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Biology and population dynamics of by-catch fish species of the bottom trawl fishery in the western Mediterranean

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Supplementary Data

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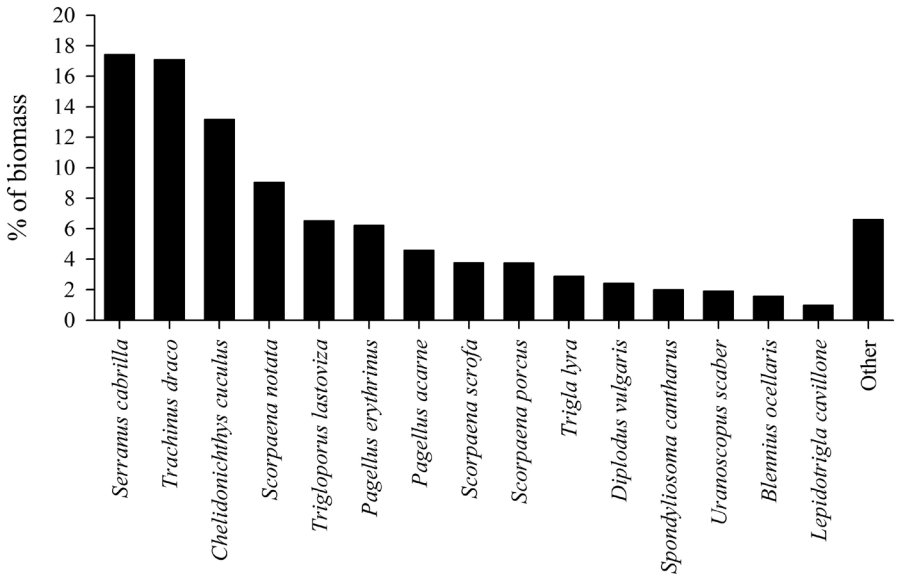

Fig. S1: Species composition (in % of landed biomass) of the mixed fish category (MFC). "Other" are species representing less than 1%: *Trisopterus minutus, Zeus faber, Diplodus annularis, Trachinus radiatus, Helicolenus dactylopterus, Lepidotrigla dieuzeidei, Anthias anthias, Microchirus variegatus, Citharus linguatula, Microchirus ocellatus, Peristedion cataphractum, Callanthias ruber, Scorpaena spp., Scorpaena elongata, Sparidae, Cepola macrophthalma, Phycis blennoides, Microchirus spp., Serranus hepatus, Lophius piscatorius, Phycis phycis, Scorpaena loppei, Thalassoma pavo, Diplodus spp., Gaidropsarus biscayensis, Coris julis, Illex coindetii, Solea spp., Serranus scriba, Ophidion barbatum, Arnoglossus thori, Pagellus spp., Bothus podas, Lophius budegassa, Lepidorhombus boscii, Scomber scombrus, Spicara smaris, Arnoglossus rueppelii, Synchiropus phaeton, Centracanthus cirrus, Pagellus bogaraveo, Merluccius merluccius, Arnoglossus imperialis, Engraulis encrasicolus, Liocarcinus depurator.*

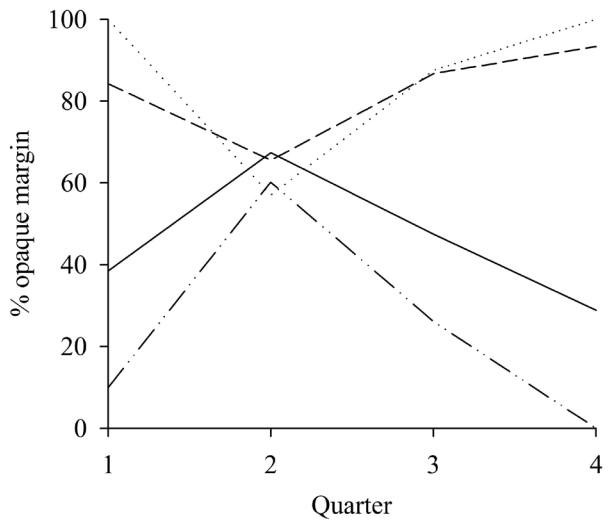

Fig. S2: Quarterly evolution of the % of presence of opaque rings in the margin of the otoliths of the studied species. *Chelidonichthys cuculus:* continuous lines; *Trigloporus lastoviza:* dashed lines; *Serranus cabrilla:* dotted lines; *Trachinus draco:* dash-dotted lines.

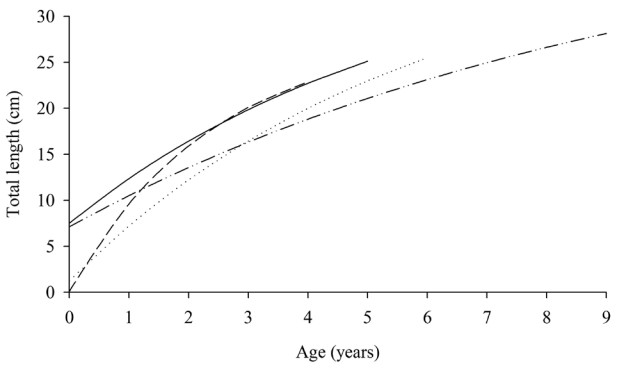

Fig. S3: Fitting of von Bertalanffy growth function to age-length data of the studied species. *Chelidonichthys cuculus:* continuous lines; *Trigloporus lastoviza:* dashed lines; *Serranus cabrilla:* dotted lines; *Trachinus draco:* dash-dotted lines.

Table S1. Summary of the main biological parameters for each species. MED: Mediterranean, AT: Atlantic; TL range: total length range of the individuals studied; Age range: age range of the individuals studied; M: males, F: females, and T: both sexes.

Species	Study Area	TL range (cm)	Age range (years)	L_∞			k			L_{50}			Reference
				T	F	M	T	F	M	T	F	M	
C. cuculus	Aegean Sea (MED)		1-7		28	20		0.22	0.51				Papaconstantinou, 1983
	Mediterranean									19			Bauchot, 1987
	Gulf of Lion (MED)	10.-30	1-5	35			0.28						Campillo, 1992
	Adriatic Sea (MED)	10-36	1-5		29	29		0.40	0.41				Marsan *et al.*, 1998
	Tyrrhenian Sea (MED)	7-27	1-3		24	23		0.74	0.59		18		Colloca *et al.*, 2003
	Adriatic Sea (MED)	10-26									17	15	Vallisneri *et al.*, 2012
	Douarnenez Bay (AT)	14-45	1-21		42	37		0.46	0.52		28	27	Baron, 1985a; 1985b
	English Channel (AT)	9-43	1-4	36	41	36	0.24	0.24	0.23	25			Dorel, 1986; ICES, 2006
	Irish Sea (AT)	10-43	1-7	42	41	41	0.21	0.24	0.21	28	28	26	Marriott *et al.*, 2010
	Gulf of Lion (MED)											$19<L_{50}<21$	Kartas, 1971
	Greek waters (MED)											14	Papaconstantinou, 1986
	Egypt (MED)											15	Abdallah & Faltas, 1998
T. lastoviza	Gulf of Gabès (MED)									14		15	Boudaya, 2000
	Gulf of Tunis (MED)	11-26								16	16	16	Ben Jrad *et al.*, 2010
	Gulf of Gabès (MED)				33	30		0.13	0.13				Boudaya *et al.*, 2010
	Douarnenez Bay (AT)											29	Baron, 1985
	Tunis (MED)									10 (SL)			Bouain, 1981
	Mediterranean									15 (SL)			Bauchot, 1987
S. cabrilla	Aegean Sea (MED)			26			0.30						Papaconstantinou *et al.*, 1994
	Greek waters (MED)		1-8	24			0.30						Politou & Papaconstantinou, 1995
	Cretan Shelf (MED)	6-20	1-5	22			0.39						Tserpes & Tsimenides, 2001
	Edremit Bay (MED)	9-22	1-4	34			0.11			15 (FL)			Torku-Koc *et al.*, 2004
	Aegean Sea (MED)	7-23	1-6	24			0.30			13			İlhan *et al.*, 2010
	Canary Islands (AT)									15 (SL)			García-Díaz *et al.*, 1997
T. draco	Aegean Sea (MED)	15-37									16	15	Kınacıgil *et al.*, 2008
	Black Sea (MED)	9-26	1-6	29	33	29	0.28	0.18	0.17				Ak & Genç, 2013
	Kattegat (AT)	9-40	1-14		38	35		0.15	0.16				Bagge, 2004

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