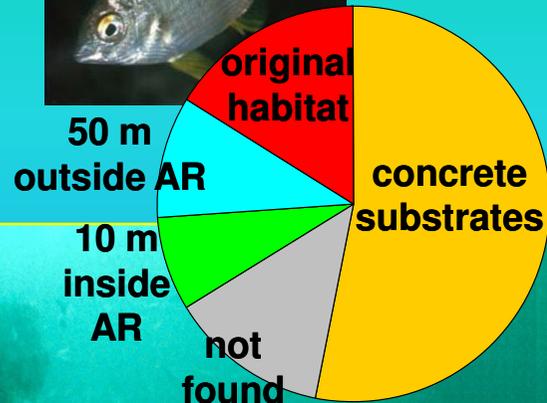
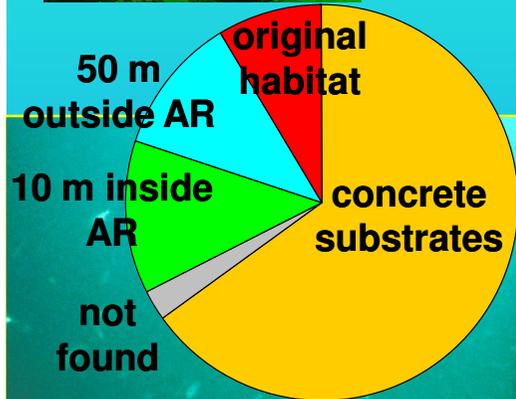
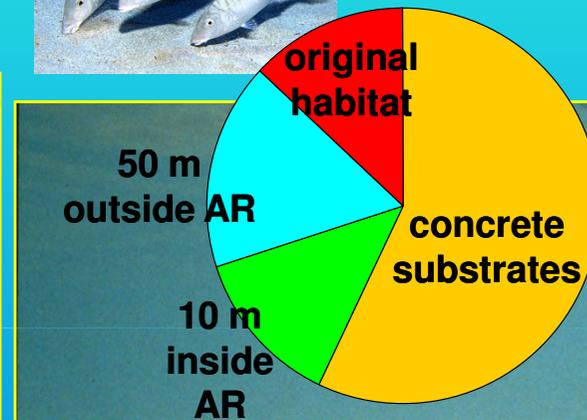


ARs contribute to increase the biomass of some exploitable fish species

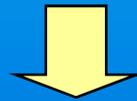


...providing food



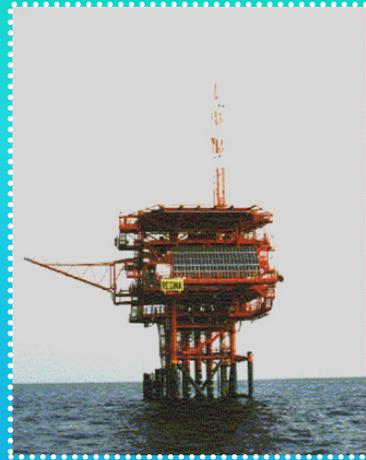
The deployment of ARs the Italian coast of the northern Adriatic Sea actually represent an additional tool for fisheries management as they contribute to...

- **MITIGATE** conflicts for space between small-scale fisheries using set gears, hydraulic dredges and illegal trawling inside the 3 nm from the coast;
- **WIDEN** the pool of species exploited by the small-scale fisheries and, hence, increasing fishers' income;
- **SHIFT** an amount of fishing effort from overexploited resources to valuable species (finfish and mussels) that are rare in the muddy bottoms where the artisanal fisheries usually operate.



Small-scale fishermen ask for more and more ARs

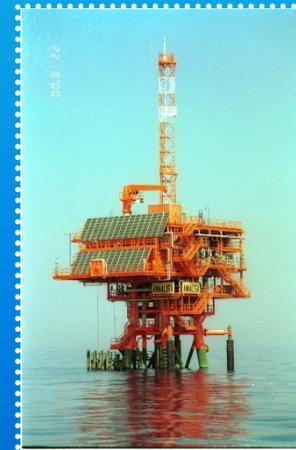
STUDY SITES



REGINA
Depth: 22 m
Legs: 4
Age: 12 years

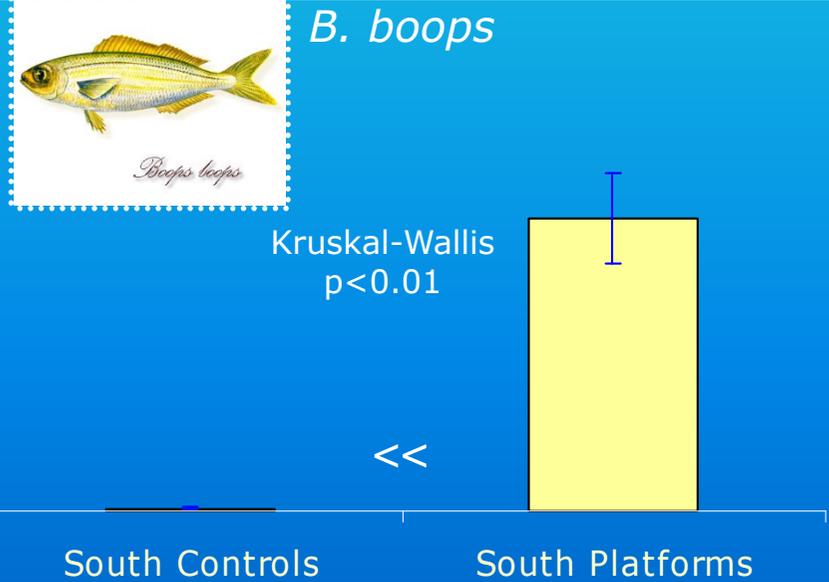
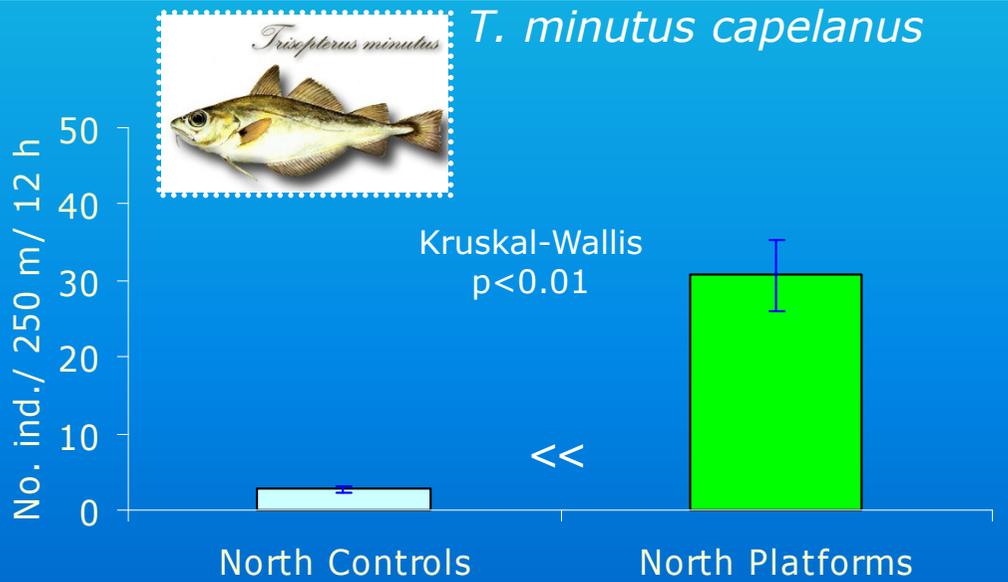
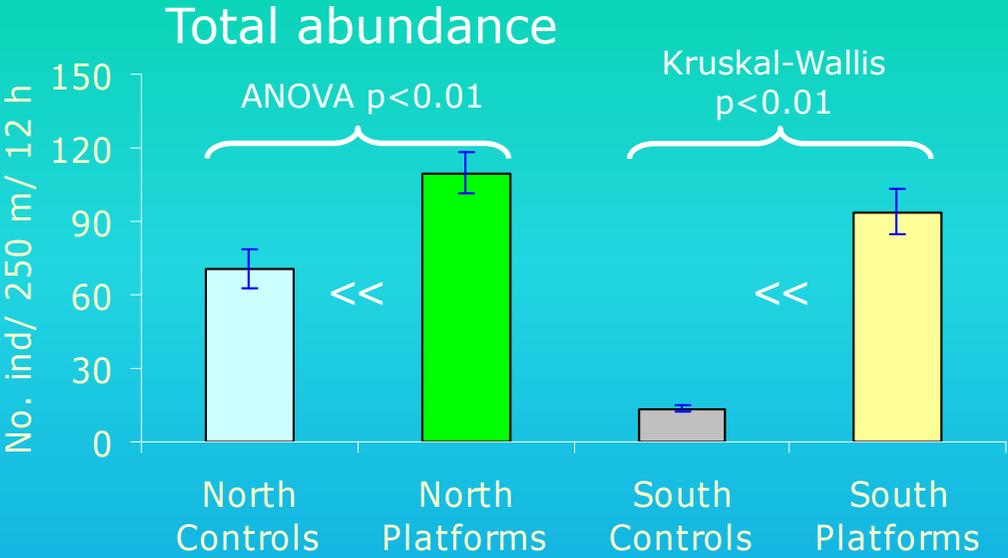


NAIDE
Depth: 35 m
Legs: 1
Age: 5 years

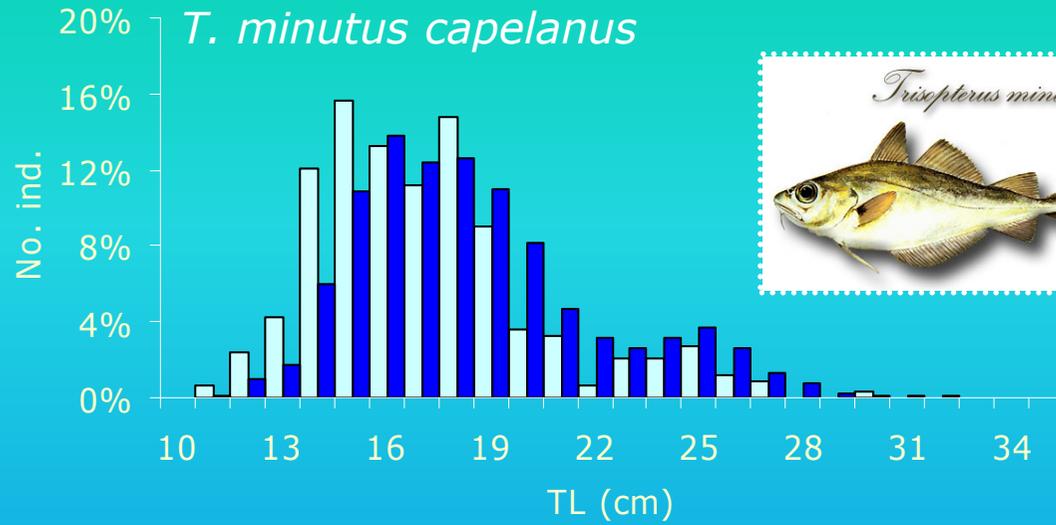


ANNALISA
Depth: 54 m
Legs: 4
Age: 10 years

RESULTS - UNIVARIATE

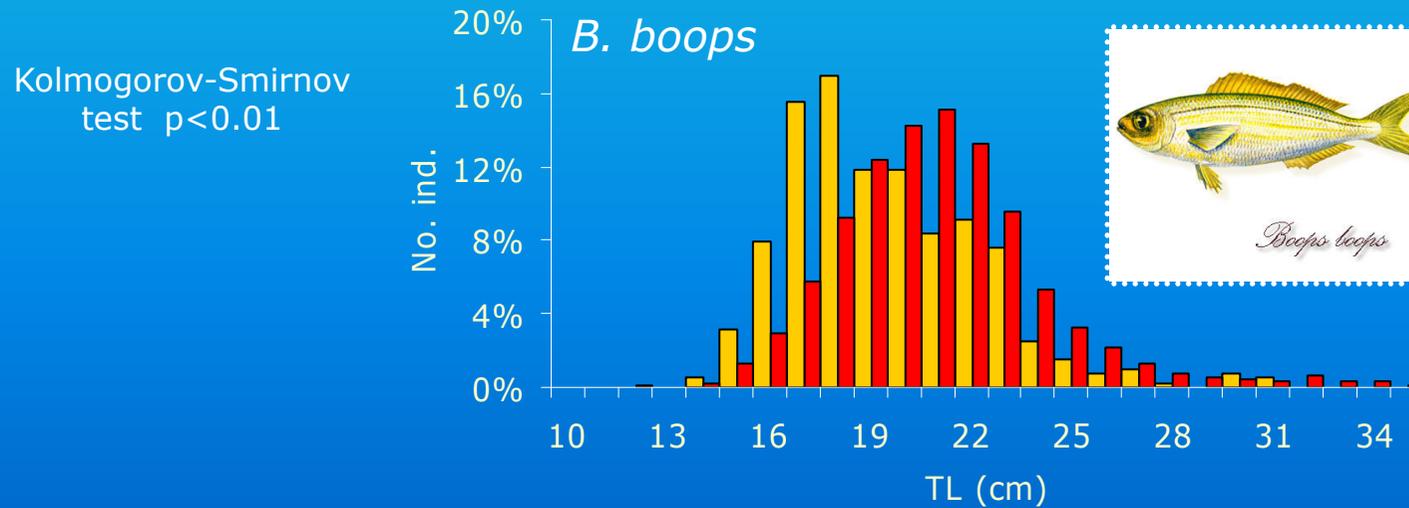


RESULTS - LFD



Kolmogorov-Smirnov
test $p < 0.01$

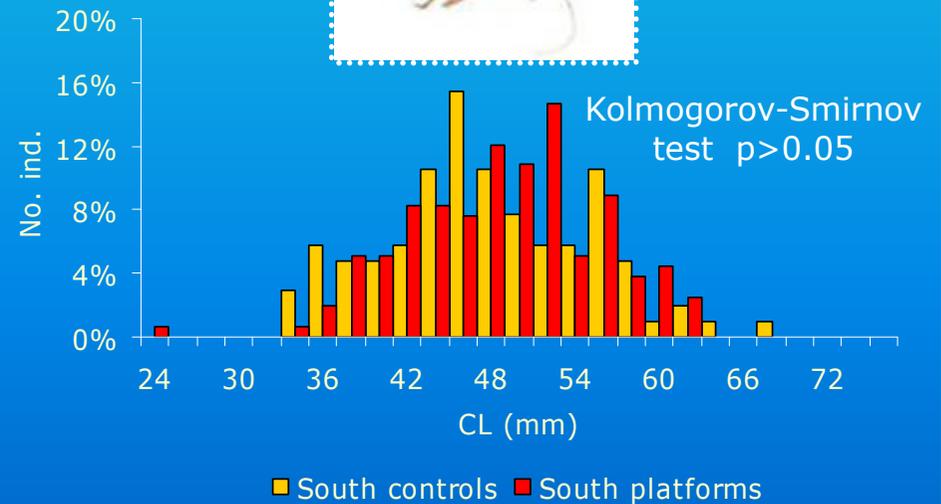
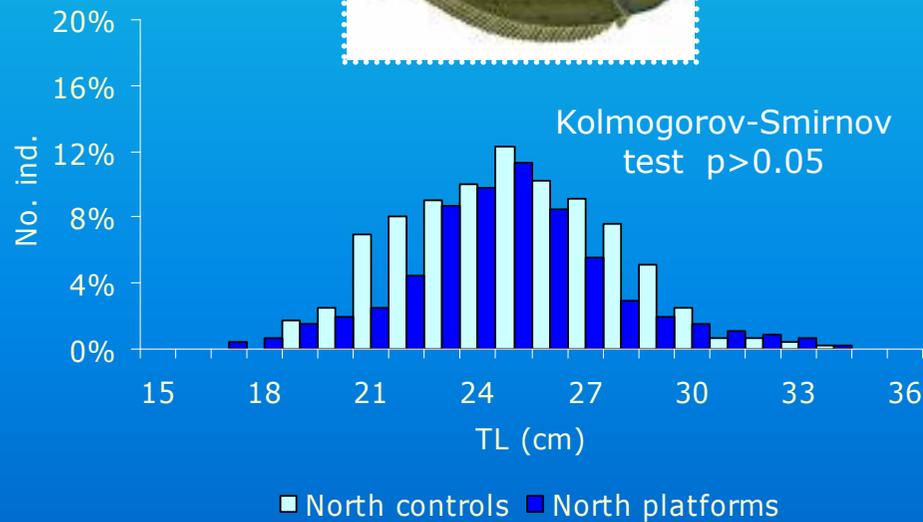
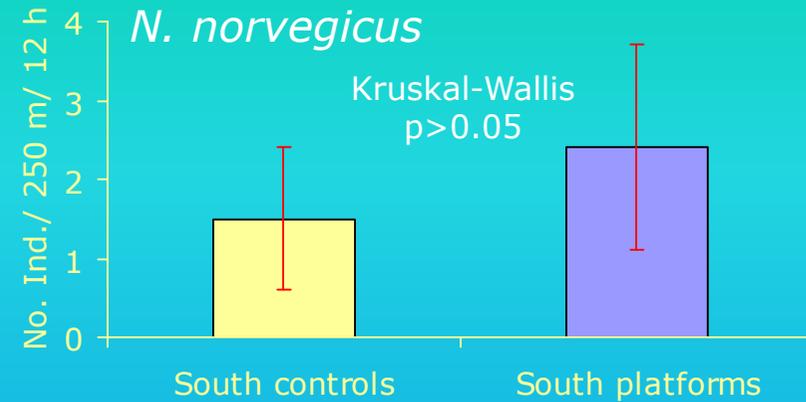
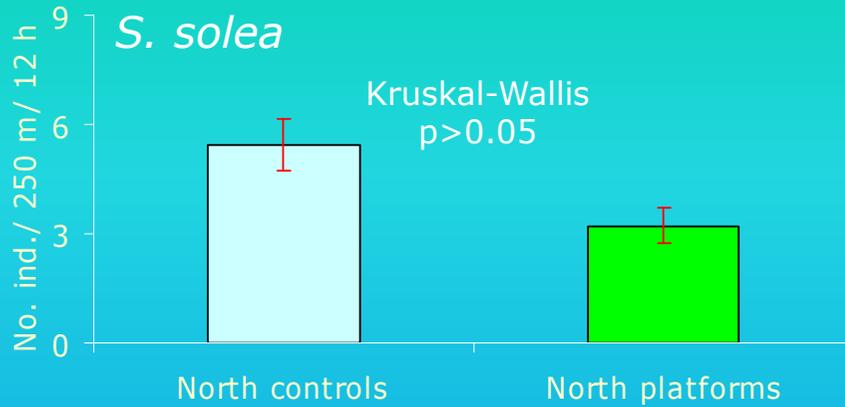
□ North controls ■ North platforms



Kolmogorov-Smirnov
test $p < 0.01$

■ South controls ■ South platforms

RESULTS – UNIVARIATE & LFD



In the northern Adriatic Sea the deployment of gas platforms produces a differentiation in the fish assemblage of the natural soft-bottom. The differentiation is strictly correlated with the composition of the **fish community inhabiting the region** and is mainly due to the occurrence of **reef-dwelling species** around the platforms.

The artificial substrates provided by a gas platform act *de facto* as an **artificial habitat**, attracting and concentrating many species that are rare in the natural soft-bottoms. In addition, considering that the fishery is prohibited in a 500 m radius, the zones surrounding these structures may represent small **Protected Areas** (MPA).

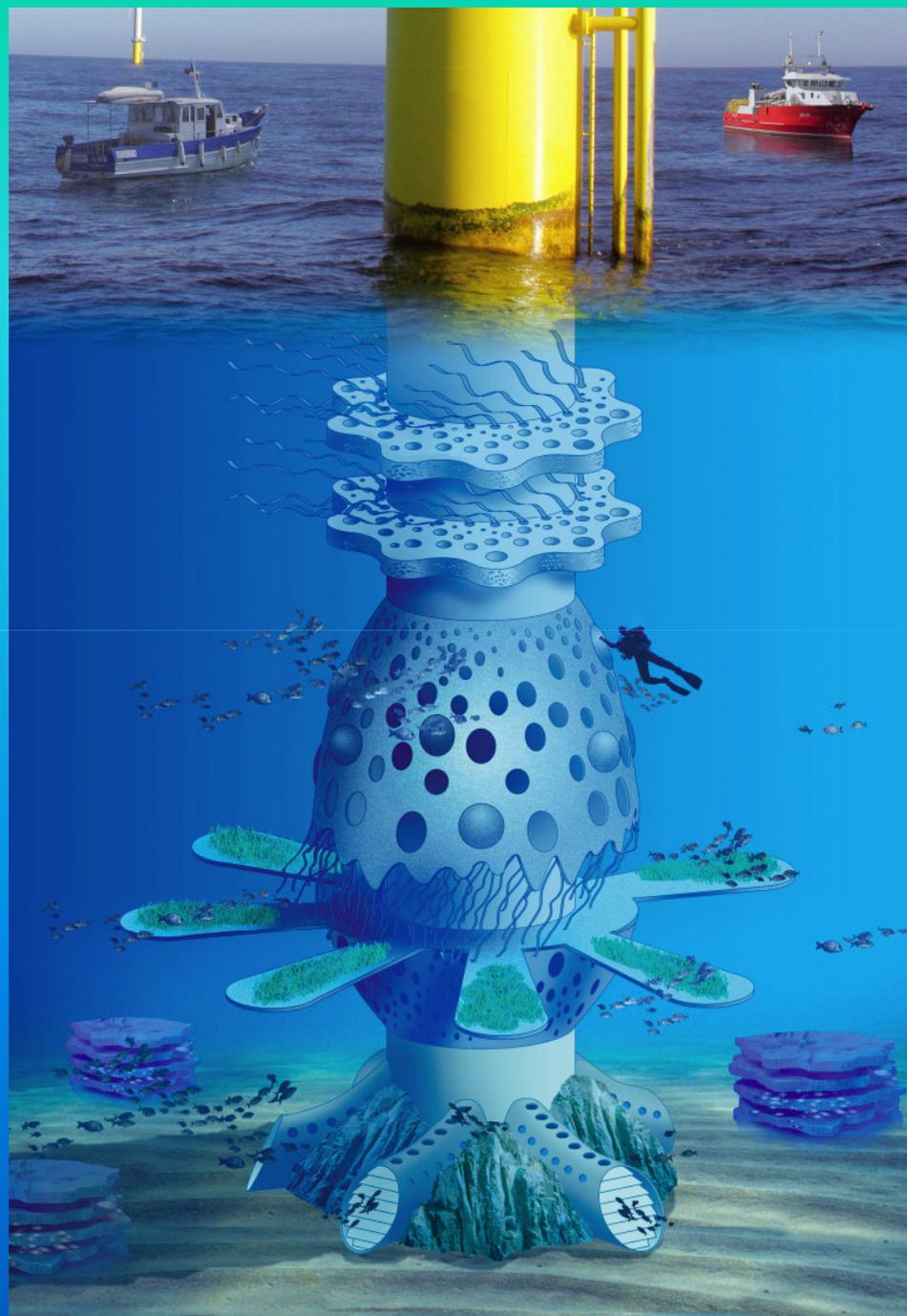
Generic macrovacuolar structures after 1 year from deployment

(15 Km offshore ; ALNG, 2010)



**The third dimension in the sea:
Eco-designed offshore foundation for fishes, sea-grass and multi-use purposes: diving, fishing, tourism, etc.**

(Pioch and Féron, 2011)



**The fourth dimension: socio-technical and ecological uses.
Example of multi-use management of a wind farm:
diving, scientific studies, aquaculture, fishing, tourism, etc. (D. Lacroix , 2011)**



Main conclusions

- Assessment of the impact for the operational phase of OWF on **commercial biological resources/fishery effort** in Adriatic is proposed by using quantitative/objective approaches
(wide-medium scale, site and species specific)
- Mitigation for OWF is also possible based on present basin knowledges on **Artificial Habitat and Mariculture** (small scale, site and species specific)