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Vulnerability of elasmobranchs caught as bycatch in the grouper longline fishery in the Gulf of Gabès, Tunisia

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Fig. S1: Example of species captured in demersal longline fishery in the Gulf of Gabès.

Table S1: Basic size range of life stages used to determine percentage of newborns, juveniles and adults of main elasmobranch species captured in demersal longline fishery in the Gulf of Gabès.

Species	Sex	Size range (cm)	Size range of each life stage			References	Comments
			Newborns	Juveniles	Adults		
<i>Carcharhinus brevipinna</i>	F	103-206	<75	75-196	>196	Capapé, C., Hemida, F., Secka, A.A., Diatta, Y., Guelorget, O. et al., 2003. <i>Distribution and reproductive biology of the spinner shark, Carcharhinus brevipinna (Mueller and Henle, 1841) (Chondrichthyes: Carcharhinidae)</i> . <i>Israel Journal of Zoology</i> , 49, 269-286.	
<i>Carcharhinus plumbeus</i>	M	124-184	<75	75-172	>172	Saidi, B., Bradai, M.N., Bouain, A., Guelorget, O., Capapé, C., 2005. <i>Reproductive biology of the sandbar shark, Carcharhinus plumbeus (Chondrichthyes: Carcharhinidae) from the Gulf of Gabès (southern Tunisia, Central Mediterranean)</i> . <i>Acta Adriatica</i> , 46, 47-62.	
<i>Carcharhinus plumbeus</i>	F	65-214	<70	70-170	>170		
<i>Hepranchias perlo</i>	M	59-173	<70	70-160	>160	Capapé, C., 1980. <i>Nouvelle description de Hepranchias perlo (Bonnatere.1788) (Pisces, Pleurotremata, Hexanchidae)</i> . <i>Données sur la biologie de la reproduction et le régime alimentaire des spécimens des côtes tunisiennes</i> . <i>Bulletin de l'Office National de Pêches Tunisie</i> , 4 (2), 231-264.	
<i>Hepranchias perlo</i>	F	74-109	<35	35-100	>100		
<i>Mustelus mustelus</i>	M	84-108	<35	35-92	>92	Saidi, B., Bradai, M.N., Bouain, A., 2008. <i>Reproductive biology of the smooth-hound shark Mustelus mustelus in the Gulf of Gabès (south-central Mediterranean Sea)</i> . <i>Journal of Fish Biology</i> , 72, 1343-1354.	
<i>Mustelus mustelus</i>	F	50-160	<50	50-123	>123		
<i>Mustelus punctulatus</i>	M	45-137	<50	50-112	>112	Saidi, B., Bradai, M.N., Bouain, A., 2009. <i>Reproductive biology and diet of Mustelus punctulatus (Risso, 1826) (Chondrichthyes: Triakidae) from the Gulf of Gabès, central Mediterranean Sea</i> . <i>Scientia Marina</i> , 73 (2), 249-258.	
<i>Mustelus punctulatus</i>	F	60-120	<35	35-100	>100		
<i>Mustelus punctulatus</i>	M	70-100	<35	35-88,5	>88,5		

Continued

Table S1 continued

Species	Sex	Size range (cm)	Size range of each life stage			Adults	References	Comments
			Newborns	Juveniles	Adults			
<i>Scyliorhinus canicula</i>	F	19-40	<25	25-44	>44	Capapé, C., Mnasri_Sioudi, N., El Kamel_Moutalibi, O., Boumaïza, M., Ben Amo, M. M. et al., 2014. Production, Maturity, Reproductive Cycle and Fecundity of Small-Spotted Catshark, <i>Scyliorhinus canicula</i> (Chondrichthyes: Scyliorhinidae) from the Northern Coast of Tunisia (Central Mediterranean). <i>Journal of Ichthyology</i> , 54, 111-126.		
	M	21-38	<25	25-45	>45	Marouani, S., 2013. <i>Systématique et éco-biologie de Squalus blainvilliei</i> (Risso, 1827) et <i>Squalus megalops</i> (Macleay, 1881) (Chondrichthyes, Squalidae) du golfe de Gabès (Méditerranée centrale). PHD Thesis. University of Sfax, Tunisia, 220 pp.	Considering the confusion betwee species and the size range captured we have considered those of <i>Squalus blainvilliei</i>	
<i>Squalus spp.</i>	F	60-92	<30	30-60	>60			
	M	48-67	<30	30-50	>50			
<i>Aetomylaeus bovinus</i>	F	40-148	<35	35-90	>90	Capapé, C., Quignard, J.P., 1975. Contribution à la systématique et à la biologie de <i>Pieromylaeus bovinus</i> (Geoffroy Saint-Hilaire, 1817), (Pisces, Myliobatidae) des côtes tunisiennes. <i>Bulletin du Muséum National d'Histoire Naturelle</i> , Paris, 3ème série, n° 338, Zoologie, 240, 1329-1347.		
	M	59-153	<35	35-80	>80			
<i>Dasyatis spp.</i>	F	25-70	<20	20-40	>40	Saadaoui, A., 2016. Statut taxonomique, Pêche et Eco-Biologie de deux pastenagues : <i>Dasyatis pastinaca</i> et <i>D. cf tortonesei</i> du golfe de Gabès (Tunisie). PHD Thesis. University of Sfax, Tunisia, 215 pp.	Considering the confusion betwee species, and that range sizes of life stages were quite similar we have considered those of <i>Dasyatis pastinaca</i> .	
	M	20-60	<20	20-33	>33			
<i>Glaucostegus cemiculus</i>	F	54-180	<45	45-138	>138	Enajjar, S., Bradai, M. N., Bouain, A., 2012. Age, growth and sexual maturity of the blackchin guitarfish <i>Rhinobatos cemiculus</i> in the Gulf of Gabès (southern Tunisia, central Mediterranean). <i>Cahiers de Biologie Marine</i> , 53, 17-23.		
	M	20-60	<20	20-33	>33			

Continued

Table S1 continued

Species	Sex	Size range (cm)	Size range of each life stage			References	Comments
			Newborns	Juveniles	Adults		
<i>Gymnura altavela</i>	M	55-161	<45	45-112	>112	Capapé, C., Zaouali, J., Tomasini, J.A., Bouchereau, J.L., 1992. Reproductive biology of the spiny butterfly ray, <i>Gymnura altavela</i> (Linnaeus, 1758) (Pisces: Gymnuridae) from off the Tunisian coasts. <i>Scientia Marina</i> , 56 (4), 347-355.	
	F	108-142	<35	35-108	108		
<i>Raja clavata</i>	M	87-116	<35	35-78	78	Kadri, H., Marouani, S., Saidi, B., Bradai, M.N., Bouain, A. et al., 2014. Age, growth, sexual maturity and reproduction of the thornback ray, <i>Raja clavata</i> (L.), of the Gulf of Gabès (south-central Mediterranean Sea). <i>Marine Biology Research</i> , 10, 416-425.	
	F	30-66	<25	25-56	>56		
<i>Raja radula</i>	M	25-56	<25	25-44	>44	Kadri, H., Marouani, S., Bradai, M.N., Bouain, A., 2013. Age, growth and reproductive biology of the rough skate, <i>Raja radula</i> (Chondrichthyes: Rajidae), off the Gulf of Gabes (southern Tunisia, central Mediterranean). <i>Marine and Freshwater Research</i> , 64, 540-548.	
	F	20-50	<20	20-38	>38		
	M	20-50	<20	20-32	>32		