

Stock Biomass, Species Composition, Depth and Seasonal Distribution of Elasmobranches in the Iskenderun Bay, Northeastern Mediterranean Coast of Turkey



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Monitoring of Elasmobranch Species

Project Title:

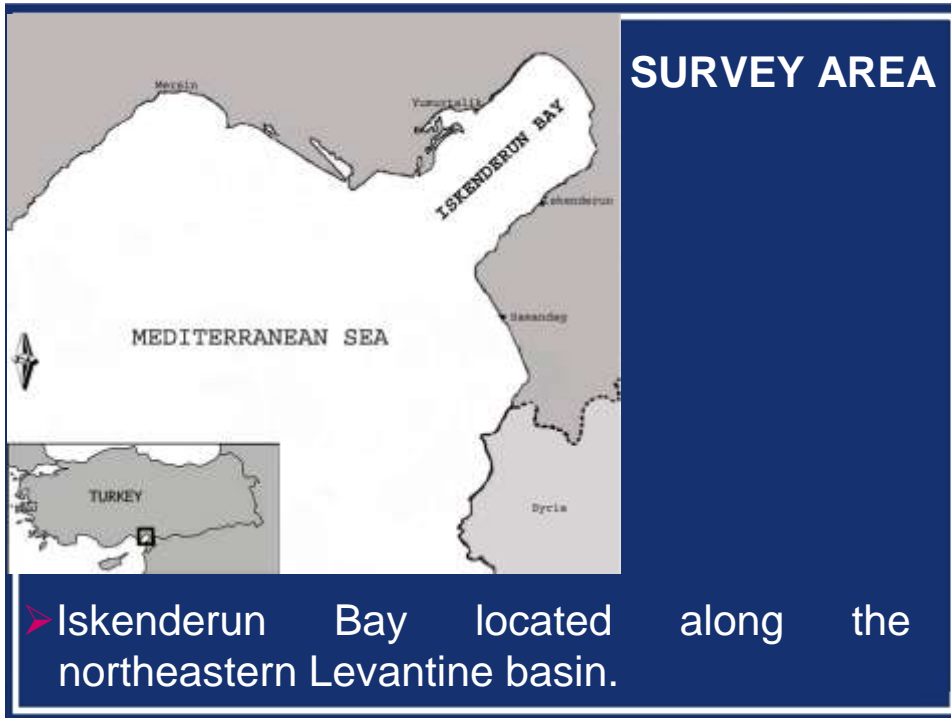
The Effects of Global Climate Change on Fish Populations in the Eastern Mediterranean Sea

Supportin Organization:

The Ministry of Agriculture and Rural Affairs

Coordinator: Cemal Turan

Starting and Ending: 2009-2012



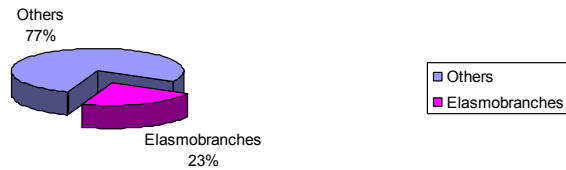
- The bay has a euphotic water column, and nutrition amounts are 2-4 times higher than offshore
- The bay has a rocky bottom in the southeast and northeast
- The bay is reseaving high number of indo-Pacific migrant species (invasive).

- The bay has the largest fishery fleets of the Mediterranean coast of Turkey.
- The composition and amount of fishery is changing in years due to the invasive species or/and climate change



- Total biomass, species composition, depth distribution, seasonal distribution and abundance of elasmobranchs are examined.
- Swept-area method was used for biomass estimation.
- Commercial bottom trawlers
- Data from 52 bottom trawl surveys are considered between 2009 and 2010.

Ratio of elasmobranchs in the total catch by trawling in the Bay of Iskenderun

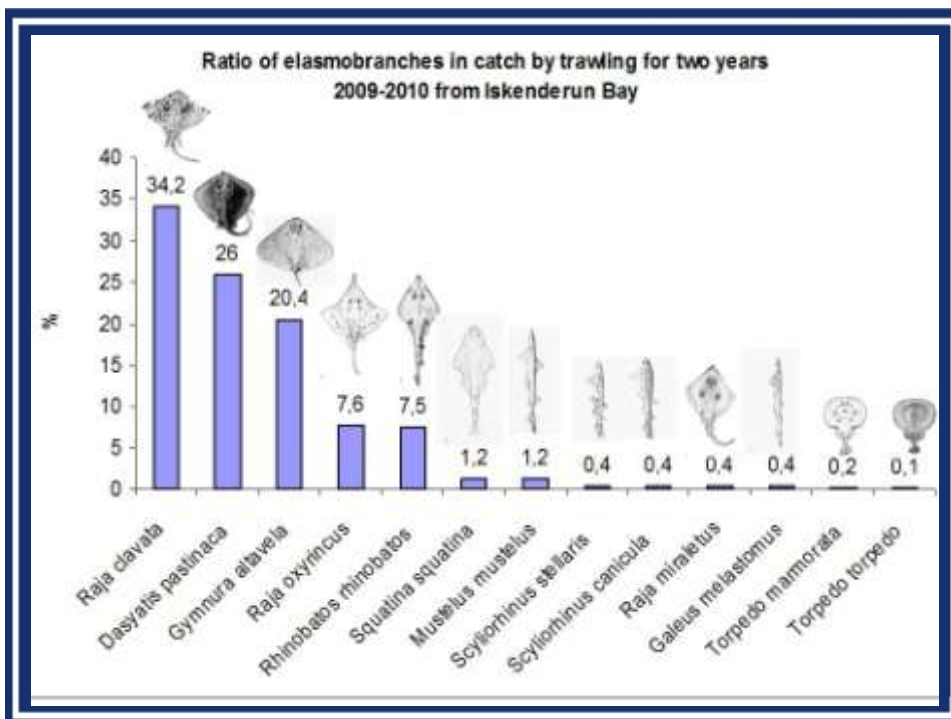


- In regard to total stock biomass estimates, elasmobranchs constituted 23 percent (190,06 kg/km²) of total biomass (650,715 kg/km²) in the Iskenderun Bay.

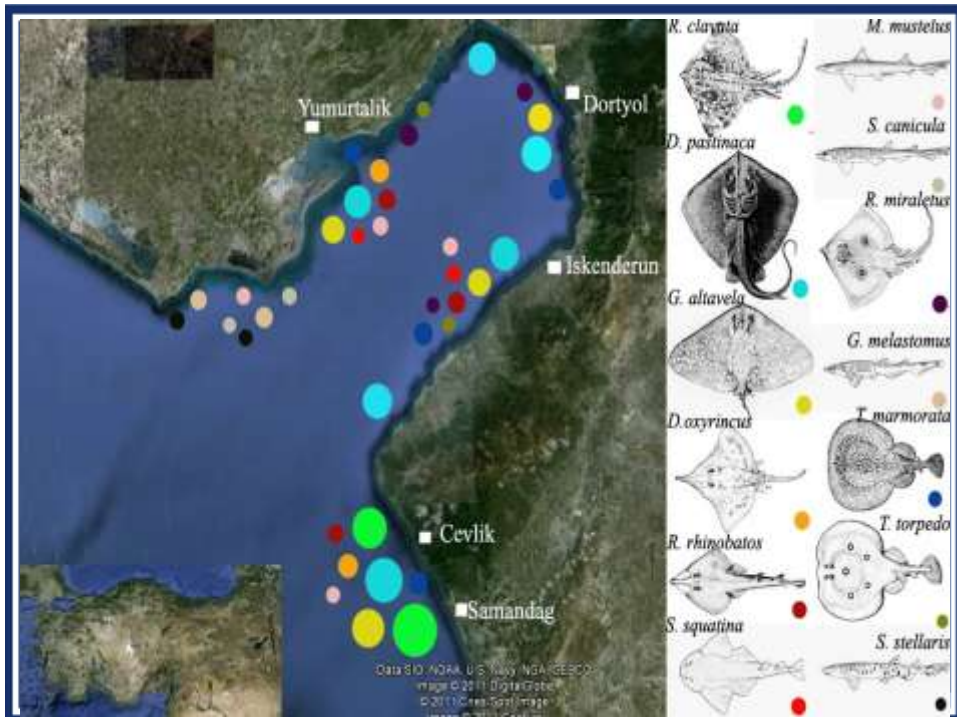
Raja clavata,
Dasyatis pastinaca
Gymnura altavela

- showed high **occurrence** of the whole biomass of the elasmobranchs

- Shark species, *Squatina squatina*, *Mustelus mustelus*, *Scyliorhinus stellaris*, *Scyliorhinus canicula*, *Galeus melastomus*, represented low percents of the whole biomass of the elasmobranches respectively.
- The other species, *Raja oxyrinchus*, *Rhinobatos rhinobatos*, *Raja miraletus*, *Torpedo marmorata*, *Torpedo torpedo* comprised 7.6, 7.5, 0.4, 0.2, 0.1 percents of total biomass of the elasmobranches respectively.

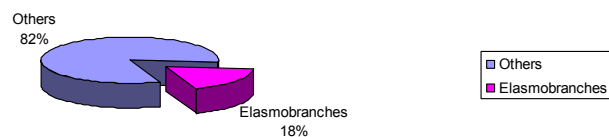


➤ Distribution and amount of catch of Elasmobranch species in the Iskenderun Bay



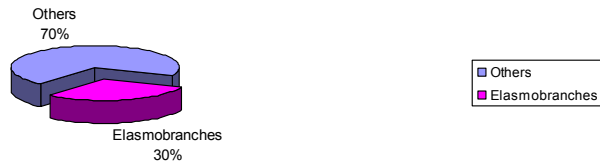
➤ Seasonal Distribution of total catch of Elasmobranchs

The ratio of elasmobranchs caught by trawling during autumn, 2009-2010 in the total catch



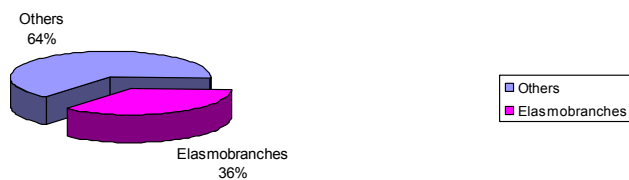
- A total 182 kg/km² of elasmobranchs were collected in İskenderun Bay, representing 18% of the total biomass in autumn

The ratio of elasmobranchs caught by trawling during winter,
2009-2010 in total catch



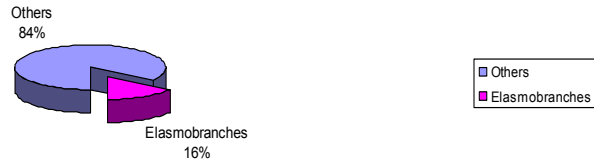
- The elasmobranchs represent 30% of the total biomass in winter.
- Total biomass was being 864 kg/km² of which elasmobranchs comprise 259 kg/km²

The ratio of elasmobranchs caught by trawling during spring,
2009-2010 in total catch



- The elasmobranchs represent 36% of the total biomass in spring.
- Total biomass was being 434 kg/km² of which elasmobranchs comprise 155 kg/km²

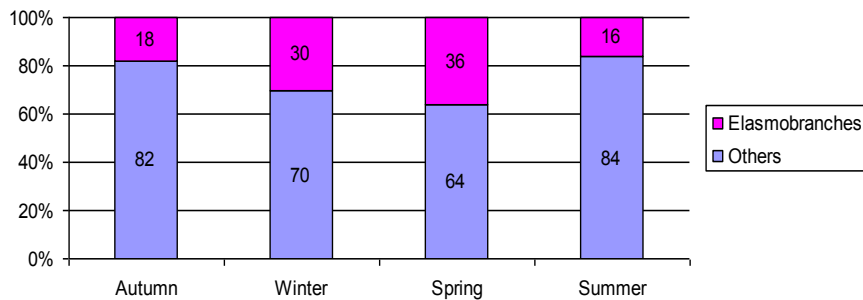
The ratio of elasmobranchs caught by trawling during summer, 2009-2010 in total catch



- The elasmobranchs represent of 16% of the total biomass in summer.

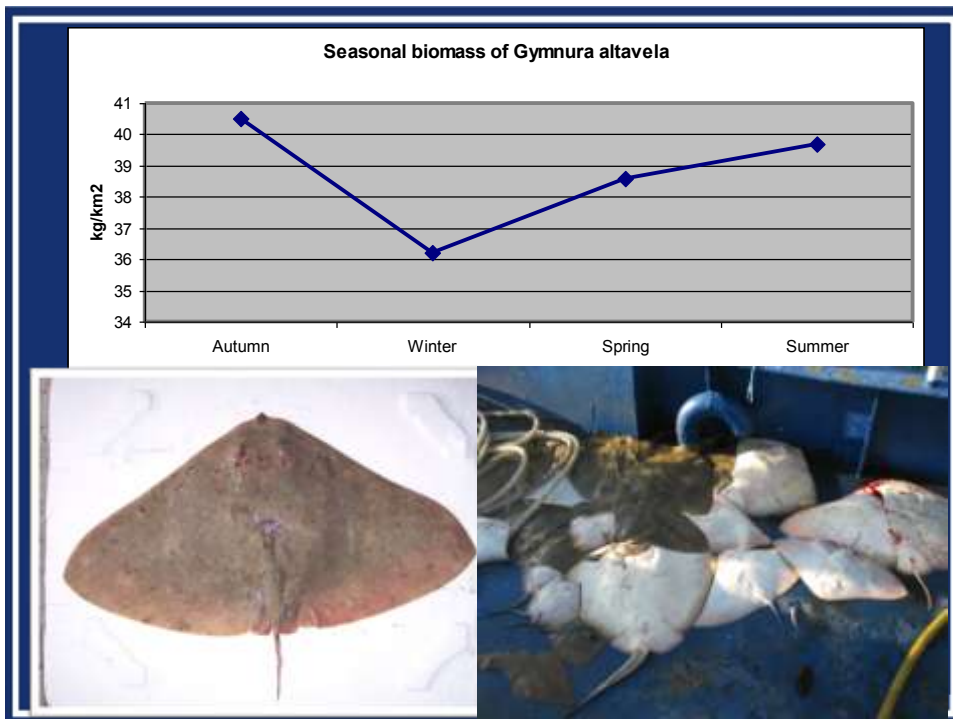
Total biomass was being 1038 kg/km² of which elasmobranchs comprise 162 kg/km² of that in Iskenderun Bay.

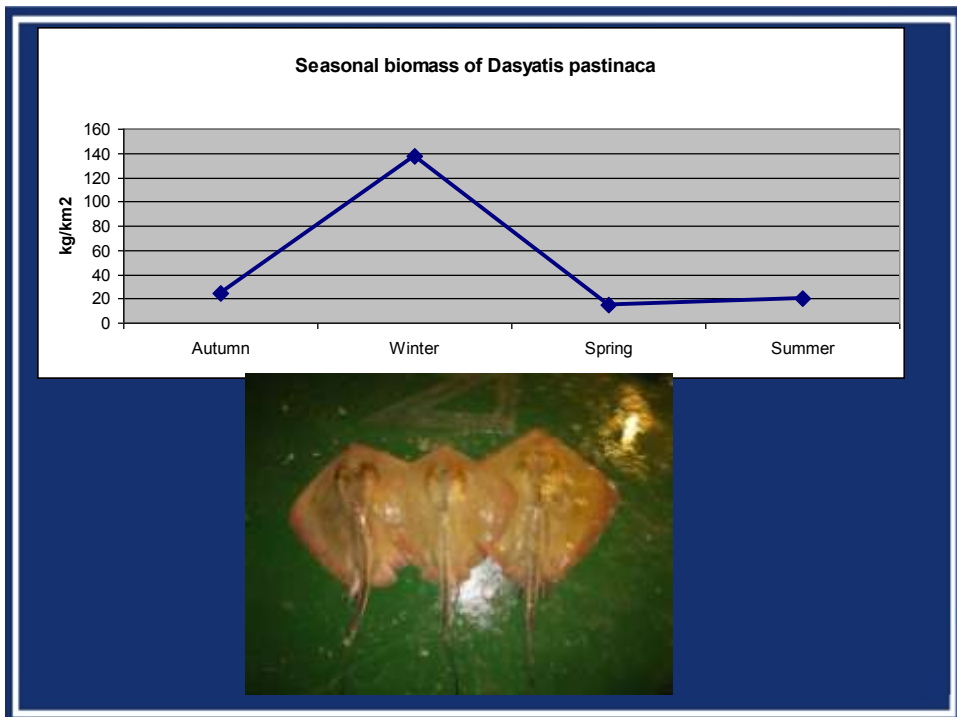
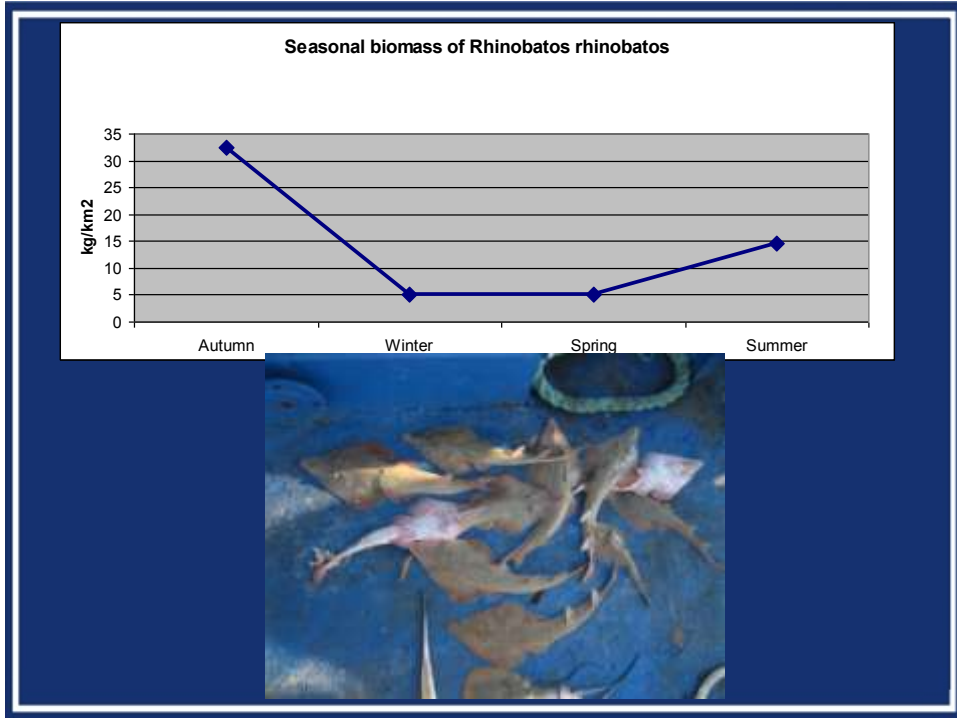
Seasonal distribution of elasmobranchs in the Iskenderun Bay

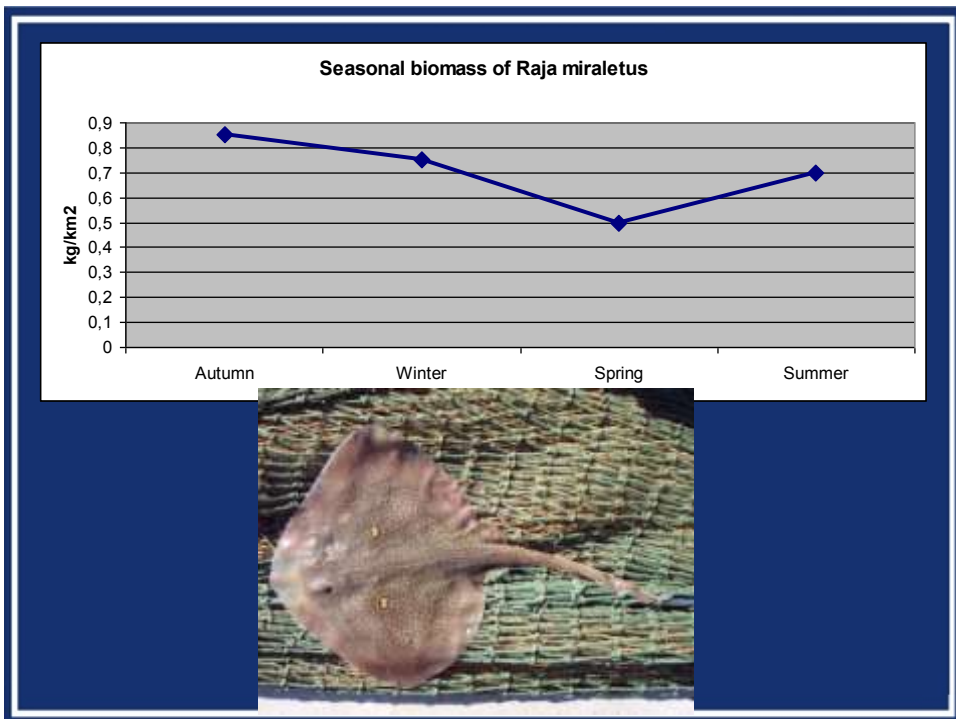
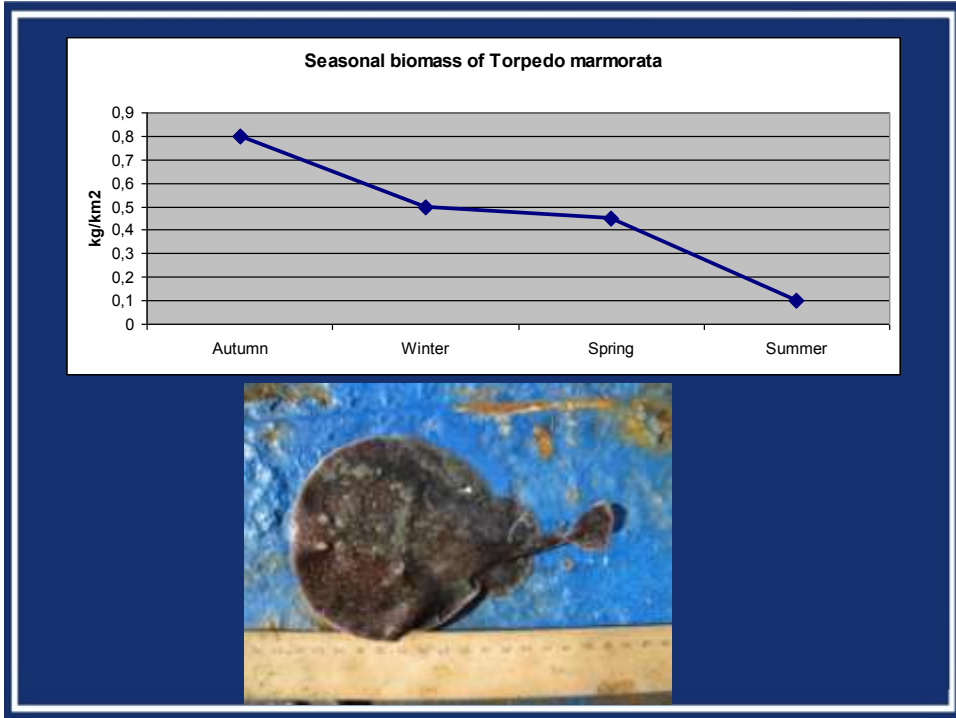


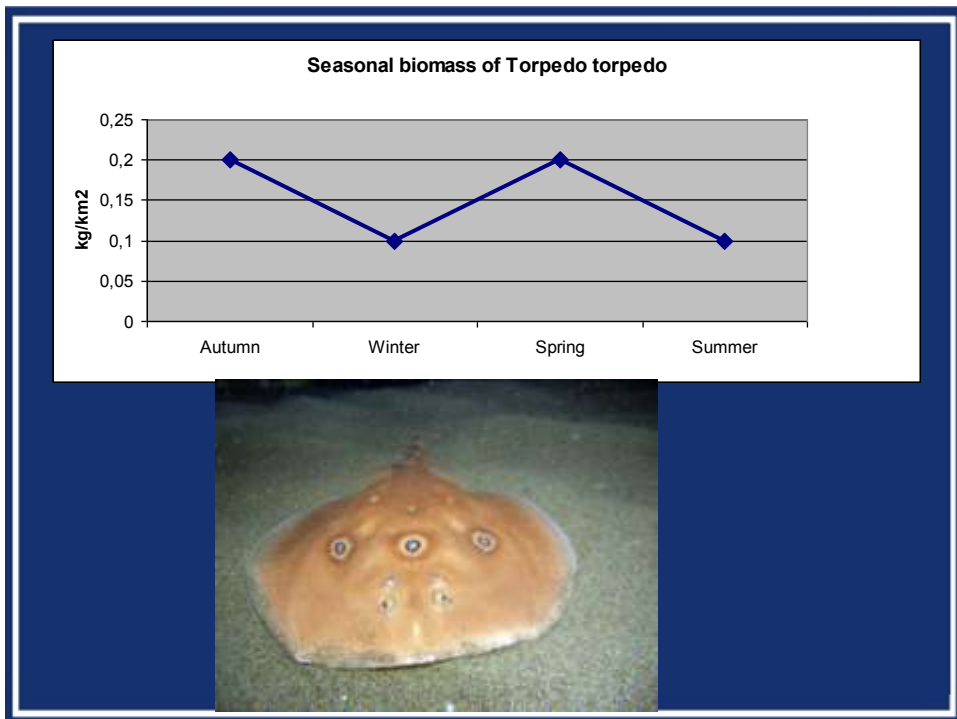
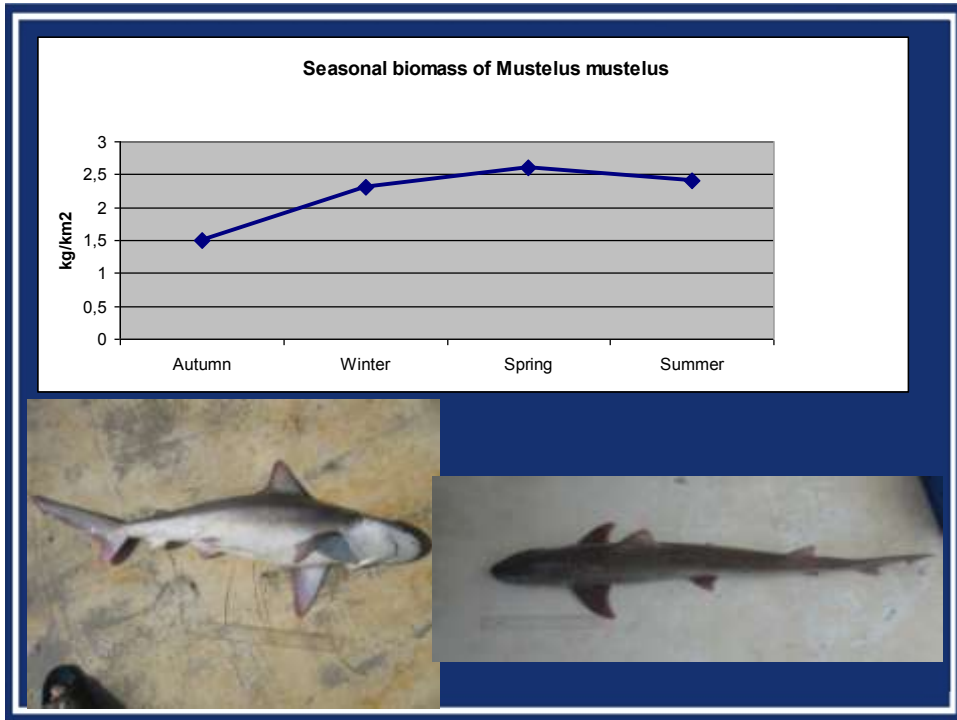
- Total catch of fish were 843, 605, 279, 876 kg/km², of which elasmobranchs species constitute 183, 259, 155, 162 kg/km² in autumn, winter, spring and summer respectively.

Seasonal distribution of some Elasmobranch species

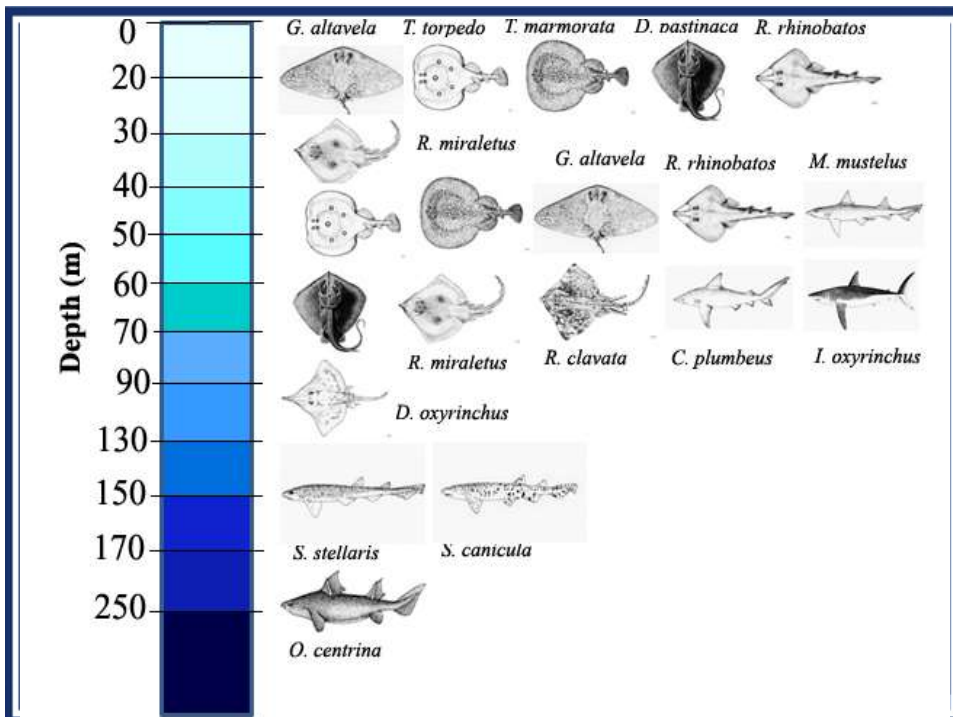








Depth distribution of Elasmobranchs trawled in the Iskenderun Bay



- Single or sporadic captures were also recorded for;

Isurus oxyrinchus

Carcharhinus plumbeus

Carcharhinus altimus

Oxynotus centrina

Raja radula

Isurus oxyrinchus





Carcharhinus plumbeus



Carcharhinus altimus

Oxynotus centrina



Raja radula



Rhinoptera marginata



Pteromylaeus bovinus



□ Conservation status of Elasmobranchs species caught as target and by-catch in commercial fisheries in Iskenderun Bay

Common Name	Scientific Name	Catch composition (%)	Biyomass (kg/km ²)	IUCN Global and Regional Red List Status
Shortfin mako	<i>Isurus oxyrinchus</i>	-	-	VU; CR in MDT
Sandbar shark	<i>Carcharhinus plumbeus</i>	-	-	NT; EN in MDT
Blackmouth catshark	<i>Galeus melastomus</i>	0.35		LC in MDT
Smooth-hound	<i>Mustelus mustelus</i>	1.15	2.20	LC; VU in MDT
Small spotted catshark	<i>Scyliorhinus canicula</i>	0.37	0.70	LC in MDY
Nursehound	<i>Scyliorhinus stellaris</i>	-	-	NT in MDT
Angular roughshark	<i>Oxynotus centrina</i>	-	-	VU; CR in MDT
Angelshark	<i>Squatina squatina</i>	1.23	2.35	CR; CR in MDT
Common stingray	<i>Dasyatis pastinaca</i>	24.04	49.50	NT in MDT
Spiny butterfly ray	<i>Gymnura altavela</i>	20.38	41.96	VU; CR in MDT
Longnosed skate	<i>Dipturus oxyrinchus</i>	7.62	14.50	NT; NT in MDT
Thornback ray	<i>Raja clavata</i>	34.17	64.95	NT; NT in MDT
Brown ray	<i>Raja miraletus</i>	0.36	0.70	LC in MDT
Common guitarfish	<i>Rhinobatos rhinobatos</i>	7.51	14.28	EN; EN in MDT
Common torpedo	<i>Torpedo torpedo</i>	0.07	0.13	LC in MDT
Spotted torpedo	<i>Torpedo marmorata</i>	0.24	0.46	LC in MDT
Lusitanian cownose ray	<i>Rhinoptera marginata</i>	-	-	NT in MDT
Bull ray	<i>Pteromylaeus bovinus</i>	-	-	DD
Rough ray	<i>Raja radula</i>	-	-	DD in MDT

Thanks . . .

