

IMPACTS OF RIVER DAMMING ON FRESHWATER FISH FAUNA IN MEDITERRANEAN AREAS



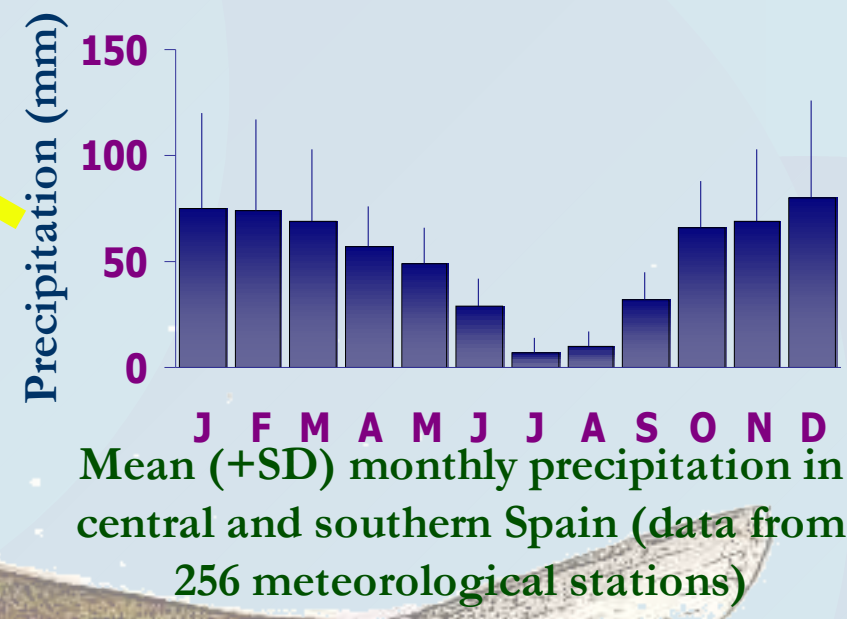
PRENDA, J., CLAVERO, M. and BLANCO-GARRIDO, F.

Dpto. Biología Ambiental y S.P., Univ. Huelva, Avd. Andalucía s.n., 21007 Huelva, SPAIN

LOCAL EXXTINTIONS OF HABITAT SPECIALISTS

BUT...¿WHAT HABITAT SPECIALISTS?

Mediterranean rivers are extremely fluctuating



Strict specialisations (habitat or trophic) have not evolved

Most Iberian species have been shown to be able to inhabit reservoirs

BARRIER EFFECT



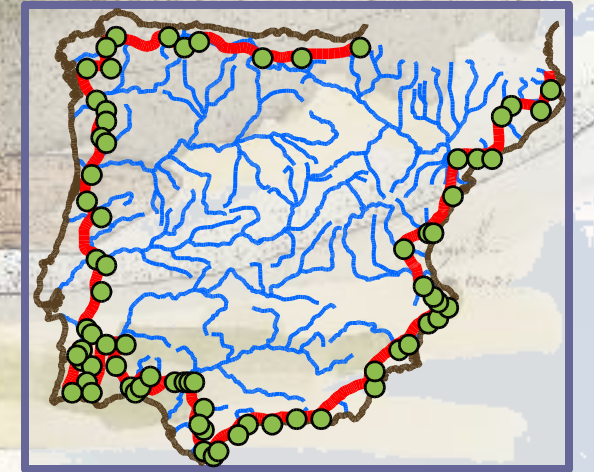
Anadromous species (sturgeons, lampreys)

The sturgeon (*Accipenser sturio*) is now nearly extinct in the Guadalquivir river (S Spain) due to the construction of a dam near its mouth in 1930s

Sharp declines - extinction

Diadromous species (eels, grey mullets)

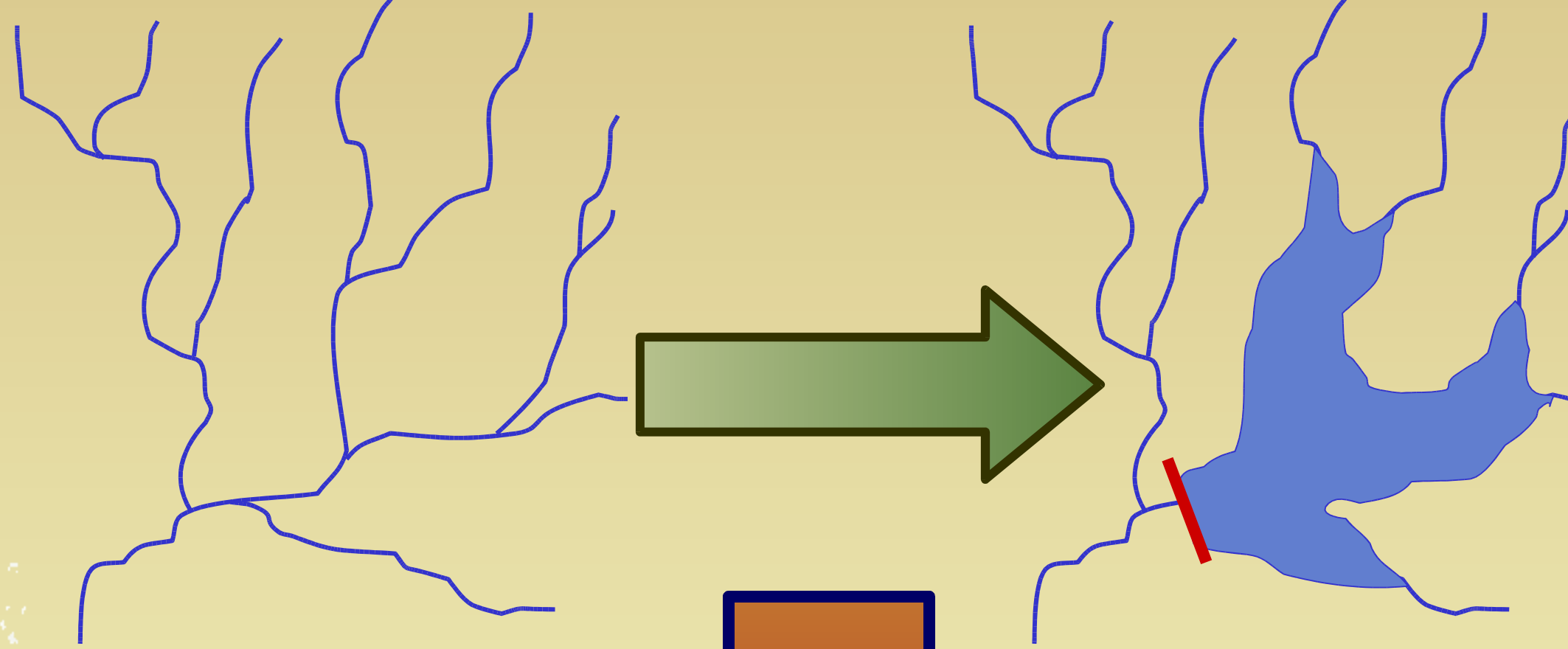
Reduction of distribution range



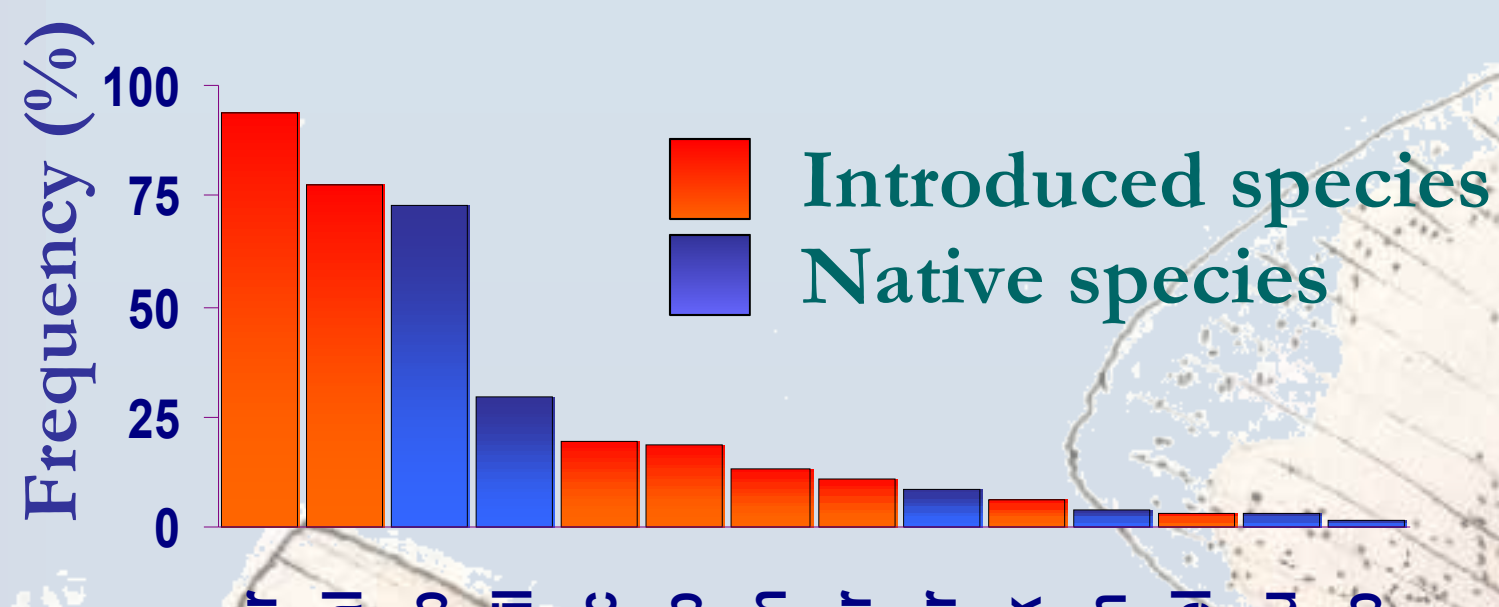
Limit of eel (*Anguilla anguilla*) distribution due to presence of dams (dots) in Iberian Peninsula

Sedentary species - Populations fragmentation - Limitations to reproductive movements

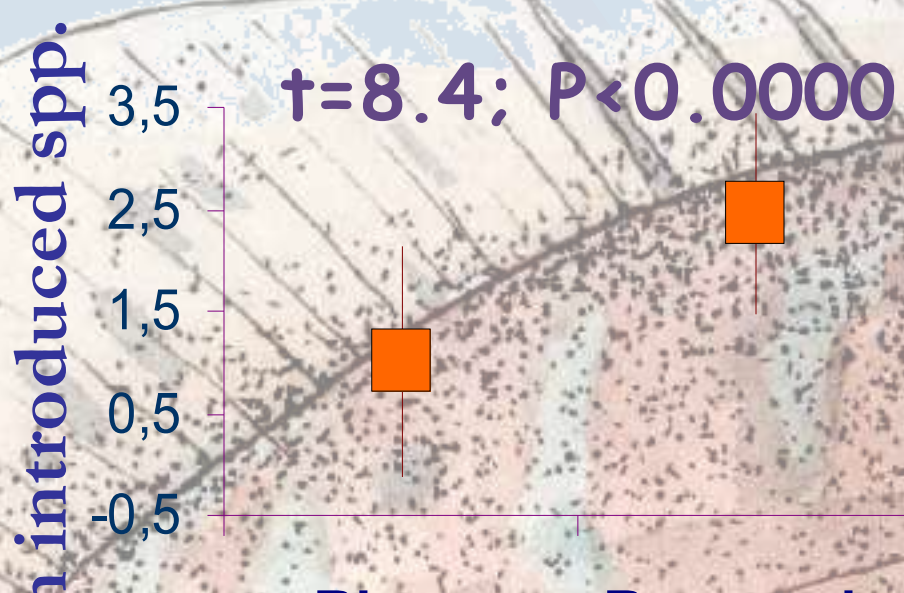
RIVER DAMMING...



INTRODUCED SPECIES



Occurrence of fish species in 108 reservoirs in southern Spain, as reported by anglers (www.apescartocan.com)



Number (mean±SD) of introduced species in rivers transects and reservoirs from southern Spain

	d.f.	F	P	R ²	Variable	F	P
Model	2	119.3	<0.001	0.92	Intercept	4.4	<0.05
Error	22				Area	66.1	<0.001
Total	24				Dams	18.8	<0.001
Model	2	89.4	<0.001	0.89	Intercept	2.9	0.102
Error	22				Dams*Area	89.4	<0.001
Total	24						

Results of two possible models (GLM) analysing the number of introduced species in 25 river basins from central and southern Iberian Peninsula, using basin area and presence/absence of dams as explanatory variables

WHY?

Reservoirs are new (altered) ecosystems, easily invaded by alien species in the Mediterranean area, where natural permanent lentic ecosystems are very scarce

Typical Mediterranean flow fluctuations, that strongly difficult invasions in rivers, are almost completely absent in reservoirs

Many of the introduced species are piscivorous and limnophilic, due to anglers' preferences. This make reservoirs ideal places for illegal (and even legal) releases, which continue nowadays

