

The status of red coral: from Sardinia to the GFCM competence area

Alessandro Cau



Università degli studi
di Cagliari

Di.S.V.A

*Dipartimento di Scienze
della vita e dell'ambiente*

Main Features:

Long-lived

Slow growing

HIGH economic
value

many local
population are
locally depleted



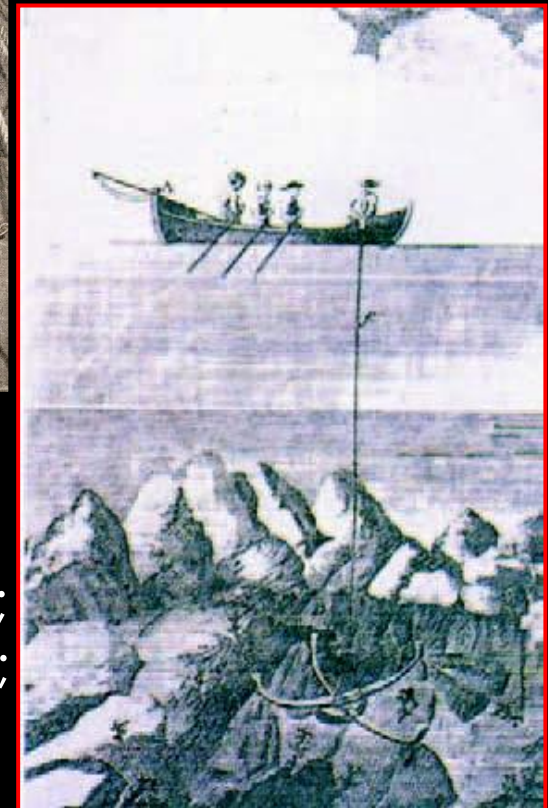
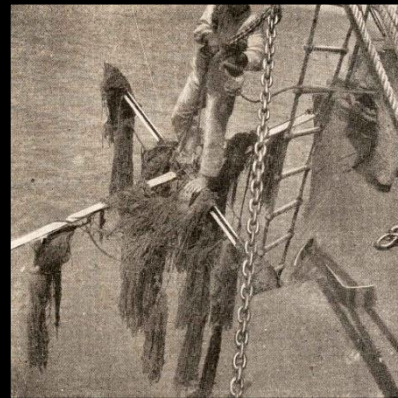
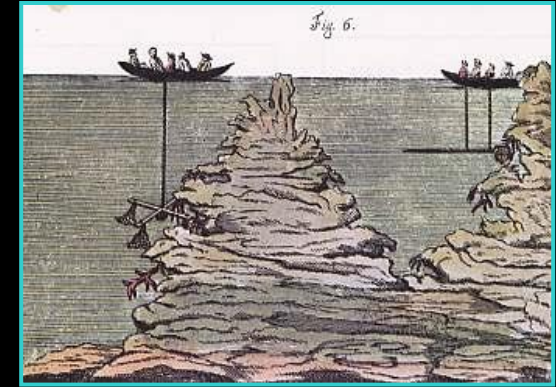
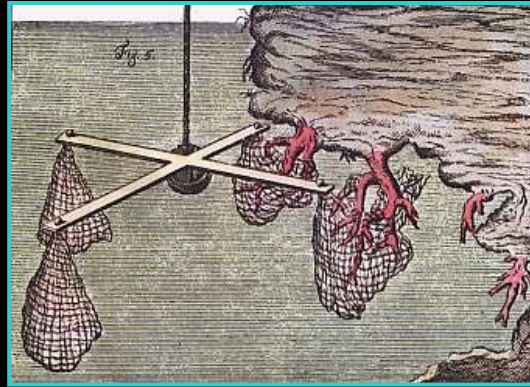
Corallium rubrum
(L. 1758)

(fam. Coralliidae)



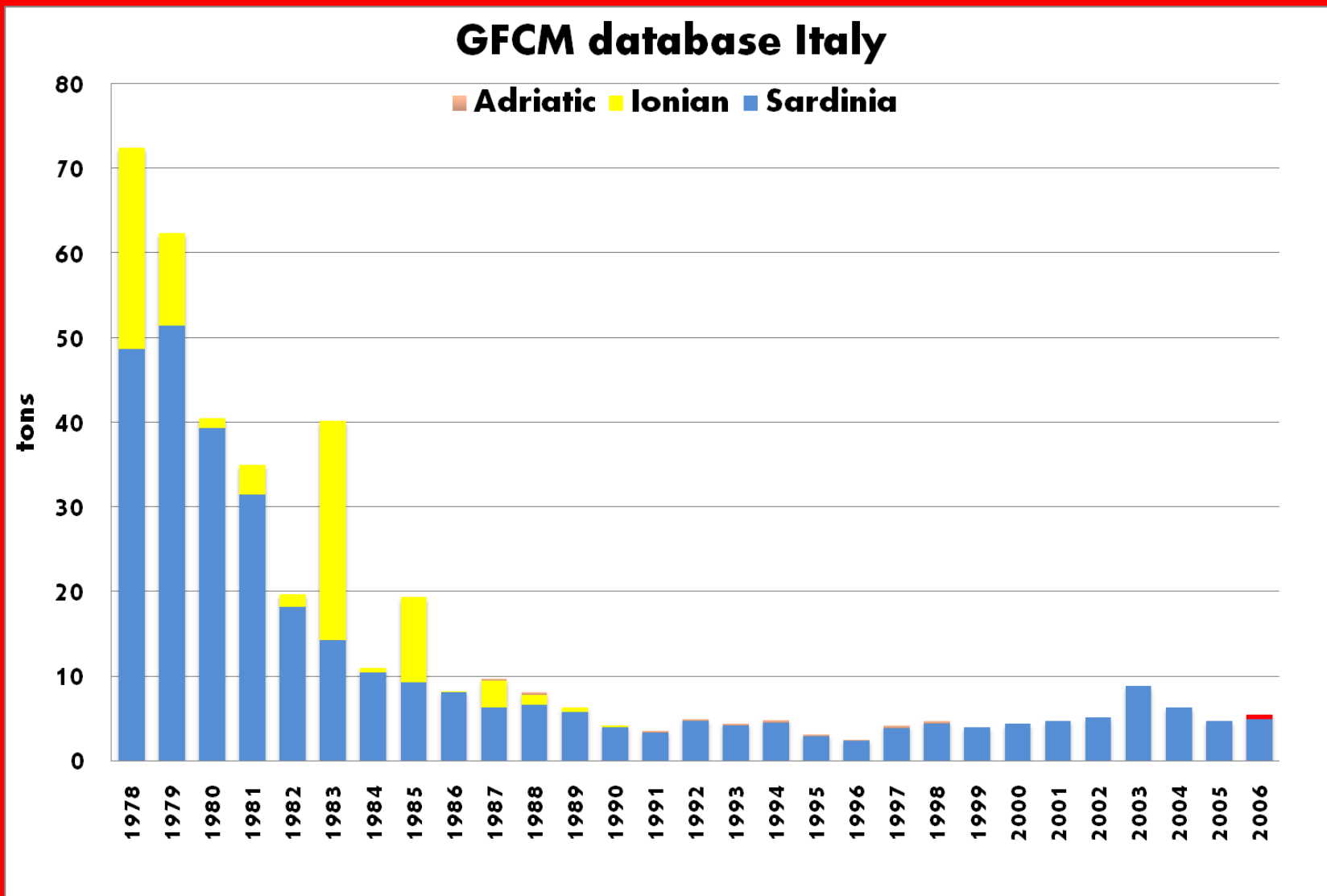
Legge Regionale n. 23, 30 maggio 1989

A long and (destructive) story...

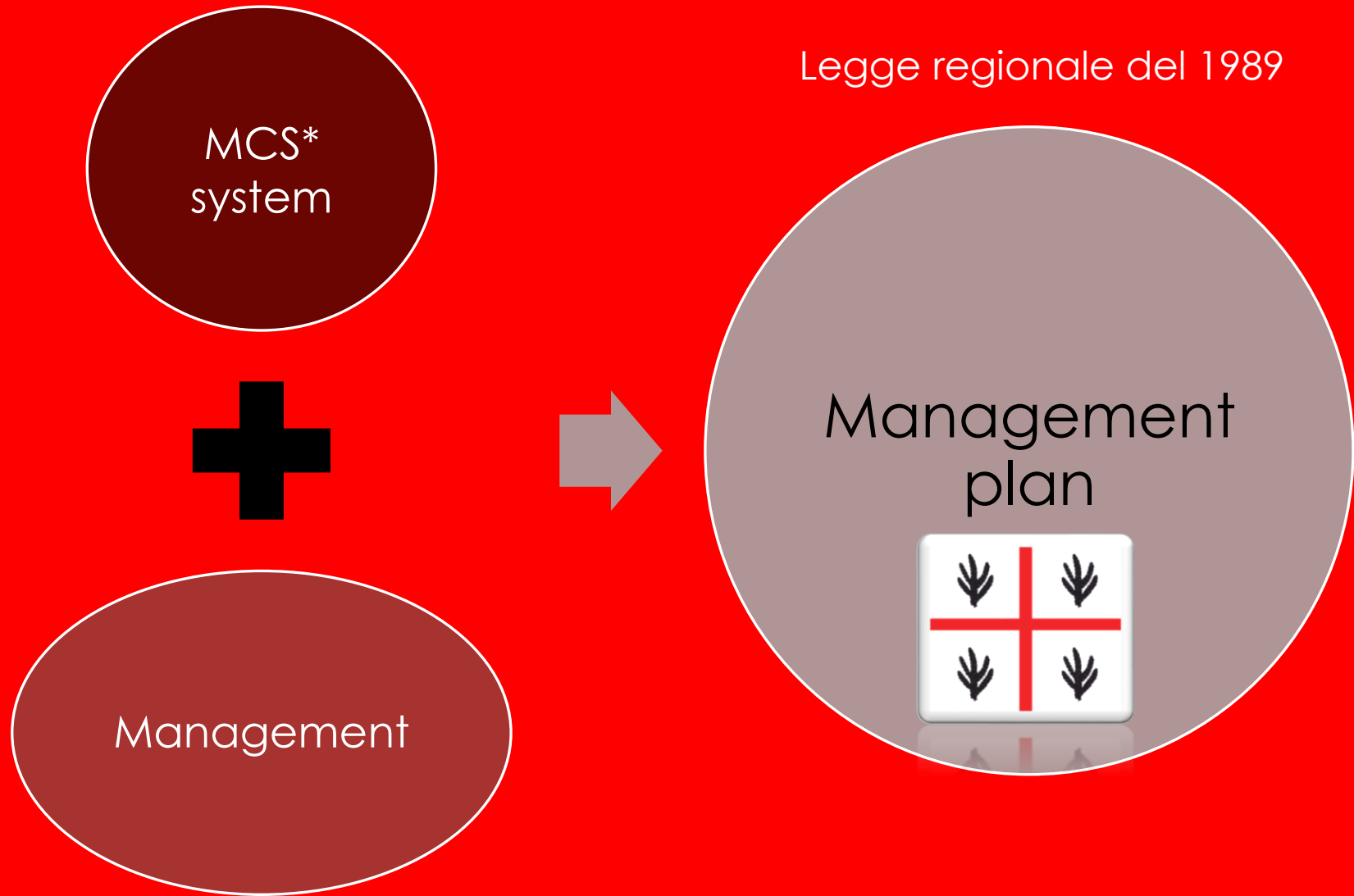


35% of landings in Italy 1983;
~99% of landings since 2000;
(FAO, 2007)

GFCM database (Based on data on trade rather than on catches) The vast majority of Italian corals comes from Sardinia



Background





Background

MCS system

Before Fishing

licences (equipment, diver, imbarcazioni)

(Local Administration)

During fishing

Logbook (divers)

Observers (scientists)

Landings

Designed landing ports

Check upon catches

(Coast Guard)

After landing

Traceability (local administration)





Management

Techniques



Control

Gear

Typology

Allowed: SCUBA with hammer
Not allowed: ROV

Closures

Spatia

Interdict areas

temporal

June 1
September 30

Effort

licences

Max 25 licences

Effort

quota

2.5 kg day⁻¹ diver⁻¹

size

>10 mm basal diam
(+/-20% tolleranza)



2017

**ADAPTIVE MANAGEMENT PLAN
FOR RED CORAL (*Corallium
rubrum*) IN THE GFCM
COMPETENCE AREA**

FIRST PART – BACKGROUND



**ADAPTIVE MANAGE
FOR RED CORAL
rubrum) IN THE GFCM
COMPETENCE AREA**

SECOND PART - SOCIO-ECONOMIC ASPECTS

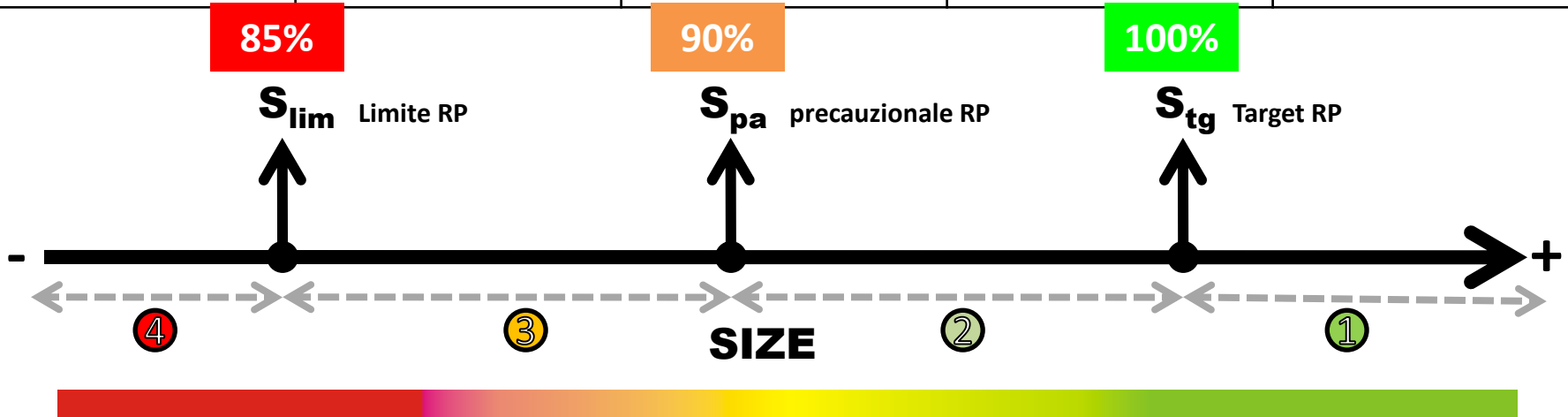
**ADAPTIVE MANAGEMENT PLAN
FOR RED CORAL (*Corallium
rubrum*) IN THE GFCM
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THIRD PART- THE MANAGEMENT of red coral



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GOAL	OBJECTIVE	INDICATOR	REFERENCE POINTS	Precautionary RP
TO KEEP RED CORAL STOCKS AT A SUSTAINABLE LEVEL	Control that the size limits are enforced	SIZE=S (size landing data)	Target= S_{tg} (90% of landings is at size = legal size limit LS) Limit= S_{lim} = (80% of landings is at size = legal size limit LS)	Threshold= S_{pa} =(85% of landings is at size = legal size limit LS)



Decision control rule		
①	$(S_{now} \geq S_{tg})$	No action
②	$(S_{pa} < S_{now} < S_{tg})$	Recommend stricter controls at the national level
③	$(S_{lim} < S_{now} < S_{pa})$	Recommend stricter controls at the national level Surveys to evaluate the actual size structure
④	$(S_{now} < S_{lim})$	Recommend stricter controls at the national level Surveys to evaluate the actual size structure Evaluate the possibility to close the fishing

**Fishery-
dependent**

**(Fishery agencies,
fishermen and
traders)**



Fishery-independent
(Scientific research)

**Supporto al
management**

L' ABC dello Stock Assessment

A = **Abbondanza**

B = dati sulla **Biologia**

C = dati sulle **Catture**

A + B + C = **Stock Assessment**



ESEMPI:

Case study 1, 2007,
Costa Brava (Spain)

Red Coral Fishery 977

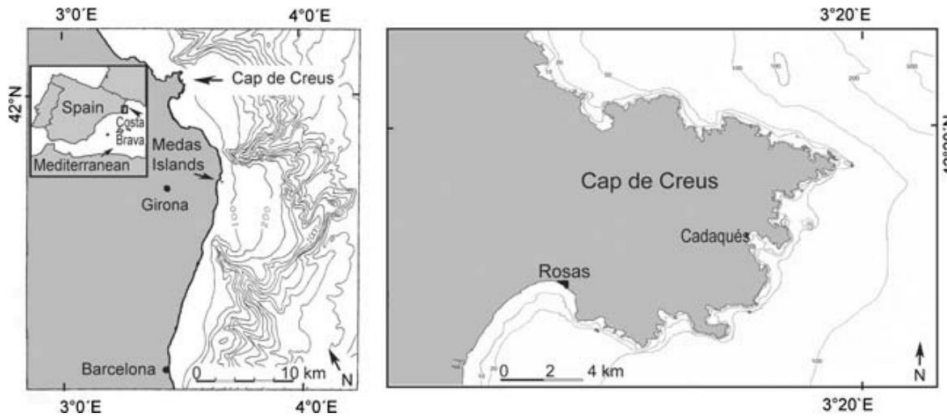
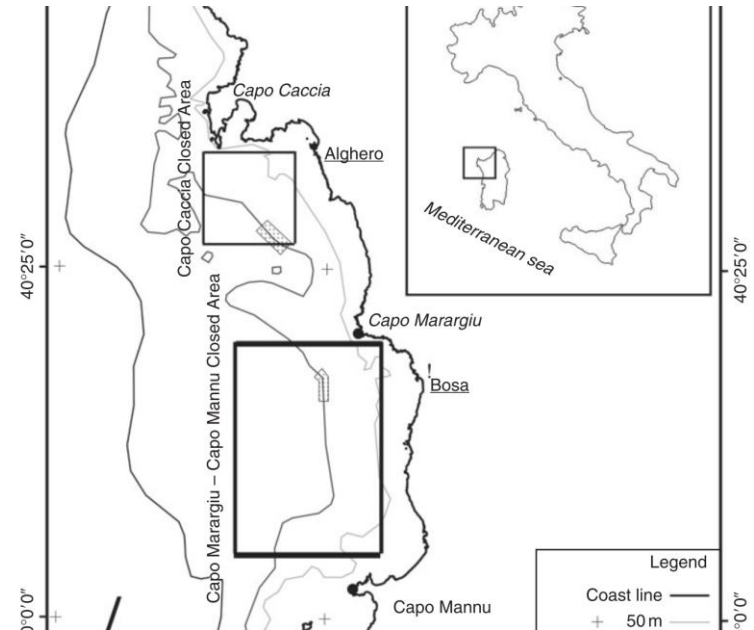


Figure 1. Map of the main red coral harvesting area: Cap de Creus, located at the Costa Brava (Mediterranean).

Case study 2,
2013, Sardinia (Italy)



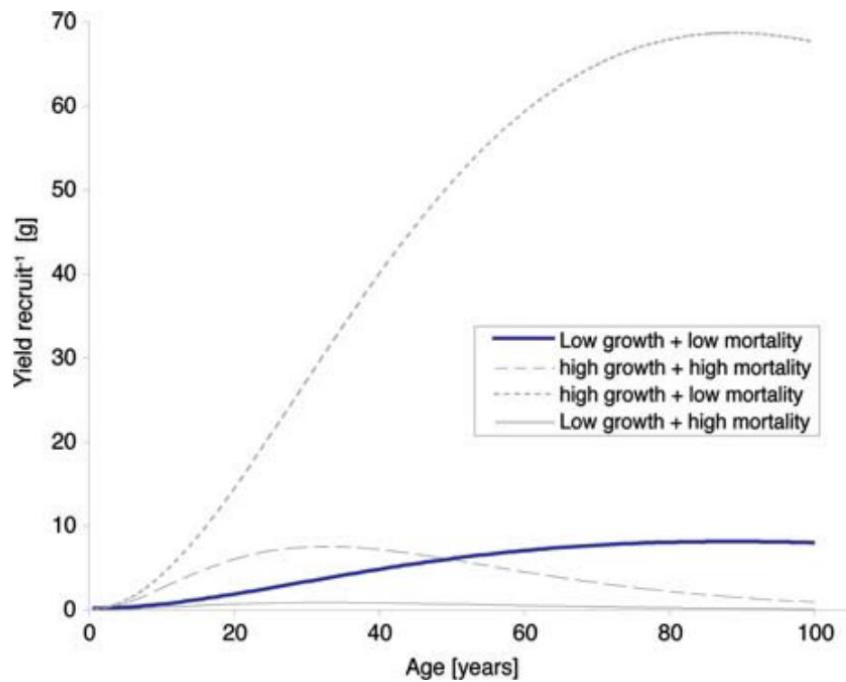
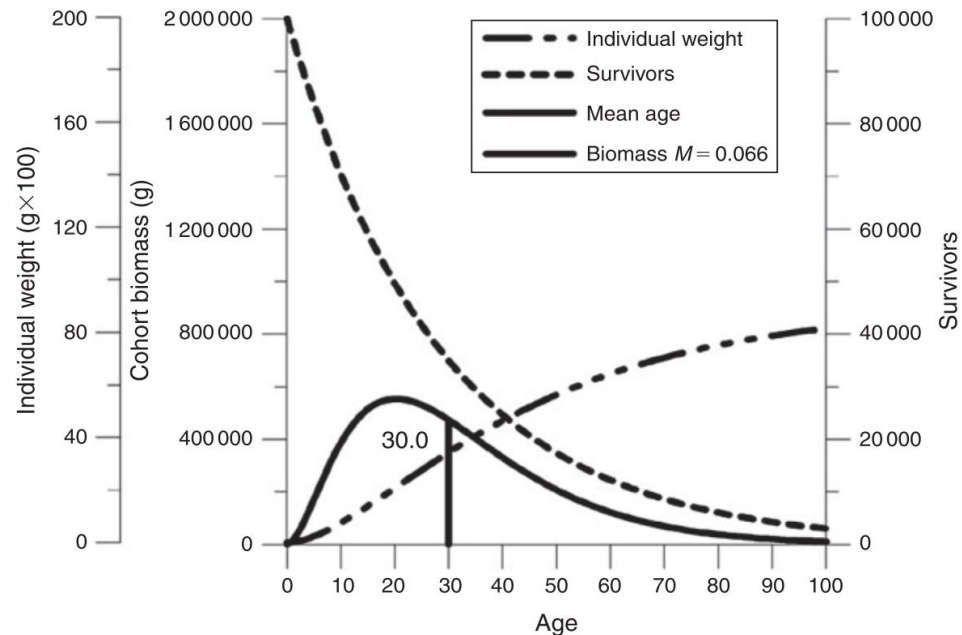


Figure 3. Yield per recruit curves for *Corallium rubrum* at various growth rates and mortalities.

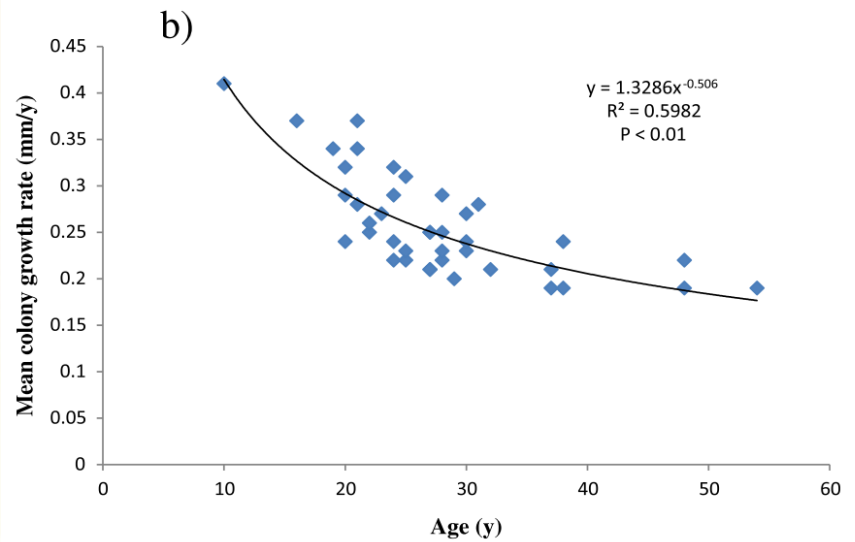
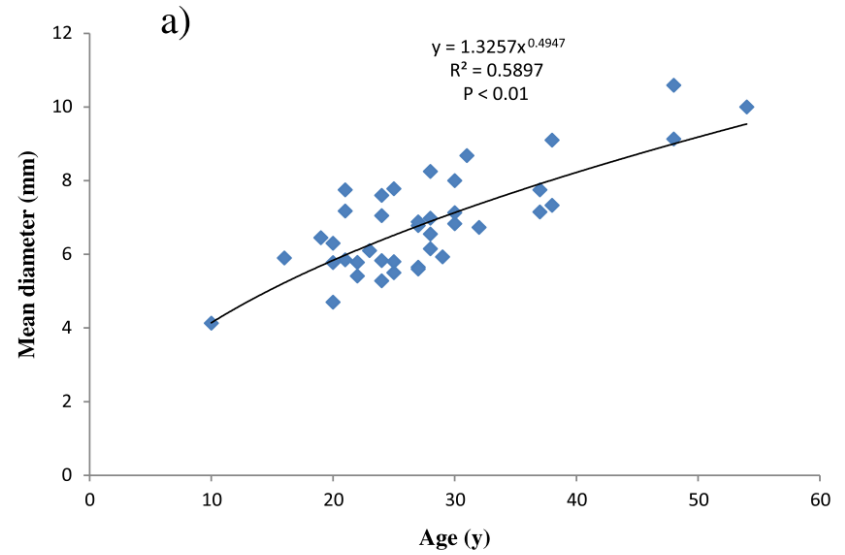
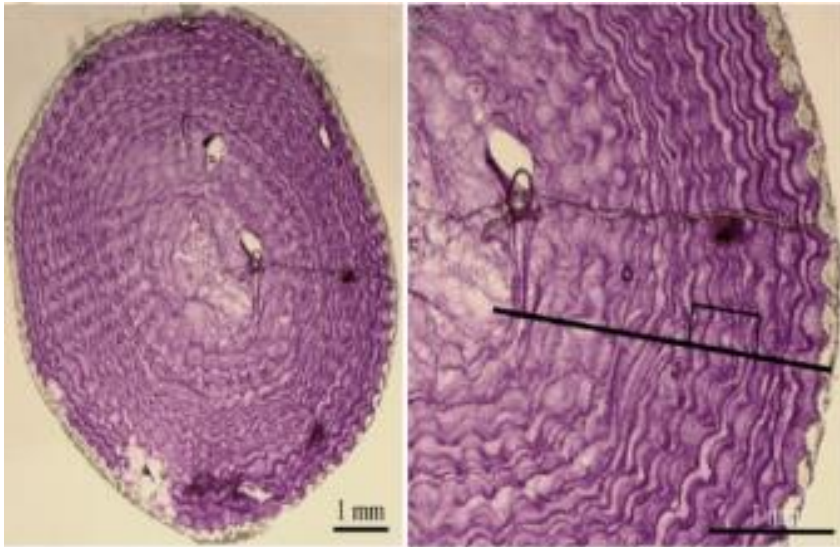
"This model shows that the fishery of red coral in Sardinia reaches its maximum yield at an age at first capture of 20 years.."

SAME MODEL, DIFFERENT OUTPUT!

"The maximum sustainable yield (estimated using the Beverton-Holt model) is reached at an age of first capture of 98 years"



GROWTH



REGIONAL RESEARCH PROGRAMME

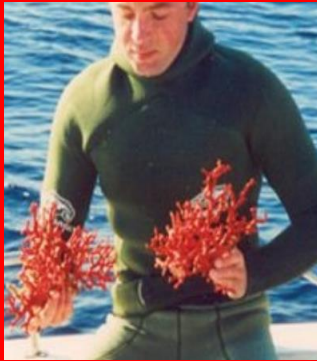
The **FIRST** coordinated international research project focused on red coral, with the aim to build solid knowledge supporting management measures

Urgent need to collect harmonized data in the whole GFCM competence Area



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RESEARCH PROGRAMME STRUCTURE (2020-2023)



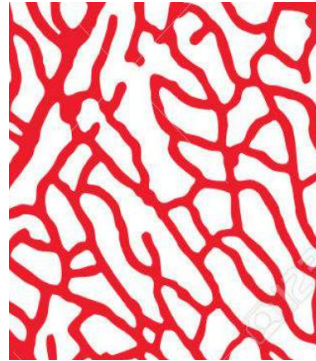
Action 1

Surveys at sea



Action 2

Traceability, certification and MCS systems



Action 3

Laboratory analyses based on the collection of samples of live red coral colonies



Action 4

Stock assessment and recovery dynamics



Action 5

Socio-economic analysis of red coral fisheries



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Thank you!