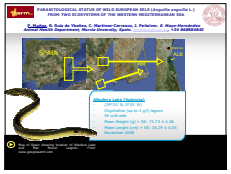
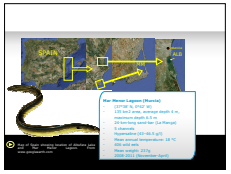
PARASITOLOGICAL STATUS OF WILD EUROPEAN EELS (Anguilla anguilla L.) FROM TWO ECOSYSTEMS OF THE WESTERN MEDITERRANEAN SEA

C. Rubio, R. Ruiz de Ybáñez, C. Martínez-Carracedo, J. Peñalver, E. Mayor Hernández
Animal Health Department, Murcia University, Spain. e-mail: [redacted]



Albufera Lake (Valencia)
- 1200 ha, 0-700 ml
- Glyphosate (up to 2 g/l) lagoon
- 50 wild eels
- Mean Weight (g) ± SD: 73.73 ± 0.86
- Mean Length (cm) ± SD: 35.29 ± 0.15
- Summer 2010

Key of host diversity profile of studied sites
ALB Total diversity Endemic Alien
www.geoplaneth.com



Mar Menor Lagoon (Murcia)
- 1,200 ha, 0-7 ml
- 135 km2 area, average depth 4 m, maximum depth 6.5 m
- 24 km-long sand bar [La Manga]
- Salinity
- Hypersaline (37-46.6 g/l)
- Mean annual temperature: 18 °C
- 806 wild eels
- Mean weight: 215g
- June 2011 / November April

Key of host diversity profile of studied sites
ALB Total diversity Endemic Alien
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MATERIAL AND METHODS

- 50 eels from ALB
- 62 eels from MM

Skin scrapes
Gill wet mounts
Gill squash technique
Intestinal helminths
Anguillicoloides crassus

- 354 eels from MM

Skin scrapes
Gill wet mounts

Intestinal helminths
Anguillicoloides crassus

Anguillicoloides crassus
- **Adult** : 70% infected

Larval stages:
- 1.5% pepsin + 1.5% HCl (60ºC, 1h digestion)
- Identification at 400 g for 5 min
- Counting under stereo at 1 and 40x
- 12 and 16 d: complete encysstment called [1st]
- 30 d: diverticula

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RESULTS & DISCUSSION

Species	Taxon	Organ	Locality	Prevalence (%)	Scarcopi Intensity (range)
Pyosicum gianti	Pyosicopsis	2	ALB	5.79	ND
		3	MM		
		4	MM	10.42	ND
		5	MM		
Prosorynchus angusticeps	Cestoda	3	ALB	5.26	ND
			MM	1.27	ND
Tetrapriella cellata	Digenea	4	ALB		
			MM	33.96	29.41 (1-161)
Bunophaka angusticeps	Digenea	3	ALB	5.26	1 (1-1)
			MM	1.58	11.83 (1-23)
Bothrocephalus claviceps	Cestoda	2	ALB	7.89	1 (1-1)
			MM		
Proteocephalus macrocephalus	Cestoda	3	ALB		1 (1-1)
			MM		

Higher intestinal parasite burdens showed lower body condition.
Intestinal parasites work through diminishing the metabolic efficiency and assimilation of resources by damaging eel's mucosa and reducing food absorption.

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RESULTS & DISCUSSION

Gills
- **Prevalence: 81% (50% adults)**
- In 2003-2005: 11.5 % Rokicki & Wandzel (2008)
- *A. crassus* infection rates rapidly increase in the first few years following its appearance and then stabilize at a prevalence of around 80-100%

Gills
- **Prevalence: 3%,** Mean Intensity (range): 5417.87 (1-42969), Mean Abundance (SD): 207.69 (0-3857)
- **ESCAPE INTERMEDIATE HOST**
- **WE DON´T THINK SO: 4 years survey**
- **GALLINITE (43-48.5 g/l)????**
- **WE DON´T THINK SO:** 70% prevalence in wild eels from hypersaline waters in Morocco (Loudiki & Belghiti 2007).
- **LACK OF INTERMEDIATE HOST????**
- None of the reported intermediate host have been described in MM
- Low salinity???
- Low overall (1.6-3.1 prevalence) shows infection, in the absence of re-infection, L2 perish in the final host until they are eliminated.
- Eels already infected when enter MM????????

Eels with better body condition harboured a higher *A. crassus* burdens suggesting that the most active eels increase the opportunity of predate intermediate or paratenic host

FUTURE WORK

CONTAMINANTS
- Ramsar, Specially Protected Area under the EU/92/43/Birds Directive (SPA), Site of Community Importance (SCI), Natura 2000 Network EEI Habitats Directive) etc.
- Environmental threats related with human activities like **mining activities** which **has caused severe metal contamination of the lagoon sediments.**
- Mining wastes sporadically enter the lagoon through the wadi when torrential rain occurs

Growing awareness that pollutants and contaminants may adversely affect eel fitness, reproduction and migratory success (Palstra et al. 2007) and its relation to the presence of contaminants.
Eels from the Mar Menor/Mediterranean sediments with ecological conditions and different pollution levels.

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