

# PILOT EXPERIENCES OF INTENSIVE CONTROL OF EXOTIC AQUATIC FAUNA IN THE UPWELLINGS OF THE ULLALS DE BALTASAR (EBRO DELTA NATURAL PARK)

Saguer, Guillem; Mir, Ana; Llenas, Guillem; Cruset, Eloi; Mairal, Neus; Queral, Josep M.; Fanlo, Helena; Franch, Nati; Pou-Rovira, Quim



Associació la Sorellona



Generalitat de Catalunya  
Departament d'Acció Climàtica,  
Alimentació i Agenda Rural



Next Generation  
Catalunya





Associació la Sordina



Valencia toothcarp  
(*Valencia hispanica*)

Three-spined stickleback  
(*Gasterosteus aculeatus*)

South Iberian spined loach  
(*Cobitis paludica*)

Big-scale sand smelt  
(*Atherina boyeri*)

Common goby  
(*Pomatoschistus microps*)

European eel  
(*Anguilla anguilla*)





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Associació la Sordina

Wels catfish  
(*Silurus glanis*)

Goldfish  
(*Carassius auratus*)

Carp  
(*Cyprinus carpio*)

Oriental waterloach  
(*Misgurnus anguillicaudatus*)

Topmouth gudgeon  
(*Pseudorasbora parva*)

Mosquitofish  
(*Gambusia holbrooki*)

Platy  
(*Xiphophorus maculatus*)

Pond slider  
(*Trachemys scripta*)

Red swamp crayfish  
(*Procambarus clarkii*)

Blue crab  
(*Callinectes sapidus*)





# Capture techniques tested

~2 months of intensive fieldwork:

37 devices

3 types of lure

- Sunflower seed-based lures
- Fish
- Light

3 positions

- Bottom
- Water column
- Surface





# Results

●	High effectivity, high selectivity
○	High effectivity, low selectivity
●	Low effectivity, high selectivity
○	Low effectivity, low selectivity
■	Presumably high effectivity, high selectivity
□	Presumably high effectivity, low selectivity

	CAU	CCA	PPA	XMA	GHO	SGL	TSC	CRE	PCL	CSA
T01 MG							■	■		
T01 MP	○	○					○	□	○	○
T03 DG MG	○	○								
T03 DG MP	○	○	○	○	○					
T03 DP			○	●					○	
T06			○	○	○	●			●	●
T07 DG	○	○	○			○			○	○
T07 DP			○	○	○	○			○	○
T10			○	●	●		○		○	○
T11 DP 8E									○	
T11 DP 3E				○					○	
T11 DG			○		○				○	
T12			○	●	●	○				○
T13							●	■		
T15 DG										
T15 DM		○							●	○
T15 DP										○
T18										●
T21				○					○	
T22										●
X01						○				
X02		○								○
Palangre						○				

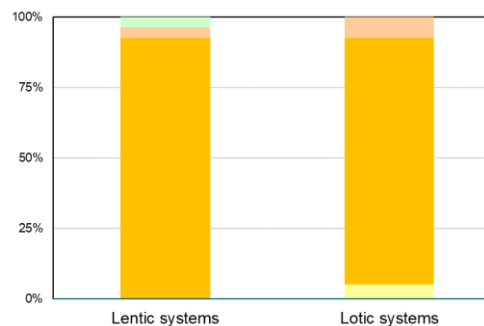
# Results: poecilids (*G. holbrooki*, *X. maculatus*)



Small-sized "minnow traps" placed close to the surface

Species proportion of catches

- *X. maculatus*
- *G. holbrooki*



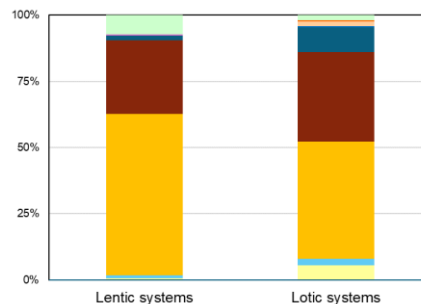
Small net traps placed close to the surface

Catch per unit of effort

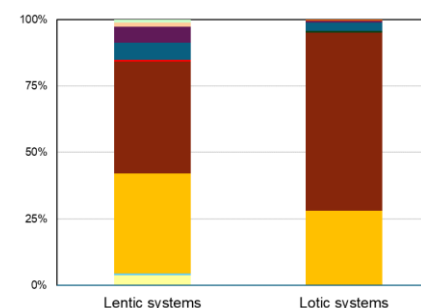
	Bottom	Middle column	Surface
T10	0,13	0,50	3,98
T12	0	1,11	14,28

Species proportion of catches

T10



T12



# Results: crustaceans (*P. clarkii*, *C. sapidus*)

Fyke nets with fish exit



Catch per unit of effort

Invasive crustacean	<i>Procambarus clarkii</i>	0,38
	<i>Callinectes sapidus</i>	0,29

≈

0,41
0,33

Native fish	<i>Valencia hispanica</i>	0,29
	<i>Anguilla anguilla</i>	0
	<i>Gasterosteus aculeatus</i>	0,15
	<i>Pomatoschistus microps</i>	0
	<i>Atherina boyeri</i>	0,14

∧

0,54
0,15
1,14
1,22
1,97



Large crustacean traps lured with fish

*C. sapidus* → 100% catches



# Results: topmouth gudgeon (*Pseudorasbora parva*)

Large-sized “minnow traps” lured with light

Catch per unit of effort

	No light	Light
CPUE	2,23	14,82



Preliminar results

Only 6 traps were tested  
with light



# Results: other invasive fish (*Silurus glanis*, *Cyprinus carpio*, *Carassius auratus*)

Abundant species for which no effective & selective method has been found

Small-sized fyke nets



Longline



Large-sized fyke nets



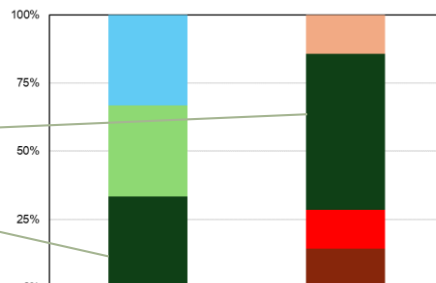
Gill nets



Large-sized "minnow traps"

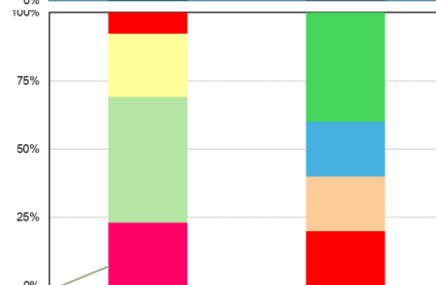


Large-sized cages

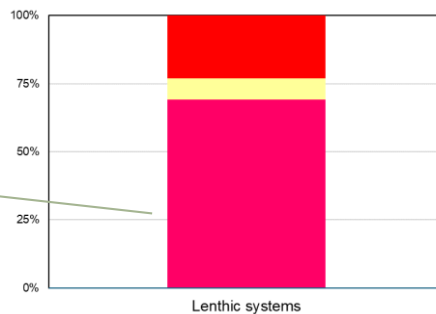


*S. glanis*

Apparently attracted by small fish activity



*C. carpio*



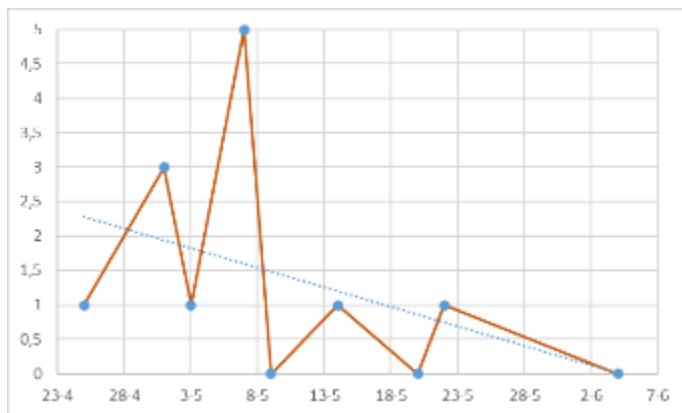
*C. auratus*



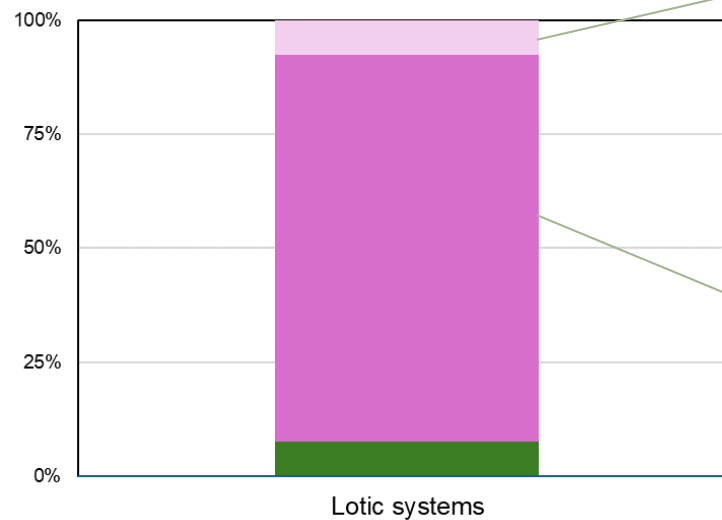
# Results: exotic turtles (*Trachemys scripta* & others)

## Large-sized cages lured with fish

Evolution of nº of catches



Species proportion of catches



melanistic *M. reevesii*



*T. scripta*



Thank you

Obrigado

Gracias

Gràcies