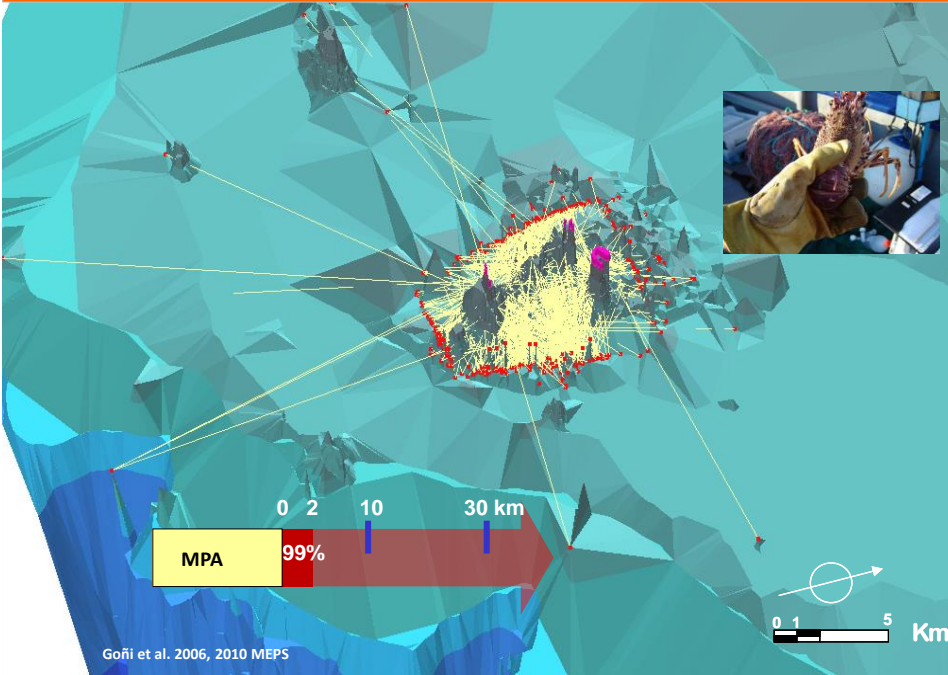
Biomass recovery



STUDY METHODS – DATA COLLECTION:
MPA: Experimental fishing
 Tag-recapture
Fished areas: Onboard sampling



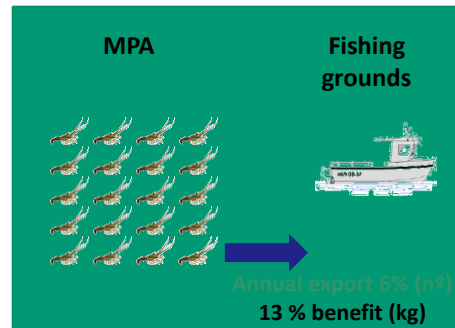
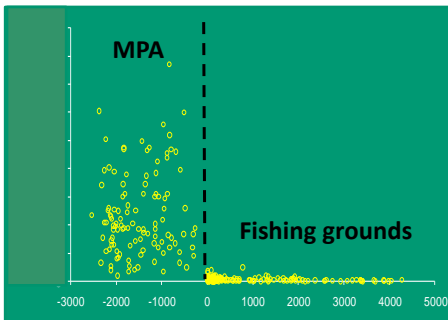
Evidence of biomass spillover: Fishery recaptures outside MPA



Spillover benefits to adjacent fishery



Biomass Index



Remarks

- Sustainability, as conservation, succeeds by doing what works
- Robust evidences on MPA's as powerful tools for the co-management of SSF's, if designed and enforced properly
- Special thanks to the Spanish General Secretary of the Sea by the long-term financial support of scientific monitoring of MPA's

