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SUPPLEMENTARY MATERIAL

The following supplementary material is available through the online version of this article:

Table S1. – Compilation of the taxa used for the analysis, along with their common names as coded in the FAO database and the corresponding groups (demersal fish, small pelagic fish, medium pelagic fish, cephalopods, crustaceans and bivalves).

Species/taxon	Common names	Group
Atherinidae	Silversides (=Sand smelts) nei	Small pelagic fish
Boops boops (Linnaeus 1758)	Bogue	Demersal fish
Chamelea gallina (Linnaeus 1758)	Striped venus	Bivalves
Engraulis encrasicolus (Linnaeus 1758)	European anchovy	Small pelagic fish
Loliginidae, Ommastrephidae	Squids	Cephalopods
Lophius spp.	Anglerfishes	Demersal fishes
Merluccius merluccius (Linnaeus 1758)	European hake	Demersal fishes
Micromesistius poutassou (Risso 1827)	Blue whiting (=poutassou)	Demersal fishes
Mugilidae	Mullets nei	Demersal fishes
Mullus spp.	Surmullets (=red mullets) nei	Demersal fishes
Mustelus spp.	Smooth-hounds nei	Demersal fishes
Nephrops norvegicus (Linnaeus 1758)	Norway lobster	Crustaceans
Octopodidea	Octopuses	Cephalopods
Parapenaeus longirostris (Lucas 1846)	Deep-water rose shrimp	Crustaceans
Rajiformes	Rays, stingrays, mantas nei	Demersal fishes
Sardina pilchardus (Walbaum 1792)	European pilchard (=sardine)	Small pelagic fish
Sardinella aurita (Valenciennes 1847)	Round sardinella	Small pelagic fish
Scomber spp.	Scomber mackerels nei	Medium pelagic fish
Scophthalmidae	Turbots nei	Demersal fishes
Scorpaenidae	Scorpionfishes, redfishes nei	Demersal fishes
Sepiidae, Sepiolidae	Cuttlefish, bobtail squids nei	Cephalopods
Solea solea (Linnaeus 1758)	Common sole	Demersal fishes
Spicara spp.	Picarels nei	Demersal fishes
Squalus spp.	Dogfishes nei	Demersal fishes
Squilla mantis (Linnaues 1758)	Spottail mantis squillid	Crustaceans
Trachurus spp.	Jack and horse mackerels nei	Medium pelagic fish
Triglidae	Gurnards, searobins nei	Demersal fishes

nei, not elsewhere included.

Comment: Variations in the FAO/GFCM landing database, such as drastic decline in the landings of a specific species paired with a concurrent increase in the landings if its genus or higher taxonomic levels, were addressed by aggregating the data to the higher taxon. Important aquaculture species were omitted from the analysis due to the concerns that their natural and subsequent catches could be influenced by escapes from aquaculture facilities.

Taxa composed of more than one species are compiled as follows:

Atherinidae (includes FAO categories Atherinidae, *Atherina boyeri* and *Atherina hepsetus*)

Loliginidae, Ommastrephidae (includes FAO categories Loliginidae-Ommastrephidae *Loligo* spp., *Loligo vulgaris*, *Loligo forbesii*, *Illex coindetti*, *Alloteuthis* spp., *Alloteuthis media*, *Todarodes sagittatus* and *Todaropsis eblanae*)

Lophius spp. (includes FAO categories *Lophius* spp., *Lophius piscatorius* and *Lophius budegassa*)

Mugilidae (includes FAO categories Mugilidae, *Mugil cephalus*, *Liza* spp., *Liza aurata*, *Liza ramada* and *Liza saliens*)

Mullus spp. (includes FAO categories *Mullus* spp. *Mullus barbatus* and *Mullus surmeletus*)

Mustelus spp. (includes FAO categories *Mustelus* spp., *Mustelus mustelus, Mustelus punctulatus* and *Mustelus asterias*)

Octopodidea (includes FAO categories *Octopus vulgaris, Octopus salutii,* Eledone spp., *Eledone moschata* and *Eledone cirrhosa*)

Rajiformes (includes FAO categories *Raja clavate, Raja asterias, Raja miraletus, Rostroraja alba* and *Leucoraja circularis*)

Scomber spp. (includes FAO categories *Scomber* spp., *Scomber scombrus* and *Scomber colias*)

Scophthalmidae (includes FAO categories Scophthalmidae, *Scophthalmus rhombus* and *Scophthalmus maximus*)

Scorpaenidae (includes FAO categories Scorpaenidae, *Scorpaena* spp., *Scorpaena scorfa*, *Scorpaena porcus*, *Scorpaena notata* and *Scorpaena elongata*)

Sepiidae, Sepiolidae (includes FAO categories Sepiidae-Sepiolidae, *Sepia officinalis* and *Sepia orbignyana*)

Spicara spp. (includes FAO categories *Spicara* spp, *Spicara smaris* and *Spicara maena*)

Squalus spp. (includes FAO categories Squalidae, *Squalus acanthias* and *Squalus blainville*)

Trachurus spp. includes FAO categories *Trachurus* spp., *Trachurus mediterraneus* and *Trachurus trachurus*)

Triglidae (includes FAO categories Triglidae, *Eutrigla gurnardus*, *Chelidonichthys lucerne*, *Aspitrigla cuculus* and *Trigla lyra*)

Table S2. – R packages and functions used in the analyses of the Adriatic Sea fish community.

Analysis	**Package**	**Function**
Heatmap	pheatmap	pheatmap
Principal components analysis	ade4	dudi.pca
Constrained hierarchical clustering	rioja	chclust
Correlation analysis	stats	ccf
Changepoints	changepoint	changepoint()
	bcp	bcp()
	STARS	Rodionov()

Table S3. – Relationship between the analysed taxa and environmental indices (SST, NAO and AMO), indicating the lag with the highest correlation coefficient ($p<0.05$). Non-significant results are denoted by an asterisk.

Nr	Taxa	SST	NAO	AMO
1	*Atherinidae*	Lag -0	Lag-0	Lag-0
2	*Boops boops (Linnaeus 1758)*	Lag -0	*	Lag-0
3	*Chamelea gallina (Linnaeus 1758)*	*	*	*
4	*Engraulis encrasicolus (Linnaeus 1758)*	*	*	*
5	*Loliginidae, Ommastrephidae*	Lag -0	*	*
6	*Lophius spp*	Lag -0	*	Lag-2
7	*Merluccius merluccius (Linnaeus 1758)*	*	Lag-1	*
8	*Micromesistius poutassou (Risso 1827)*	Lag -2	*	Lag-2
9	*Mugilidae*	*	Lag-2	Lag-1
10	*Mullus spp*	Lag-0	Lag-1	Lag-0
11	*Mustelus spp*	Lag-1	Lag-0	Lag-0
12	*Nephrops norvegicus (Linnaeus 1758)*	*	*	*
13	*Octopodidea (superfamily)*	*	*	*
14	*Parapenaeus longirostris (Lucas 1846)*	Lag-0	Lag-0	Lag-2
15	*Rajiformes*	*	*	Lag-0
16	*Sardina pilchardus (Walbaum 1792)*	*	*	*
17	*Sardinella aurita Valenciennes 1847*	Lag-0	Lag-0	Lag-1
18	*Scomber spp*	Lag-0	Lag-2	Lag-1
19	*Scophthalmidae*	Lag-0	Lag-0	Lag-1
20	*Scorpaenidae*	*	*	Lag-1
21	*Sepiidae, Sepiolidae*	Lag-0	*	Lag-0
22	*Solea solea (Linnaeus 1758)*	Lag-0	*	*
23	*Spicara spp*	Lag-0	*	Lag-0
24	*Squalus spp*	Lag-0	*	Lag-0
25	*Squilla mantis (Linnaues 1758)*	*	*	Lag-2
26	*Trachurus spp*	Lag-0	*	Lag-0
27	*Triglidae*	Lag-0	Lag-0	Lag-0
28	*PC 1*	Lag-0	*	Lag-0
29	*PC2*	*	Lag-2	*

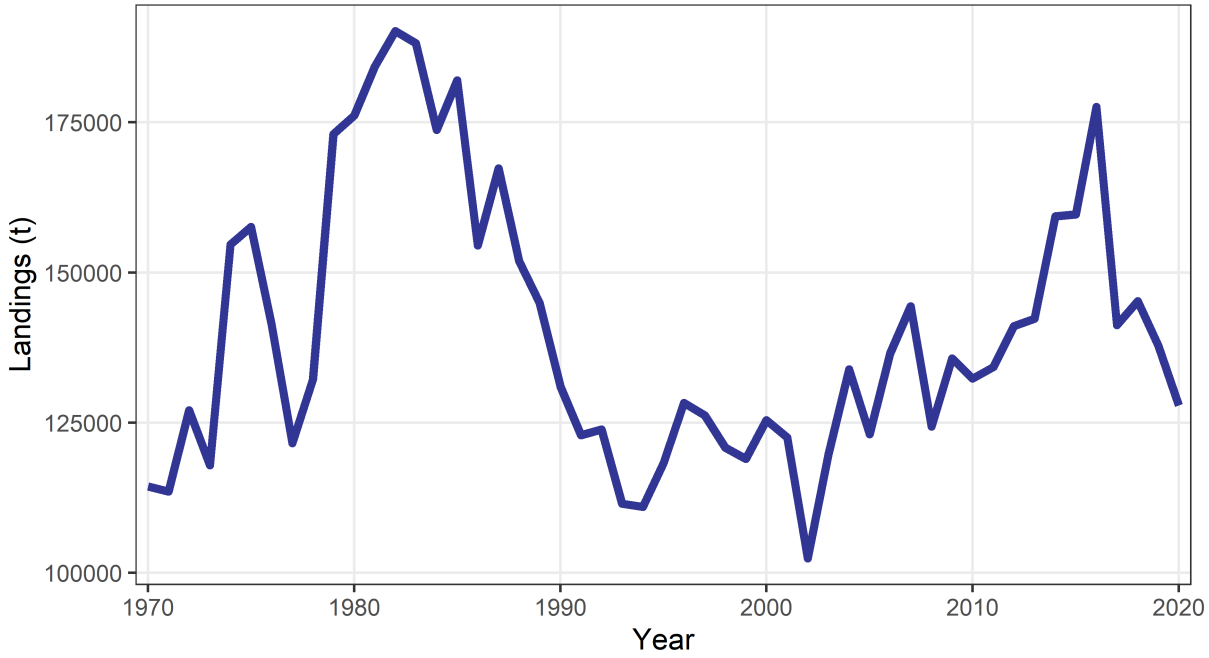

Fig. S1. – Total landings (in tonnes) in the Adriatic during the studied time series (1970–2020).

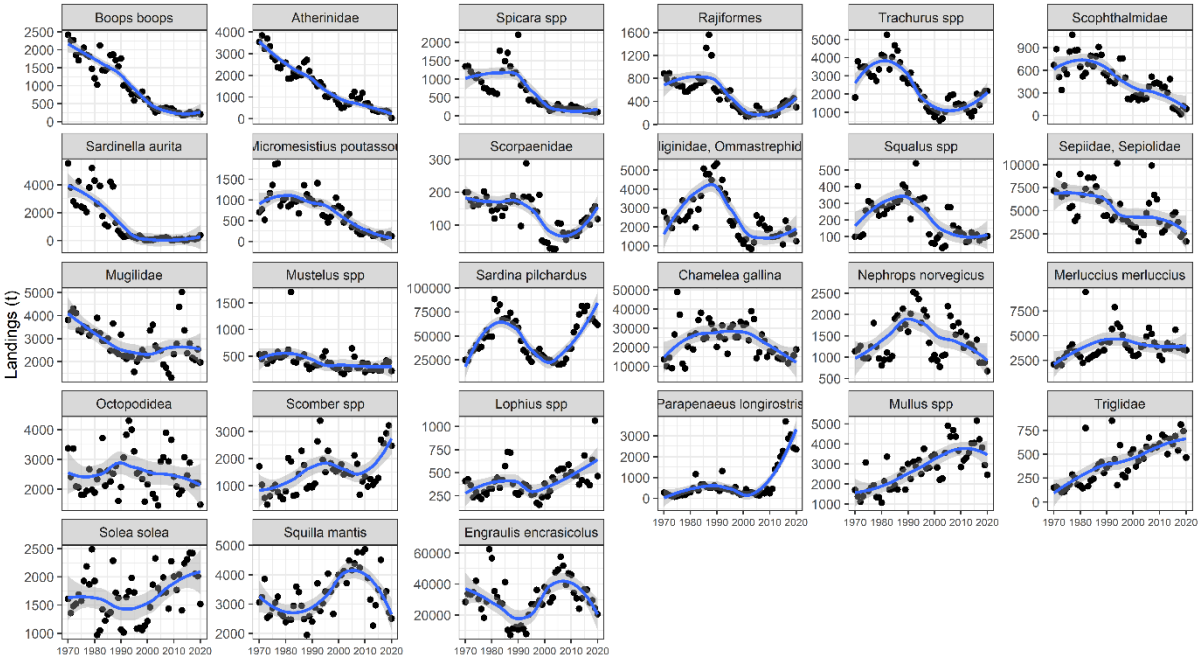

Fig. S2. – Temporal trends of the taxa landings (in tonnes) analysed. The smooth loess (blue line) is applied. Species are sorted according to their contribution to PC 1.

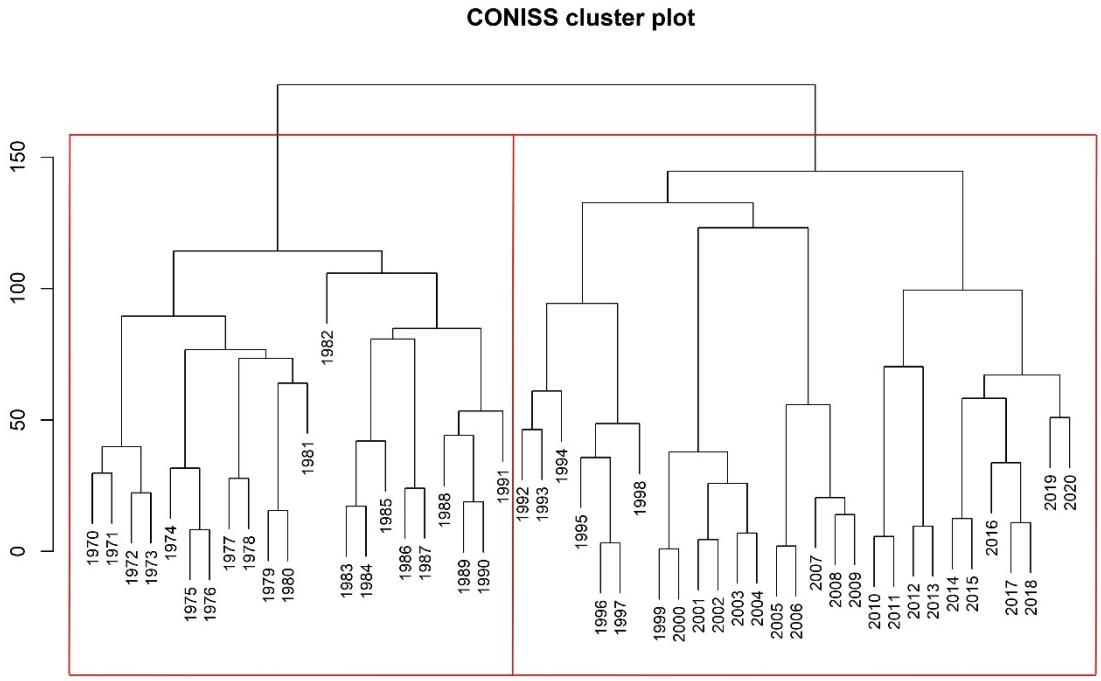

Fig. S3. – Constrained hierarchical cluster plot identifying two distinct clusters highlighted by red rectangles.