IFAPA

11 de octubre de 2013

Jornada Técnica sobre el Mero *Epinephelus marginatus* en el litoral andalúz

IFAPA CENTRO EL TORUÑO

Cª Tiro Pichón s/n

11500 El Puerto de Santa María (Cádiz)

Biología **Acuicultura**

Recursos Pesqueros

Instituto de Investigación y Formación Agraria y Pesquera
CONSEJERÍA DE AGRICULTURA, PESCA Y DESARROLLO RURAL

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Situación actual y Perspectivas del mero Epinephelus marginatus en el litoral andaluz

El mero Epinephelus marginatus es una especie de alto valor comercial y gran interés gastronómico, que está en la lista roja de la IUCN como "especie amenazada de extinción a nivel regional debido especialmente a la pesca excesiva" y que "se debe garantizar esta fuente de alimento en el futuro a la vez que se protege y valora la diversidad biológica"

El IFAPA apostando por la diversificación de especies en Acuicultura hace 15 años inició los estudios de reproducción en cautividad de esta especie, por primera vez en España y financiado por JACUMAR, se consiguió la reproducción, cría larvaria , engorde en jaulas y repoblación de meros de 2kgs producidos en el Centro y provistos de transmisores acústicos para estudios de telemetría, en el Paraje Natural de los Acantilados de Maro-Cerro Gordo.

En esta Jornada reuniremos a investigadores, expertos en el tema, empresas, pescadores profesionales y deportivos para estudiar la situación actual y las perspectivas futuras de esta especie

Inscripción

El día del evento en el Salón de actos del IFAPA Centro El Toruño

Sesión de mañana

09:30 Recepción

10:00 Inauguración

Dr.D. Salvador Nadal. Coordinador de actividades de I+D+I del IFAPA.

DªEsther Avila. Directora del Centro IFAPA El Toruño

Dª. Paloma Carballo Secretaría General de Pesca. JACUMAR (MAGRAMA).

Dra. Dª. Dolores Galindo Riaño. Decana de la Facultad de Ciencias de la Universidad de Puerto Real (Universidad de Cádiz).

Dn Nicolas Fernandez. Presidente del Grupo de Desarrollo Pesquero.

Dn Jose Luis Muñoz Coordinador Plan Nacional de Repoblación. IFAPA

10:30 Situación actual de las poblaciones de mero a nivel global.Dr. Matthew Graig. Member of GWS. IUCN. University of San Diego (California).

11:15 Actividad de la Comisión General de Pesca del Mediterráneo CGPM, El Comité de Acuicultura CAQ: proyectos que se están llevando a cabo en relación a la conservación de especies. D. Pablo Ávila Zaragoza. Vicepresidencia del CGPM (FAO). AGAPA.

11:45 Situación actual de los principales grupos de investigación en Italia sobre las poblaciones de mero. Dra. Giovanna Marino. Directora Dpto. Desarrollo sostenible de los recursos acuícolas. ISPRA. Italia.

12:30 Situación actual de las poblaciones de mero en Portugal .Dr. Pedro Lino. IPMA. Portugal.

13:15 El mero en Andalucía. Dra. Mª Angeles Bruzon IFAPA El Toruño.

13:45 Situación actual de los principales grupos de investigación en Francia sobre las poblaciones de mero. Dr. Patrice Francourt. Universidad de Nice-Sophia Antipolis;Francia

14:00 Pausa

14:10 Aperitivo.

Sesión de tarde

15:30 MESA 1: REPRODUCCIÓN Y TÉCNICAS DE CULTIVO.

Dra. Sabina De Innocentis. ISPRA.

Dra. Mª Ángeles Bruzón. IFAPA El Toruño.

Dr. Salvador Jerez. Instituto Español de Oceanografia de Canarias.

Dn Salvador Algarín. CUPIBAR

Dna. Maria Dolores Lopez CULMAREX

!6: 30 MESA 2:NUTRICION.

Dra. Catalina Fernández IFAPA Centro El Toruño

Dr. Juan Miguel Mancera. Profesor Departamento de Biología. Universidad de Cádiz.

Dr. Francisco Moyano. Departamento de Biología. Universidad de Almería

Dª Pilar Yamuza IFAPA Centro El Toruño.

17:30 MESA 3: GESTION DEL RECURSO. PESCA RESPONSABLE.

D. Ignacio Sobrino Yraola. Director de la Unidad del IEO de Cádiz.

Dª. Alain Jeudy. Marine Conservation Programme Manager

Representante de FACOPE.

Representante de FAAPE.

Representante de Asociación de pescadores deportivos.

Dra. M Santos Bruzón. Departamento Matemáticas UCA.

18:30 Clausura.

International Workshop on Mediterranean Groupers
Cádiz (Spain) – October 2013

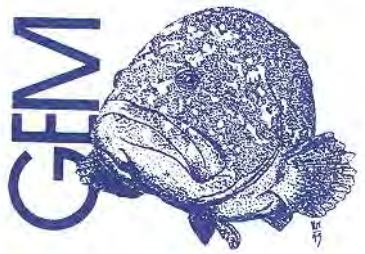
Status of the Mediterranean Groupers in France (Mediterranean)

Pr Patrice Francour

Nice Sophia Antipolis University - EA 4228 ECOMERS

Groupe d'Etude du Mérou - GEM

francour@unice.fr



Université Nice Sophia Antipolis

ECOMERS

Ecology of Coastal Marine Ecosystems and Response to Stress

Some words of presentation about GEM:

✓ GEM – **Groupe d'Etude du Mérou** – has been created in 1986

✓ this non-profit association gathers scientists, marine protected areas managers, and Scuba and Free divers

✓ the main objective is to improve the knowledge about the Dusky Grouper (*Epinephelus marginatus*)

✓ progressively, GEM considered all the Mediterranean Groupers (*Epinephelus* spp., *Mycteroperca* spp.) and the Brown Meager (*Sciaena umbra*)

✓ main activities: field campaigns of census within and outside MPAs

✓ an Internet site (http://www.gemlemerou.org)

✓ a newspaper Marginatus (one issue/year – available as PDF file in French on the Internet site)

The historical changes within the Grouper populations in France

✓ 1940 - 1950: the first spear fishermen and the first underwater movies (Cousteau and Dumas) highlight abundance of large and heavy groupers (ca. 40 kg)

✓ 1950: the first evidence of grouper abundance decrease

✓ 1960-1980: the groupers are (very) rare along the French coast. Spear fishing is the main cause … although some people try to highlight the pollution

✓ 1985 – 1990: some "small" *E. marginatus* (about 40 cm length) are observed; the populations are shyly increasing

✓ 1990-2000: several publications demonstrate a migration from North-Africa to Northwestern Mediterranean coast of young groupers (Francour & Ganteaume, 1999; Gilles et al., 2000; Bodilis et al., 2003)

✓ 1993: a first moratorium is decided due to GEM lobbying to ban spear fishing

✓ due to spear fishing prohibition, small groupers migration, and global warming, the grouper populations are increasing

The first census missions launched by GEM

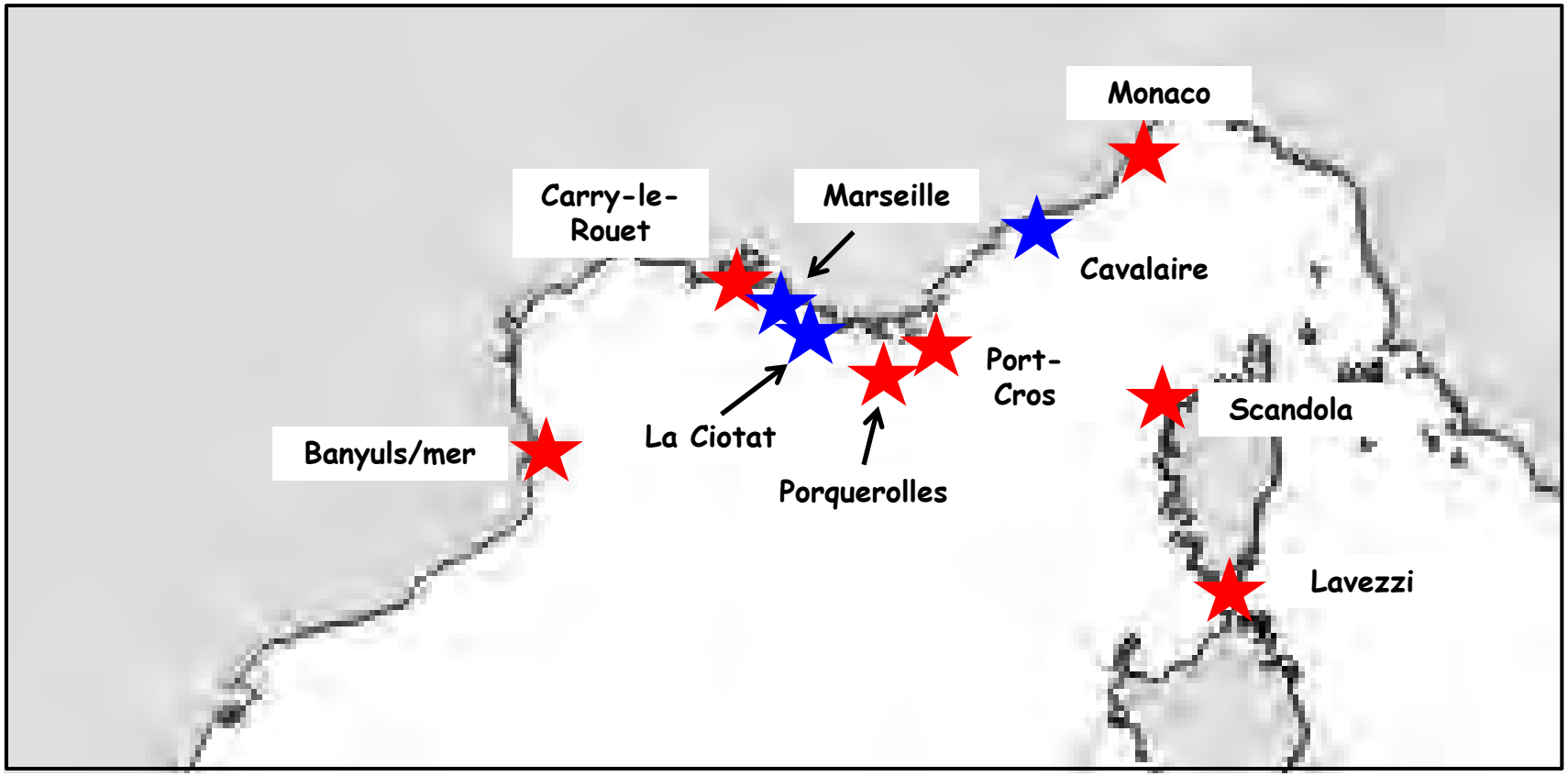
- ✓ 1986 - 1988: National Park of Port-Cros; census and underwater tagging (Chauvet & Francour, 1990)
- ✓ 1995: Monaco (*E. marginatus* is a protected species in Monaco)
- ✓1997: La Ciotat (close to Marseille) – the first outside a MPA
- ✓ 2001: Marine Reserve of Cerbère-Banyuls

According to the sites, the censuses are done every 2 or 3 years, always with the same underwater census method.

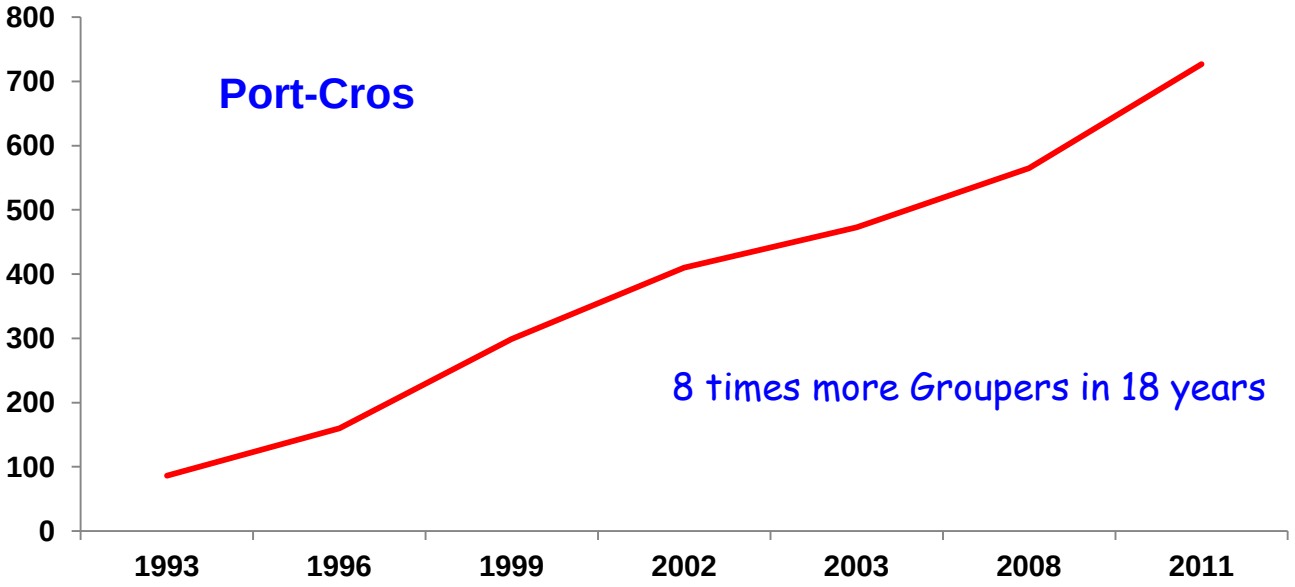
A large set of censuses:

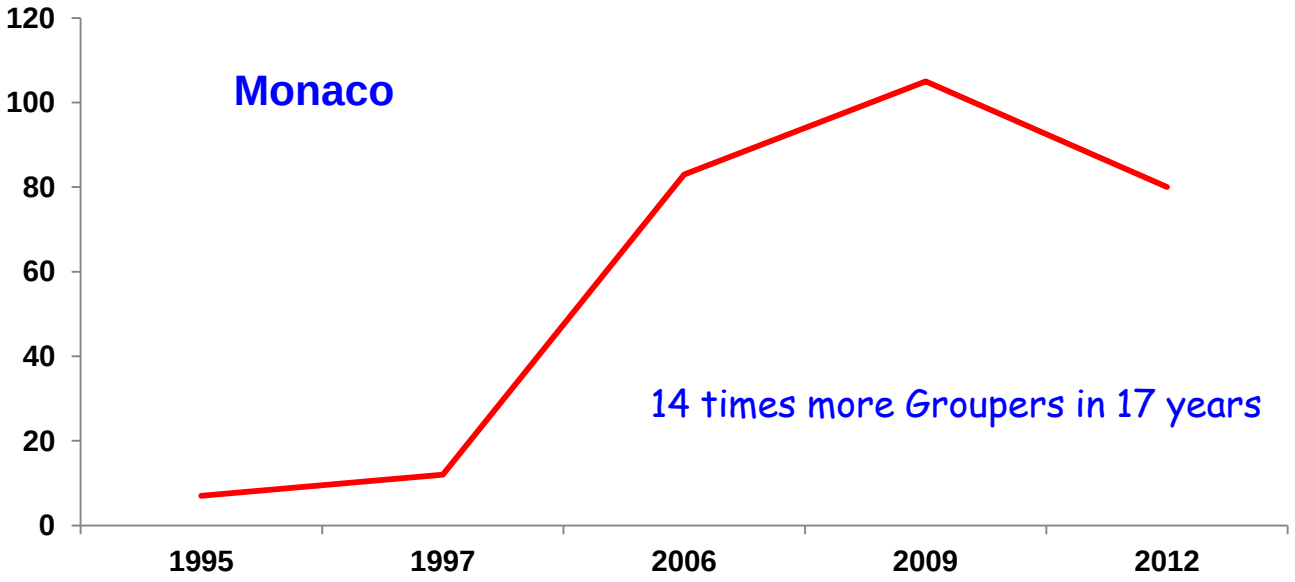
Protected area

Non protected area



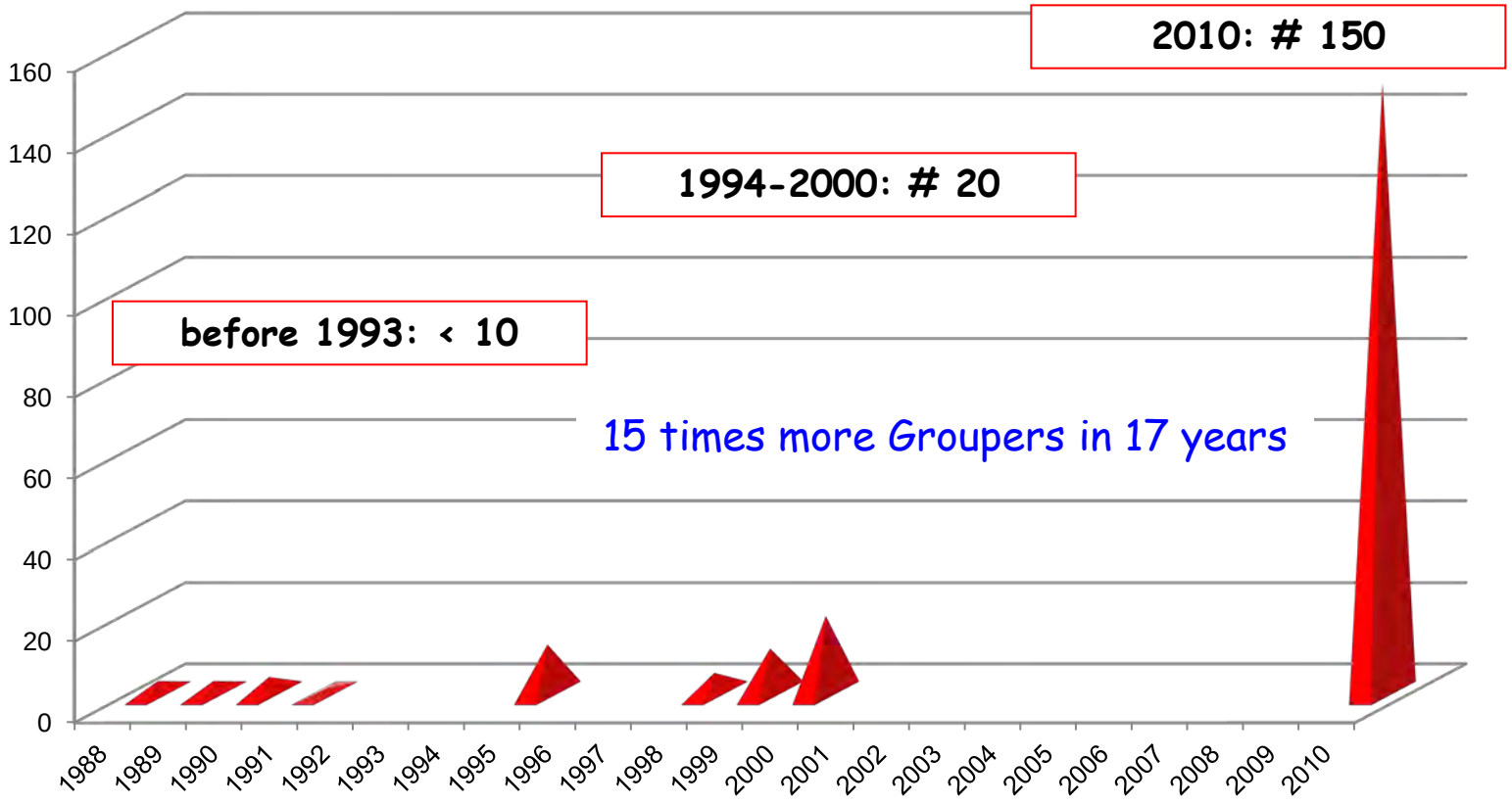
Some results in MPAs





Some results in MPAs

Scandola MPA (Corsica)



Some results in MPAs

Scandola MPA (Corsica)

Percentage of occurrence of *Epinephelus marginatus* along 15 minutes visual census (Fish Assemblage Sampling Technique; Seytre & Francour, 2008, 2009)

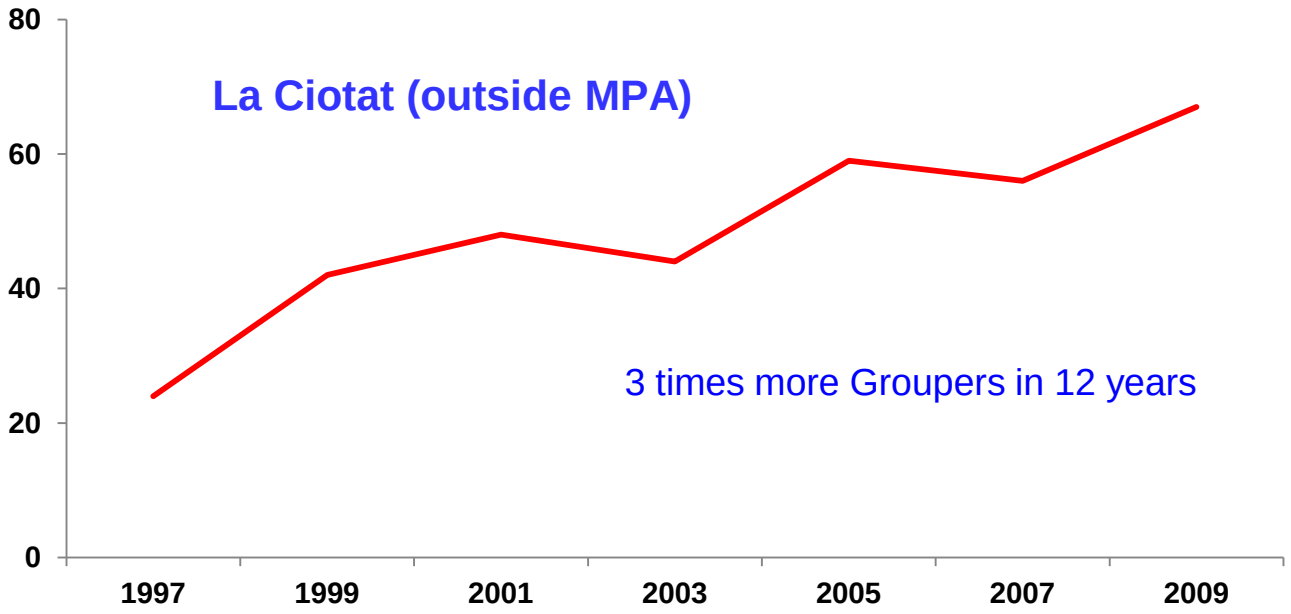
Data from 1999 to 2010 (Francour unpublished)

Location	% occurrence Small individuals	% occurrence Large individuals
North Outside MPA	34.4	11.5
No Take zone	**80.7**	**74.8**
Reserve (artisanal fishing allowed)	34.7	10.0
South Outside MPA	38.9	16.7

The highest values in the no take zone

No take zone >> Reserve where artisanal fishing is allowed

Some results outside MPA



Main Conclusions:

- ✓ inside AND outside MPAs, the grouper abundance is still increasing
- ✓ the rate of increase is lower outside MPA (x3) than in protected areas (x8-15)
- ✓ the lower rate outside MPAs is due to poaching
- ✓ the demographic structure (results not displayed) highlight an efficient reproduction of *E. marginatus* along the French Mediterranean coast

The ecological role of Groupers

✓ as high-trophic level predators they allow to maintain high biodiversity in coastal ecosystems

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The importance of high-level predators in marine protected area management: Consequences of their decline and their potential recovery in the Mediterranean context

Giulia Prato*, Paolo Guidetti, Fabrizio Bartolini, Luisa Mangialajo and Patrice Francour

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(Received 27 March 2013; accepted 3 September 2013)

High-level predators have been depleted in the oceans worldwide following centuries of selective fishing. There is widespread evidence that high-level predators' extirpation may trigger trophic cascades leading to the degradation of marine ecosystems. Restoration of large carnivores to former levels of abundance might lead to ecosystem recovery, but very few pristine ecosystems are left as baselines for comparison.

Marine protected areas (MPAs) can trigger initial rapid increases of high-level predator abundance and biomass. Nevertheless, long term protection is needed before the ecosystem's carrying capacity for large carnivores is approached and indirect effects on lower trophic levels are observed.

The Mediterranean is probably very far from its pristine condition, due to a long

The ecological role of Groupers

✓ as high-trophic level predators they allow to maintain high biodiversity in coastal ecosystems

✓ a higher biomass of high-trophic level predators in the oldest Mediterranean MPAs (**24-46% in NT vs 1-13% in OR**) is mainly due to groupers

Marine Protected Area (country)	Date of creation	Station (status)	Proportion of predators (% of total fish biomass)	Source; Year of data acquisition
National Park of Port-Cros (France)	1963	Gabinière (NT)	33.4	A; 2004
		La Galère (R)	16.5	B; 2006
		Montrémiant (R)	7.5	B; 2006
Natural Reserve of Banyuls-sur-mer (France)	1974	Rederis (NT)	28.8	C; 2008
		Cap Abeille (R)	24.5	C; 2008
		North (OR)	5.8	C; 2008
		South (OR)	2.3	C; 2008
Natural Reserve of Scandola (Corsica, France)	1975	Palazzu (NT)	44.5	B; 2000
		Punta Nera (R)	5.0	B; 2000
		South (OR)	11.0	B; 1997
		North (OR)	13.0	B; 1997
Natural Reserve of Medes Island (Spain)	1983	Protected 1 (NT)		
		Protected 2 (NT)	14.2	D; 1998
		Unprotected 1 (OR)	46.8	D; 1998
			3.4	D; 1998
		Unprotected 2 (OR)	1.5	D; 1998

NT: no take area
R: Reserve
OR: outside reserve

(Francour et al., 2010)

The economical importance of Groupers

Inquiry with Scuba divers in the National Park of Port-Cros:
Why do you come to dive here?

	Percentage of answer (single choice)		
Why?	Not important	Important	Very important
High biodiversity	1	4	**95**
Clear and clean waters	3	19	**78**
Grouper abundance	2	24	**74**
National Park's fame	10	21	69
Scuba diving facilities	13	23	64
Price	34	54	12
Geographical access	33	34	33
Other services	72	23	5

→ The main reasons: the high biodiversity and the groupers

(adapted from Briquet-Laugier, Francour et al., 2007)

The management of Groupers populations

✓ according to the success of the successive moratoriums (1993-97; 1998-2002; 2003-2007; 2008-2013)

✓ according to the ecological role of high-trophic level predators in the ecosystem functioning

✓ according to the high economical importance of groupers

→ GEM supported the renewal of the next moratorium in 2014 (extended to all the grouper species)

✓ however, there is still an opposition from some spear fishermen

→ GEM developed another argument: the "Groupers/Spear fishermen" ratio

✓ ca. 15 000 groupers along the French Mediterranean coast (according to the GEM censuses inside and outside MPAs)
✓ between ca. 30 000 and 100 000 French spear fishermen

→ **1 Grouper for ca. 2-7 spear fishermen**. A re-opening of spear fishing will destroy in a very short term the 20 years of protection effort !

The future of Groupers populations in the Mediterranean

✓ a high decree of connectivity between groupers assemblages

✓ the same ecological and economical importance of groupers for all the Mediterranean countries

✓ a too limited protection of Groupers in Mediterranean (France and Monaco only)

✓ *Epinephelus marginatus* is considered as an Endangered species in the Mediterranean by the IUCN (Abdul Malak et al., 2011)

→ It's time to develop a common management plan at the scale of the Mediterranean.

France, Italy and Spain have to lead this project

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