OCCURRENCE OF THE RARE ANGULAR ROUGH SHARK, *OXYNOTUS CENTRINA,* (CHONDRICHTHYES: OXYNOTIDAE) IN THE GREEK SEAS

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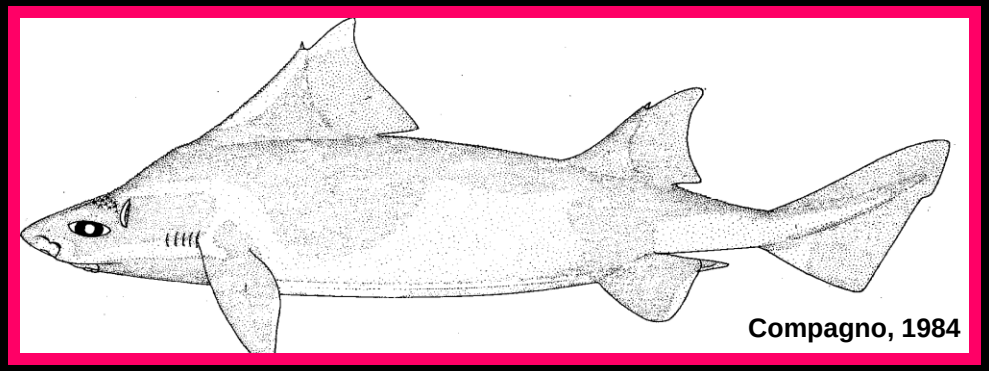


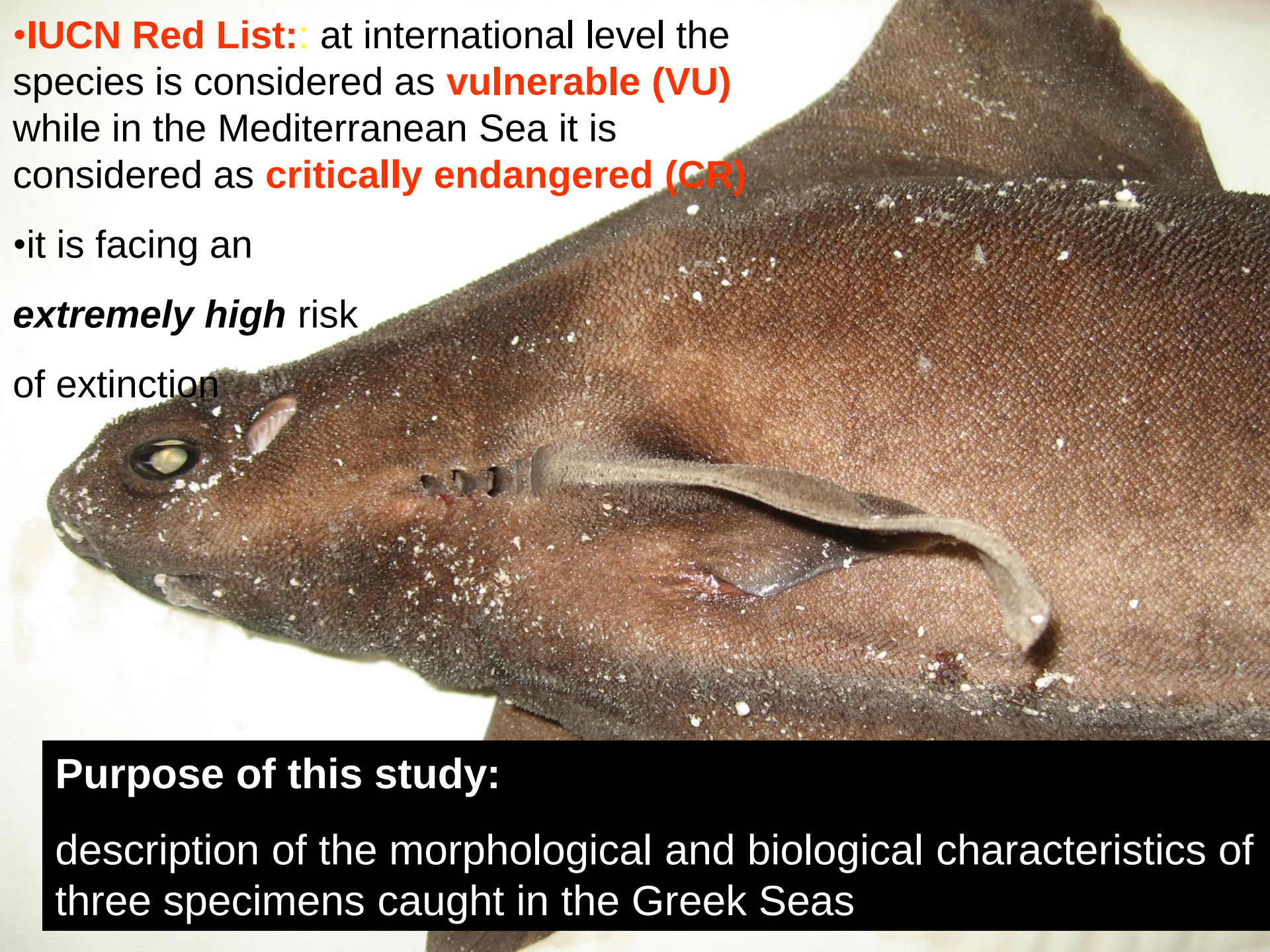
Tunisia, September 2010

Oxynotus centrina (Linnaeus 1758)

- Rare, bathydemersal shark
- Distributed throughout the entire Mediterranean Sea and the Eastern Atlantic
- maximum size of 150 cm
- Ovoviviparous with litters of 10 to 15 pups
- It feeds mainly on polychaetes and cephalopods (Compagno 1984)





•**IUCN Red List:**: at international level the species is considered as **vulnerable (VU)** while in the Mediterranean Sea it is considered as **critically endangered (CR)**

•it is facing an

extremely high risk

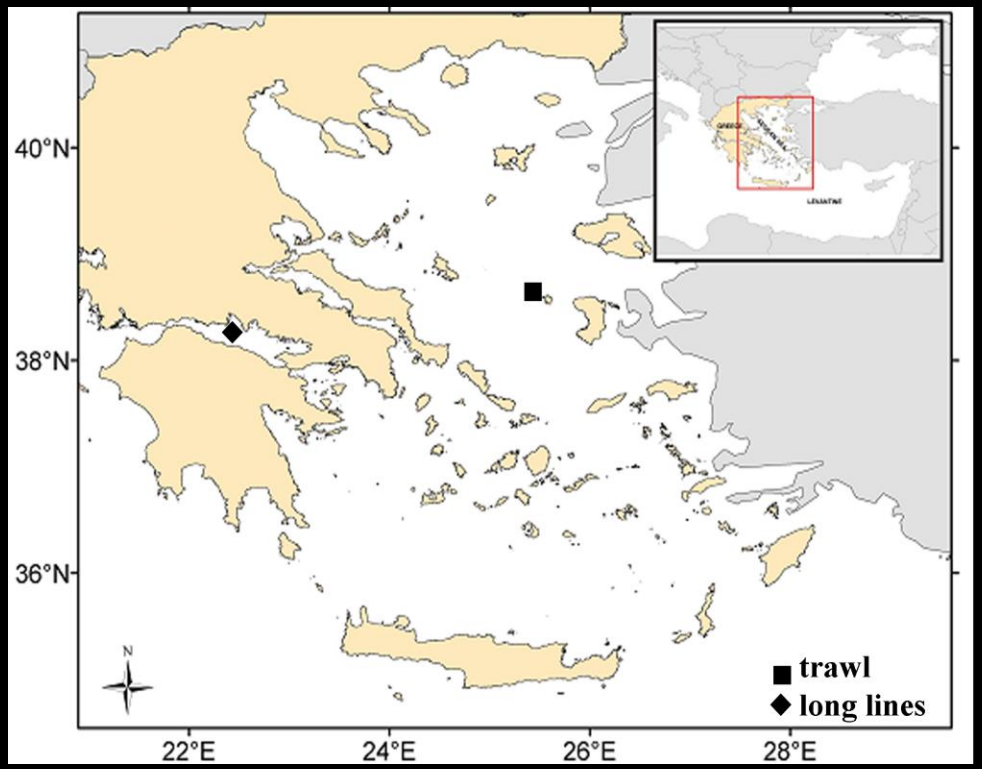
of extinction

Purpose of this study:

description of the morphological and biological characteristics of three specimens caught in the Greek Seas

Materials and Methods

during the 6 year period, from 2004 to 2010

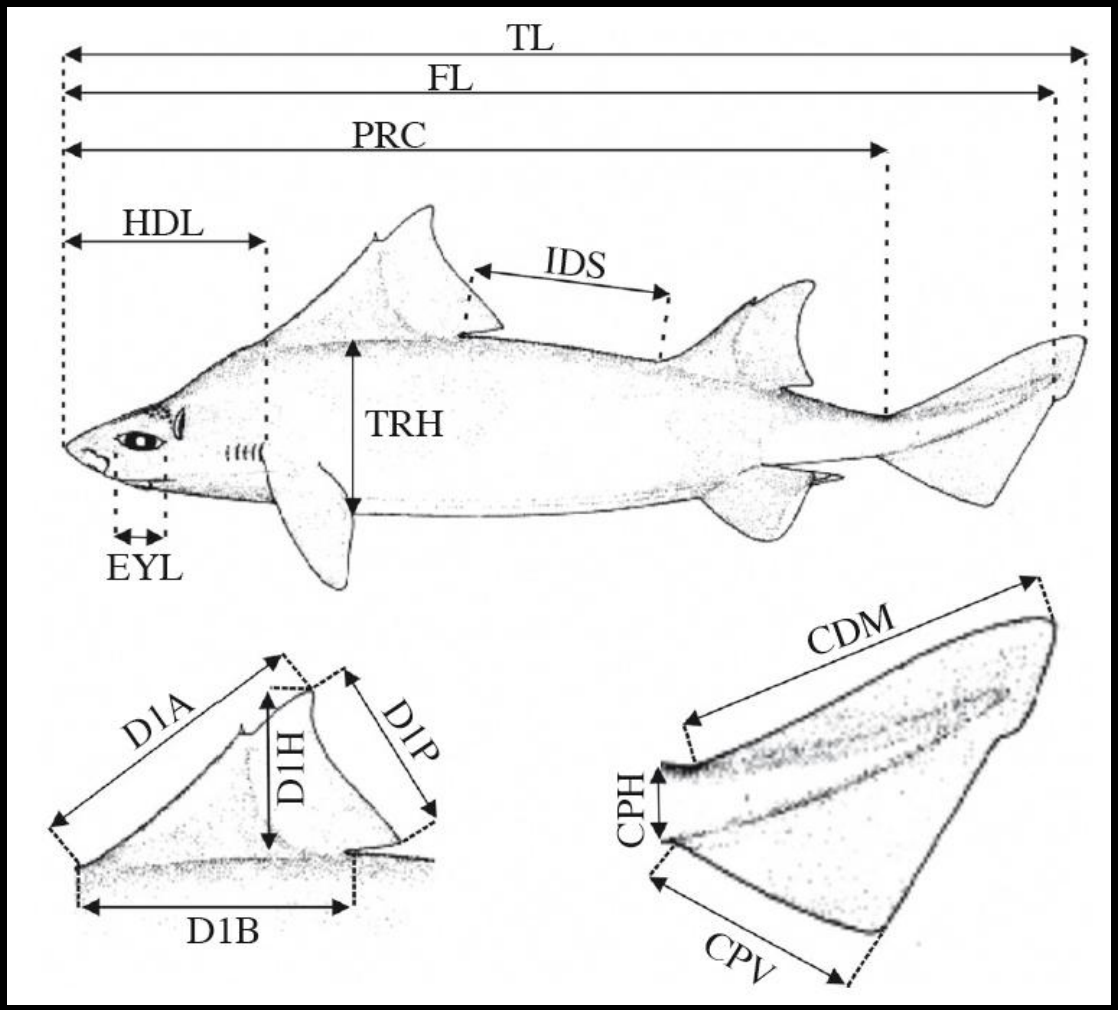


Two specimens were captured:

- with trawl fishery
- in the NE Aegean Sea
- in October of 2008
- at depth of 130 m

One specimen was captured:

- with longline
- in the Korinthiakos Gulf
- in June of 2010
- at depth of 180 m



Series of morphometric measurements taken for the specimens (from Megalofonou and Damalas 2004).

- Round weight (RW) was measured in g and morphometric measurements were taken to the nearest mm (Compagno 1984)
- The % ratios of the morphometric measurements in total length were calculated
- Sex and sexual maturity stage were determined macroscopically (Stehmann, 1987).
- Gonadosomatic (GSI) and hepatosomatic (HSI) indexes were calculated

Results and discussion

Specimen 1: NE Aegean

female - 1649 g (RW) - 533 mm (TL)

HSI: 26.6% - GSI: 0.4

Specimen 2: NE Aegean

female - 1703 g (RW) - 565 mm (TL)

HSI: 33.5% - GSI: 0.8

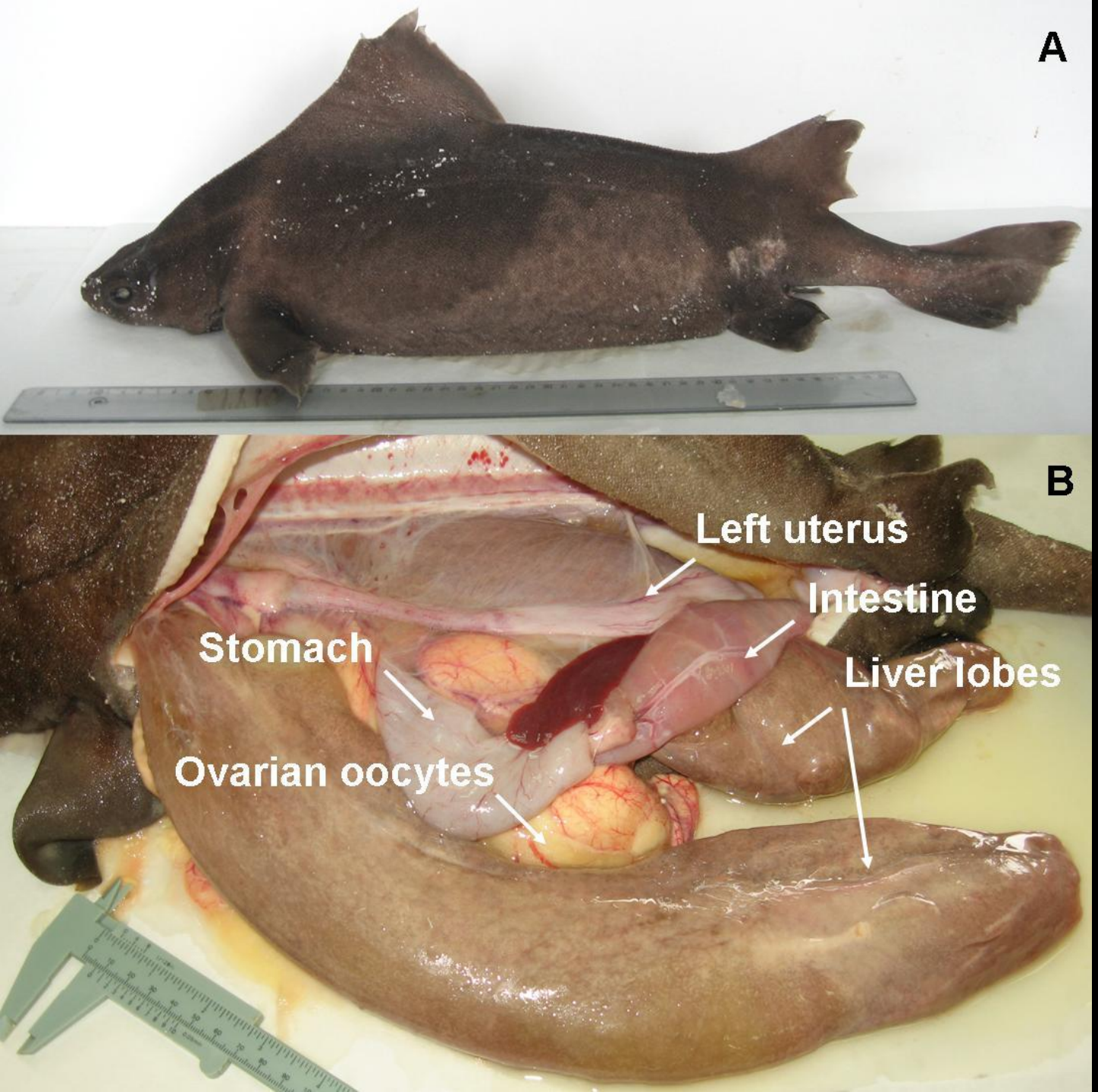
Specimen 3: Korinthiakos Gulf

female - 5020 g (RW) - 790 mm (TL)

HSI: 35.8% - GSI: 8.1

Some morphometric measurements and proportional values for the three angular rough sharks caught in Greek Seas

Morphometric characteristics	Morphometrics in mm					
	Specimen 1	% TL	Specimen 2	% TL	Specimen 3	% TL
TL (Total length)	533	100	565	100	790	100
POB (Preorbital length)	27	5.1	28	5.0	30	3.8
PSP (Prespiracular length)	53	9.9	60	10.6	61	7.7
PGI (Prebranchial length)	85	15.9	88	15.6	96	12.2
HDL (Head length)	105	19.7	111	19.6	131	16.6
IDS (Interdorsal space)	87	16.3	112	19.8	141	17.8
DCS (Dorsal-caudal space)	48	9.0	49	8.7	65	8.2
PD1 (Pre-first dorsal length)	118	22.1	122	21.6	142	18.0
PD2 (Pre-second dorsal length)	302	56.7	353	62.5	421	53.3
PP1 (Prepectoral length)	91	17.1	102	18.1	128	16.2
PP2 (Prepelvic length)	329	61.7	367	65.0	444	56.2
PPS (Pectoral-pelvic space)	201	37.7	223	39.5	304	38.5
D1H (First dorsal height)	76	14.3	78	13.8	83	10.5
D1B (First dorsal base)	95	17.8	102	18.1	138	17.5
D2H (Second dorsal height)	44	8.3	64	11.3	66	8.4
D2B (Second dorsal base)	62	11.6	79	14.0	86	10.9
CPH (Caudal peduncle length)	22	4.1	25	4.4	31	3.9
HDH (Head hight)	65	12.2	93	16.5	89	11.3
TRH (Trunk height)	90	16.9	103	18.2	103	13.0
ABH (Abdomen height)	92	17.3	122	21.6	146	18.5
MOL (Mouth length)	8	1.5	8	1.4	19	2.4
MOL (Mouth width)	39	7.3	43	7.6	52	6.6
INW (Internarial space)	16	3.0	19	3.4	20	2.5
PRN (Prenarial length)	8	1.5	9	1.6	10	1.3
POR (Preoral length)	29	5.4	33	5.8	35	4.4
ESL (Eye spiracle space)	6	1.1	9	1.6	11	1.4


A
B
Left uterus
Intestine
Stomach
Liver lobes
Ovarian oocytes

- the female found in Korinthiakos Gulf is actually the ***first record*** of the species in this region and the ***largest*** ever recorded in the Greek waters
- This specimen contained large yellow yolk oocytes while its uteri were in resting phase.
- The other two specimens were immature having not well developed ovaries and narrow uteri
- all females showed higher HSI than that of the pregnant female caught in central Aegean Sea (HSI: 18.8%) (Megalofonou and Damalas 2004)
- no visible asymmetry was found between the two liver lobes

- In Greece, *Oxynotous centrina* does not have an economical value and
- it is generally caught as by-catch and discarded by fishermen at sea.
- Every possible record of the species is considered of high importance, due to its vulnerable state.
- Further research and systematic monitoring of the landings and by-catch of the uncommon species are needed, in order to assess better their population structure and trends.