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Protecting the Endangered Rough Skate Raja radula in the Thracean Sea

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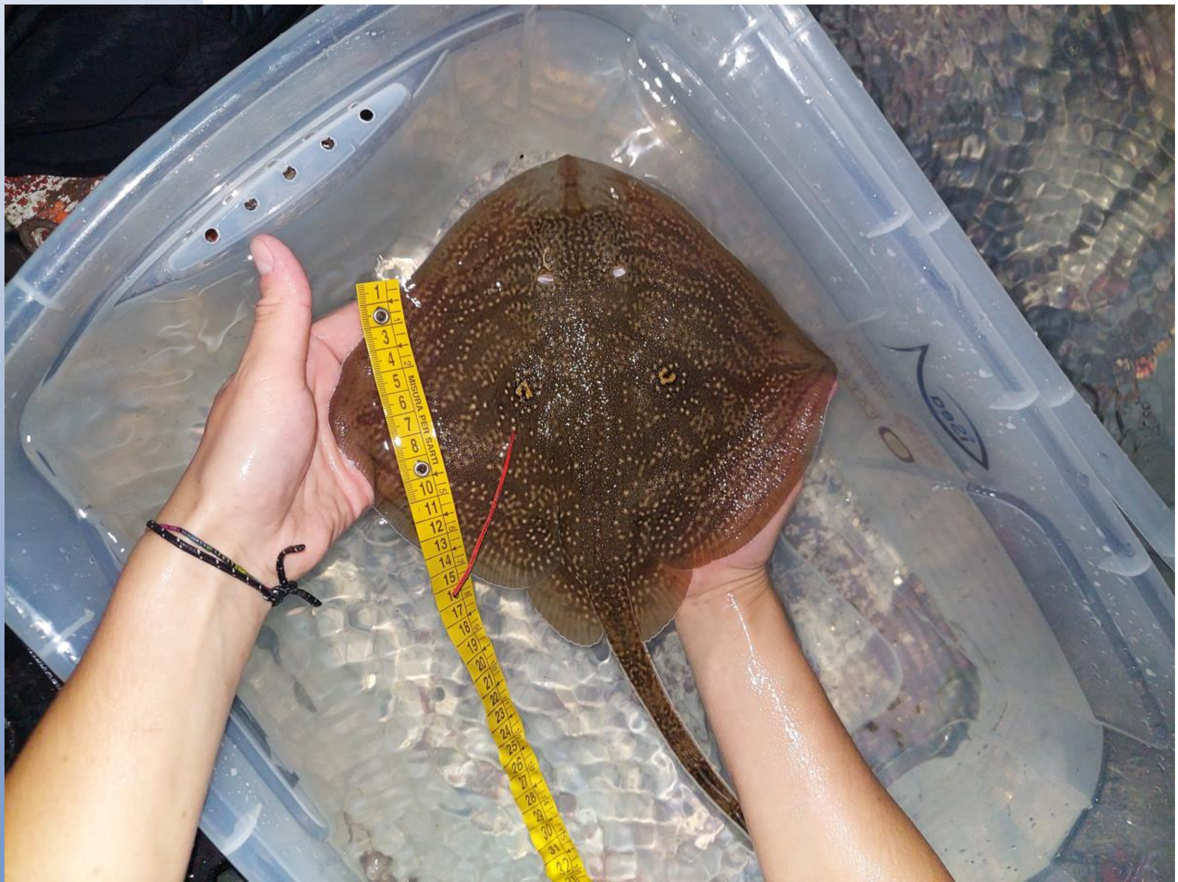

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Executive summary

The Rough Skate (*Raja radula*), one of the few elasmobranch species endemic to the Mediterranean Sea, has experienced significant population declines across its range. Although rarely targeted, it represents an important bycatch species in the Aegean Sea, especially within the Thracian Sea. The area, and specifically Kavala Bay, was designated as an Important Shark and Ray Area (ISRA) under the criterion of reproduction for *R. radula*. Despite this, no published study has yet defined nursery or parturition sites within this region.

This project aimed to (i) confirm the existence and location of nursery or reproductive aggregation sites of *R. radula* within the Thracian Sea, (ii) assess the impact of local fisheries, and (iii) contribute baseline data to support future management and mitigation strategies. A systematic monthly monitoring program was implemented, incorporating onboard surveys, landing site assessments, biological sampling, and tagging.

To date, a total of 35 fishing trips have been monitored 26 involving netters and nine bottom trawlers, yielding to 68 fishing operations. These surveys enabled year-round bycatch monitoring with which main gears the species is caught. Short-Term Post-Release Mortality (stPRM) was evaluated through a standardised protocol applied to 56 live specimens. Health status improved markedly during recovery, with 82% of individuals in good condition after 40 minutes, and no mortality observed. Tagging of 51 healthy individuals yielded a high recapture rate (11.76%), indicating post-release survival and potential site fidelity. These findings validate onboard handling and immediate release as effective, low-cost conservation tools.

Crucially, the success of this project was made possible through the active collaboration of local fishers. A targeted outreach campaign engaged 24 professional fishers and four local associations, fostering trust and participation in tagging, reporting, and data collection. Their high level of involvement significantly enhanced recapture reporting and validated cooperative science as a powerful tool for conservation.

The study confirms year-round juvenile presence and suggests gear selectivity may obscure neonate detection. These outcomes support the designation of Kavala Bay as a nursery area and underline the need for targeted conservation measures. Recommendations include promoting minimum landing sizes for *R. radula* and continued collaboration with fishers to improve data collection and post-release survival.

In conclusion, this project provides the first structured assessment of *R. radula's* spatial use and post-release survival in the Thracian Sea, offering crucial evidence for informed fisheries management and species conservation.

Summary of main research results/outcomes

This project confirmed Kavala Bay as a nursery area for *Raja radula*, with juveniles recorded year-round in shallow waters (1.5–10 m) in consistency with previously collected data, meeting key nursery criteria despite the absence of neonates who most likely are absent in the sample due to gear selectivity. A short-term post-release mortality (StPRM) protocol applied to 56 individuals showed a 66% improvement in health condition after 40 minutes in recovery tanks, with no mortality observed. These findings highlight the effectiveness of proper handling and release as a low-cost, practical conservation strategy. Tagging campaign yielded at a recapture rate of almost 12%, reinforcing evidence of survival and possibly high residency (Neat et al., 2015). These results, supported by fisher collaboration, will be utilised to promote science based local management measures.

1.1 Introduction

Raja radula, the Rough Skate, is among the few elasmobranch species that is considered endemic in the Mediterranean Sea (Serena et al., 2020). Although the species is listed as Endangered, there are only sporadic studies on its ecology and biology, mostly deriving from western and central Mediterranean (Mancusi et al., 2016). However, studies in the Aegean Sea show that the species is among the most common along with *R. clavata* (Giovos et al., 2021 and references therein). Albeit the species is not targeted, it constitutes a valuable bycatch especially in the beginning and end of season for specific métiers. Specifically, *Raja radula* comprised 9.6% of the total elasmobranch catches from all gears combined while it was the most representative elasmobranch for nets (Giovos et al., 2021). Damalas and Vassilopoulou (2011), reported a decline of 58% for the Central Aegean Sea (Cyclades) during 1995–2000 and 2003–2006 survey periods, with an inferred decline of 79% for 2007–2015 and a projected decline of 89% for the period 2016–2023, covering a three-generation period (27 years) and given its overlapping habitat with ongoing relatively high fishing pressure the species was listed as Critically Endangered, under the criterion A3d+4d;E in the Greek Red List of threatened species (Giovos et al., 2023).

The Thracian Sea Self was designated as an Important Shark and Ray Area, for seven species among which the endemic Rough Skate (*Raja radula*) which apart from range-restricted reproduces in the area (IUCN SSC Shark Specialist Group, 2023). iSea, has worked in the region during 2019-2020 recording mixed-sex aggregations, juveniles, gravid and post-natal females (By ElasmoCatch unpubl. data). Currently, there is no published study defining a specific nursery or parturition site.

General aim

This project aims to identify the spatio-temporal use of sites (i.e., nursery, parturition, etc.) by *R. radula* within Thracian Sea and assess the impact of local fisheries (bottom trawls, nets) on its population through monitoring, biological data collection and conventional tagging. The three main objectives are to i) confirm and define the reproductive aggregation and nursery, ii) assess the impact of local fisheries and iii) contribute to the development of management measures to reduce the impact of bycatch for the species by setting a baseline.

2. Methods

To accomplish the objectives a systematic monthly monitoring of the catches of *Raja radula* by different fishing gears in the Thracean Sea was foreseen to study the interaction of the species in relation to gear and life stage. To explore the impact of fisheries interactions a protocol to assess the Short-Term Release Mortality was adopted while to investigate the permanence of the species within the area of samplings (Kavala Bay) in relation to the whole area (Thracean Sea) tagging using conventional dart tags, was applied.

Monitoring of the fishing trips was conducted using a detailed protocol adjusted from GFCM (2019) (See Appendix 1). The catches were monitored by conducting onboard surveys and exceptionally by questionnaires in landing sites with trusted fishers. Other parameters such as depth, water temperature and habitat were recorded. The fishing grounds examined were Kavala bay and adjust regions (Thracian Sea plateau). During the surveys biological data were obtained from bycaught specimens (See appendix 1). Specifically the observers were obtaining three morphometric measurements (Total length, Disc length and Disc width) to the closest centimeter. Maturity was assessed in all males visually from the claspers rigidity and for females, maturity was assessed in dead specimens by inspecting their reproductive system. Stomachs, vertebrae and DNA samples were retrieved from dead specimens.

Tagging, using conventional dart tags, was performed in healthy bycaught individuals and individuals who's stPRM was assessed. Tagging was performed by trained observers in individuals of sizes greater than 20cm (TL) to prevent any additional injury to the tagging itself while tag sizes were chosen accordingly. The main objectives for the tagging was to investigate the residency of the species in the area and the Long Term Survival. The estimation of the short-term survival was deemed crucial to assess as recapture rate was anticipated to be low due to the characteristics of the study area (i.e., extended plateau with large diverse fishing fleet). For the stPRM, a protocol developed by the University of Padova was used. The protocol was carried out for specimens found alive in both landing sites and during onboard surveys. Smaller individuals were selected in order not to constrain animals in small space, influencing their survival after capture. Upon capture its individual's At Vessel Mortality (AVM) was assessed. After untangling from the gear the animal put a designated tank for the estimation of stPRM. As soon as the animal enters the tank time is noted to account of the time of air exposure while the score of its health status was assigned. During the 40 minutes inside the tank, the health status is assessed 3 times, as soon as it was put in the tank, after 10 minutes, and after 40 minutes. The health score was given according to the behavior of the animal based on a) body movements (i.e., flapping, spiracle movement), b) potential injuries (i.e., bruises, cuts, bleeding) and c) ability to swim including buoyancy. The health score for the PRM, AVM and stPRM has been adjusted from Manire and Hueter, 2001; Benoît et al.,2010; Braccini et al., 2012; Enever et al., 2009; Musil et al., 2018, while injuries were taken into account and classified into three categories i) none, ii) minor and iii) major. Finally, to better understand swim ability and buoyancy a capsizing test is performed on the second (10mins) and final stage of the stPRM (40mins). Upon release a final score is given to assess its Post Release Mortality (PRM).

3. Results

3.1 ByCatch and Biological data

To date, a total of 35 fishing trips have been monitored, including 26 trips conducted by netters and 9 by bottom trawlers, accounting for 68 fishing operations in total (Table 1). The initial sampling design aimed to monitor at least two trips per month for both fleet segments. However, this target could not be fully met due to operational constraints. Specifically, bottom trawler activity ceased from the end of March through May due to financial difficulties reported by the collaborating vessels. Furthermore, bottom trawling is prohibited during June, and licenses for international waters are issued only from 13 July to 30 September. Nevertheless, in September, none of the collaborating bottom trawlers were active, citing low catch rates in relation to their operational costs (i.e. crew compensation and fuel expenses).

Table 1: Total sampling effort; including all monitored fishing trips and fishing operations, April 2024-March 2025

Season	Month	Small scale fisheries		Bottom trawlers		Total	
		Fishing trips	**no operations**	Fishing trips	**no operations**	Trips	**Operations**
Winter	December	-		-	**-**	-	-
	January	3	**3**	-	**-**	3	**3**
	February	3	**3**	1	**4**	4	**7**
Spring	March	2	**5**	2	**6**	4	**11**
	April	2	**2**			2	**2**
	May	3	**4**			3	**4**
Summer	June	2	**5**			2	**5**
	July	3	**5**	2	**5**	5	**10**
	August	2	**2**	2	**6**	4	**8**
Autumn	September	-	-	-	**-**	-	**-**
	October	2	**2**	1	**5**	3	**7**
	November	4	**8**	1	**3**	5	**11**
Total effort		**26**	**39**	**9**	**29**	**35**	**68**

To compensate for the reduced sampling effort from bottom trawlers, efforts were intensified on small-scale fisheries, with a higher number of trips conducted by netters than originally planned.

Elasmobranch bycatch was absent in only 12% (n = 8) of all monitored fishing operations, comprising three bottom trawl hauls and five gillnet sets. In contrast, elasmobranchs were recorded in all observed trammel net operations. Batoid species were present in 82%(N=56) of the operations, whereas sharks were encountered in 37% (N=24). In total, 12 elasmobranch species were identified, comprising 1,037 individuals. The most frequently recorded species was *Raja radula*, accounting for 444 individuals (40.41% of the total elasmobranch bycatch), followed by *Scyliorhinus canicula* with 354 individuals (34.14%) and *Torpedo marmorata* with 143 individuals (13.89%).

Catch per unit effort (CPUE) was calculated separately for each gear and elasmobranch species, using the number of individuals as response variable to better quantify the impact of the fishing gear. For passive gears, such as gillnets and trammel nets, effort was standardised and expressed as individuals per 1,000 metres of net per 1 hour of soaking (ind/1000m/1h). For bottom trawlers, effort was standardised based on trawling duration (in hours), with CPUE expressed as individuals per hour of trawling (ind./h). In table 2, the average CPUE is presented for nets, while in Table 3, the average CPUE is presented for trawlers.

Table 2: Average nCPUE(no/1000m/h) is presented per species per gear along with the total number of individuals recorded during the samplings.

Species	Gillnets		Trammel nets	
	nCPUE	N	nCPUE	N
Raja miraletus	0.00	0	0.07	32
Raja radula	0.07	10	1.40	440
Aetomylaeus bovinus	0.00	0	0.00	2
Myliobatis aquila	0.00	0	0.00	11
Dasyatis spp.	0.00	0	0.23	30
Gymnura altavela	0.00	0	0.01	1
Torpedo marmorata	0.09	3	0.21	74
Scyliorhinus canicula	0.00	0	0.00	2

Table 3: Average nCPUE(no/h) is presented per species in the monitored hauls along with the total number of individuals recorded during the samplings

Bottom trawls		
Species	nCPUE	N
Raja clavata	0.12	20
Raja miraletus	0.04	6
Raja radula	0.03	4
Myliobatis aquila	0.01	1
Dasyatis spp.	0.04	6
Gymnura altavela	0.01	1
Torpedo marmorata	0.44	69
Etmopterus spinax	0.06	8
Galeus melastomus	0.01	1
Scyliorhinus canicula	2.33	352
Scyliorhinus stellaris	0.01	1

The nCPUE was higher for the most frequently caught species: *Raja radula*, *Torpedo marmorata*, and *Scyliorhinus canicula*. However, for the bottom trawlers nCPUE was expected to be higher for *R. radula,* but it could be attributed to the area of the fishing ground which was closer to the coast in comparison with previous years. In consistency with data previously collected during 2019–2020, *S. canicula* exhibited the highest nCPUE for trawls and *R. radula* the highest for nets, nevertheless for both the values were lower.

To better understand the catch rates for *R. radula* nCPUE for trammel nets was examined with the seasonality (Figure 1). Summer seems to be the most important period with nCPUE reaching almost three individuals per 1000m of net per hour, with fishers targeting caramote prawn (*Penaeus kerathurus*) during that period intensifying their effort and concentrating it in depths 1.5-7m.

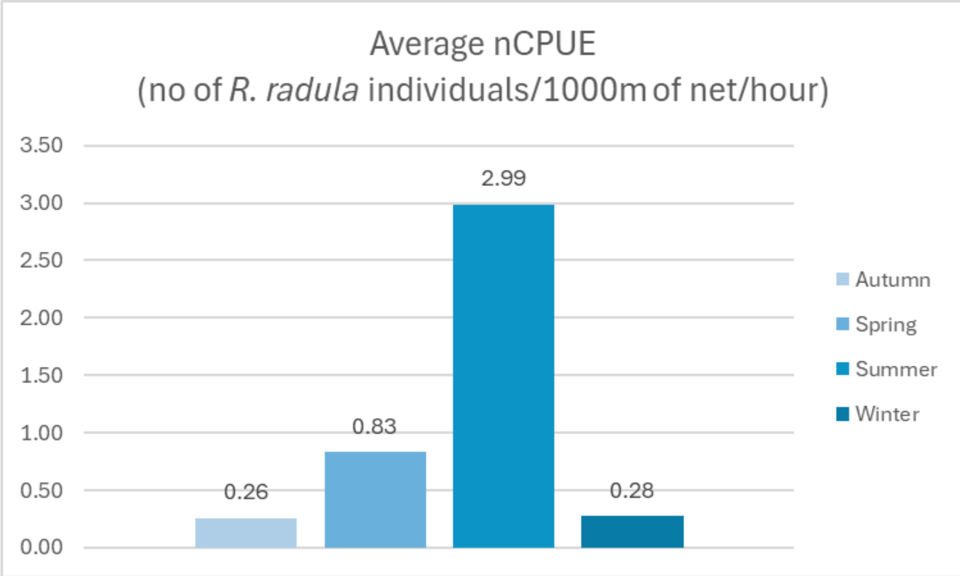

Figure 1: Average nCPUE (no/1000m/h) for trammel nets.

In terms of sizes juveniles of *Raja radula* were captured throughout the year at a cumulative ratio of 72.85% reaching almost 100% during late spring and summer months while only on February the proportion reached almost 50% (Figure 2).

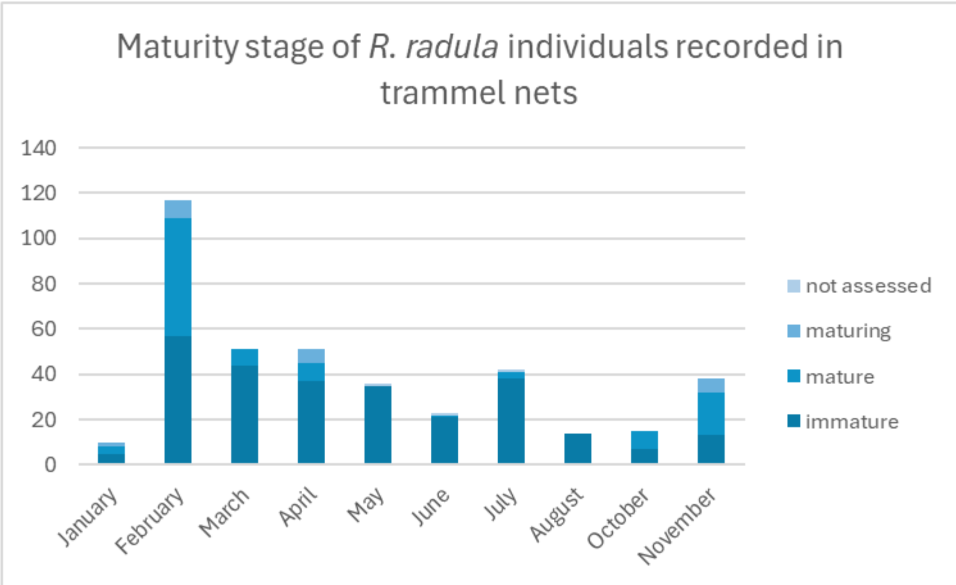

Figure 2: Maturity stage of R. radula individuals caught in trammel nets per month.

The smallest specimens of *Raja radula* were at 14.5 cm TL, caught during July and August. While the largest individuals and post-partum females were caught during the winter on late February. Although, during the surveys no neonates were recorded, however the presence of juveniles throughout the year supports the hypothesis that Kavala Bay functions as a nursery area for this species, consistent with criteria proposed by Heupel et al. (2007) which include the presence of juveniles over time and their residency in a discrete area in consistency with previously collected data (ByElasmocatch, 2019-2020) and other studies conducted in the Mediterranean (Kadri et al., 2013). The absence of neonates may be attributed to the selectivity of the gear used, particularly in terms of mesh size and configuration, rather than an actual absence of newly born individuals in the area. Given the shallow depth range of 1.5–10 metres in which fishing operations were conducted, it is likely that the fishing grounds overlap spatially with the deposition habitats, however this topic needs further investigation.

Morphometrics for *R. radula* were collected for a total of 395 individuals at almost 50% females to males ratio and minimum – maximum values (Table 4) and size distribution in relation to maturity and sex (Figure 3).

Table 4: Indicative sample size for morphometricand biological measurements collected

Sex	Average DW (cm)	Max DW (cm)	Min DW (cm)	No of individuals
Females	23.00	44	9.5	198
Males	21.69	41	9.5	197

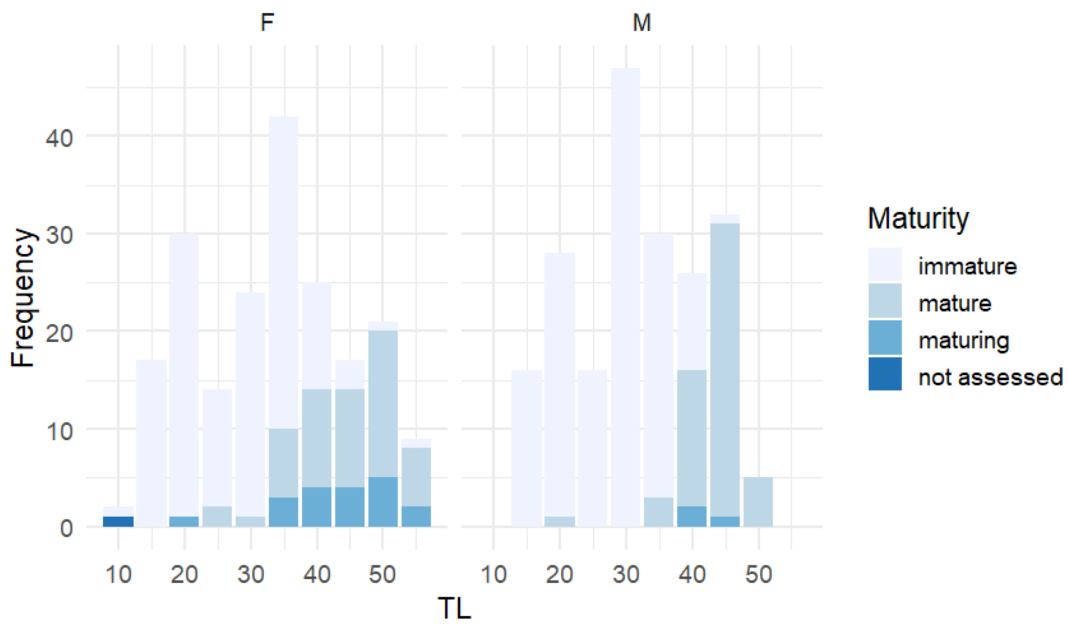

Figure 3: Size frequency distribution by Sex and Maturity for R. radula.

These data will be further analysed to investigate life stage in relation to different métiers, depth strata, and associated environmental parameters. When combined with the biological data, such as vertebrae for age and growth analysis and stomachs for dietary assessments, this dataset will provide valuable insights into the ecology and biology of the species within the delineated Important Shark and Ray Area (ISRA) of the Thracian Sea plateau.

In total 72 *R. radula* stomachs have been collected with 52 already analysed with crustaceans composing the majority of the prey items and *Liocarcinus* spp. similarly to existing bibliography (Consalvo et al., 2010). Additionally a total of 35 vertebrae and DNA samples have been collected to contribute to the knowledge about the biology of this species. Vertebrae samples will be sent to University of Padova to be analysed there by students in the context of their thesis, under the supervision of Professor Carlotta Mazzoldi. DNA samples will be analysed externally in the context of Life Prometheus project.

3.2 Short Term Release Mortality

A total of 56 individuals carried out the protocol to assess the Short-term Post Release Mortality (StPRM). The protocol was carried out on *Raja radula* specimens found alive in both landing sites and during onboard surveys. Almost all the evaluated individuals derived from trammel nets (N=51), three from bottom trawlers and two from gillnets. The average air exposure of the animals before entering the tank was estimated at 32mins with a maximum of four hours and a minimum of one minute. Overall, the animals' health status improved by 66% with the Good status to be doubled by the end of 40mins in the tank and the percentage of Poor/Moribund dropping by 25%(Table 5).

Table 5: Change in health status at beginning and end of the experiment.

Category	0 min % of total	40 min % of total	Change in Share
Good	23/56 ≈ 41.1%	46/56 ≈ 82.1%	+41%
Fair	17/56 ≈ 30.4%	8/56 ≈ 14.3%	–16.1%
Poor/Moribund	16/56 ≈ 28.6%	2/56 ≈ 3.6%	–25%
Dead	0	0	0%

It is important to mention that almost none of the individuals died at the end of the experiment, while only 3.6% (N=2) didn't show any improvement of their status in the Poor/Moribund category and 14.3% (N=8) from the Fair category. Interestingly, when assessed the PRM at release the status of the animals maintained the middle score given at the middle of the experiment (Figure 4). This is probably due to "calm" controlled conditions of the tank that gives the individuals the ability to improve their condition. While even though release is performed in favorable conditions to the animal like handling, air exposure etc, the animal demonstrate more reluctant movements than when in the tank. This could be linked to the change in temperature or wave action. But overall these results are very positive and demonstrate the potential use of handling and release as a low cost and affective management strategy which is backed by the results of the tagging campaign.

3.4 Long Term Release Mortality & Tagging

Tagging campaign started in May 2024, with dart tags owned by iSea until the ones ordered for the project arrived. In total 51 individuals of *R. radula* were tagged and released.

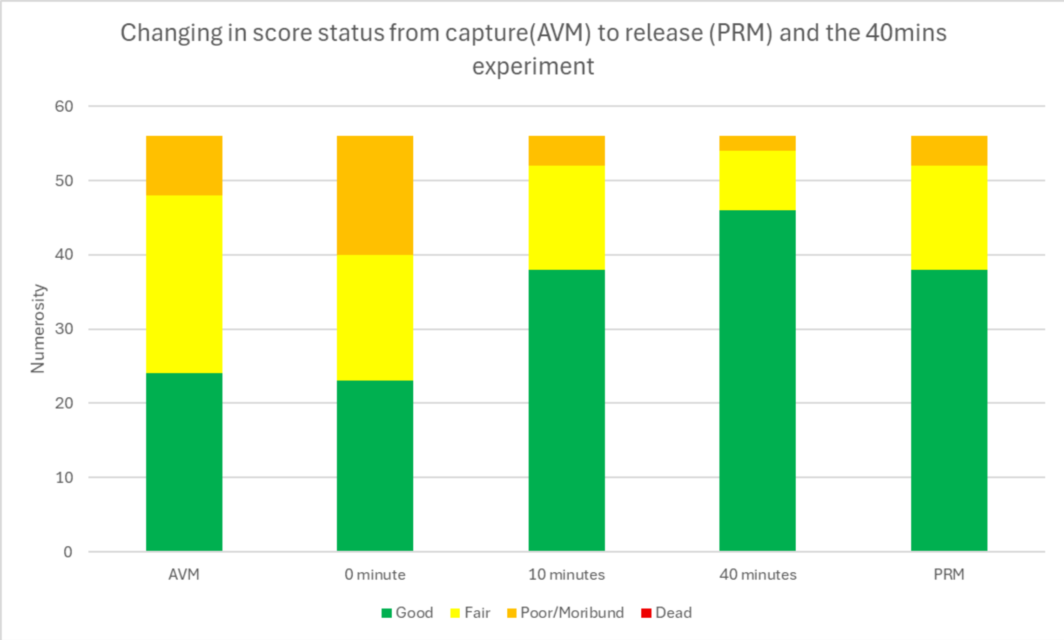

Figure 4: Health Status scores for the 56 individuals of R. radula *from capture (AVM) to release (PRM) and the 40mins stPRM experiment in survival tanks.*

The field team anticipated to tag more individuals however the large amounts of bycaught specimens in the winter were retained by fishers while during the summer most of the individuals were too small to tag. Nevertheless, recapture rate was very high at 11.76% (N=6) higher than other studies in Greece like Amvrakikos Gulf (Ciprian et al., 2024) which is an enclosed gulf. Currently, in the Mediterranean there are no other studies with tagged skates or *R. radula* to compare the results, but comparing it with similar species in other areas around the world the recapture rate is among the average (Lazo-Wasem et al., 2021; Bracciali et al., 2023). In table 6, the recaptures are presented.

Table 6: Recapture data of the tagged R. radula individuals

Tag ID	Tag Date	Recapture Date	Days Until Recapture
KAV_061124_B3f	06/11/2024	24/05/2025	199 days
KAV_060325_B2d	06/03/2025	25/05/2025	80 days
KAV_060325_B2d	06/03/2025	04/05/2025	59 days
KAV_270524_B1	27/05/2024	30/07/2024	64 days
KAV_280524_B2b	28/05/2024	13/08/2024	77 days
Unknown	Unknown	30/07/2024	~60 days

Conservation achievements

This project has provided evidence that the Thracian Sea functions as a critical nursery area by providing data series for 2024 and 2025. Juvenile *Raja radula* were frequently observed at sizes close to their estimated size at birth, and they were present throughout the year. Similarly, *Scyliorhinus canicula* eggcases and neonates were recorded during the summer months in consistency with previously collected data (ByElasmoCatch, 2020), indicating deposition sites and nursery. In addition, individuals of *Raja clavata* and *Etmopterus spinax* were also recorded at sizes suggesting recent birth, further supporting the nursery role of the area for a wider range of batoid and shark species. These findings substantially enhance our understanding of elasmobranch life cycles and their spatial overlap with fishing activity. These data will enrich our knowledge within an ISRA and will be shared with competent Ministry of Environment advocating for the protection of Kavala Bay and the Thracean Sea in relation with the objectives of the EU Nature Restoration Law. One of the most encouraging results of the project was the remarkably high survival rate of elasmobranchs following capture and release as well as the high recapture rate despite the small sample size. This outcome highlights the potential of proper onboard handling and immediate release as a practical, low-impact conservation strategy for vulnerable species. The success of this approach highlights the potential encouraging the release, especially of early juvenile, eventually with the establishment of a minimum landing sizes, particularly for species such as *Raja radula*, that are considered commercial, in parallel with efforts, already under testing in the Adriatic for sharks like *Mustelus mustelus*, *Mustelus puncutulatus*, and *Squalus acanthias*. Furthermore, the exceptionally high rate of recapture reporting by collaborating fishers not only confirms post-release survival but also underscores the importance of stakeholder engagement. The active involvement of fishers in data collection, tagging, and reporting demonstrates the power of cooperative science to produce actionable conservation outcomes and strengthen the long-term sustainability of regional fisheries.

Discussion

Overall, the findings from this project provide compelling evidence that the Thracian Sea functions as a critical nursery area. The frequent presence of juvenile *Raja radula* and their year-round occurrence, indicates that Kavala Bay serves as an important developmental habitat for this species. Similarly, the seasonal appearance of *Scyliorhinus canicula* eggcases and neonates aligns with prior data (ByElasmoCatch, 2020), reinforcing the area's role as a deposition site and nursery ground, in line with the criteria proposed by Heupel et al. (2007).

The detection of other neonates like *Raja clavata* and *Etmopterus spinax* further confirms the ecological significance of the area, suggesting that the nursery function is not limited to a narrow subset of taxa but encompasses a diverse array of demersal elasmobranchs and give important insights on overlap with fishing activities. The project's findings will be used to update the factsheet of the Important Shark and Ray Area (ISRA). While, iSea will utilise the data to advocate for the integration of sharks and rays into national environmental strategies, and particularly the EU Nature Restoration Law. Finally, the bibliogical data will be used to update the Greek Red List of threatened species *for R. radula* and the other species.

Another important outcome of this project was the remarkably high post-release survival rate, despite the relatively small sample size. This suggests that proper onboard handling techniques and immediate release are effective, low-impact conservation tools for vulnerable species. Currently iSea is undergoing another project in the island of Lemnos (Truva Self: Area of Interest) where *R. radula* is also frequently caught and thus the protocol of stPRM will continue to be applied there to increase the sampling size for a future, survival publication on the species.

The exceptionally high rate of recapture reporting indicates both strong post-release survival and a high degree of stakeholder engagement and possibly the high residency of the species as all individuals were recapture close to their release site. Leveraging the active participation of fishers in tagging, data reporting, and recapture documentation, iSea will do an Ad - Hoc tagging expedition in Kavala to allow for more robust data and continuous collaboration with the fishing fleet promoting stewardship and the long-term sustainability of regional fisheries.

In summary, there were some setbacks from the original planning but these did not compromise the overall outcomes of the project. We will continue building on these findings to be able to provide more robust management tools.

Education and public awareness achievements

To ensure maximum reports on recapture, the local fleet, fisheries bureau, port police and auction market were informed on the project in person. A meeting was held with the fisheries inspector of Kaval Port Authority on May 2024, while another meeting was held with the Fisheries bureau of Kavala and Xanthi. For the fishers specifically an event was held in Keramoti on 30/04/2024 with a total participation of 24 professional fishers and four local associations' representatives who were informed on the tagging campaign its aims and objectives (Picture 1). To allow for correct reporting a poster was developed and hung in key areas i.e. Sfageia port, Auction market, port police station and fisheries bureau (See Appendix 2).

Picture 1: Discussing safe handling and release and survival during the workshop held in Keramoti on 30/04/2024.

Then during the European Elasmobranch Association meeting held in Thessaloniki in October 2024 an ad-hoc workshop with collaborating fishers was organised. A number of collaborating fishers from different areas were invited to share their experiences and involvement on shark and ray conservation projects. Two fishers from Kavala participated in the workshop and presented what it is that they are doing along with their colleagues for the conservation of the Rough Skate (Picture 2). This experience empowered them even more and we believe it was key in maximizing participation as all the recaptures were reported by those two although they were not caught by them. Going back from the workshop in EEA informing their colleagues about it, "nominated" them as local ambassadors for the species and thus each tagged individual caught is reported to them and through them to us.

Picture 2: Mr Panagiotis presenting his involvement in the project, EEA Conference, Thessaloniki, October2024.

One of the project blogs have been uploaded up to date and the other two are attached with this report. Regarding the first one, it was communicated through social media, as well as the other two once they get published.

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Published papers

An oral presentation is foreseen for the EEA 2025 on the results of the project and a paper regarding *R. radula* biological traits and nursery. The abstract for EEA will be submitted by the end of July 2025. While the paper is foreseen for 2026 to include the complete stomach content analysis and the vertebrate.

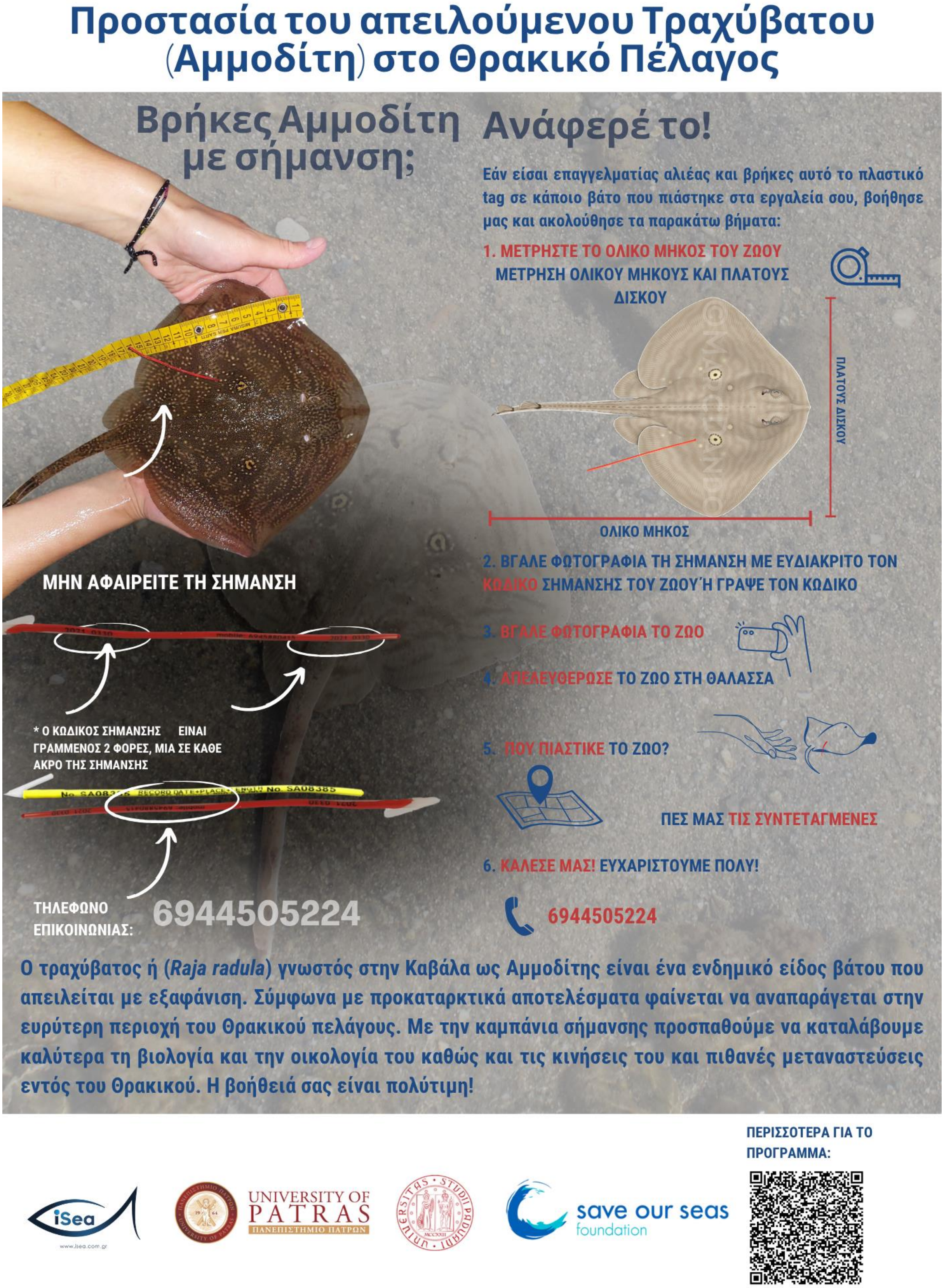
Appendix 1:
Fisheries monitoring protocol, biological information and stPRM

FISHING TRIP								
DATE		PORT		VESSEL NAME		ID BOAT		AREA:
PRECIPITATION	No	Little	Strong	Cloud cover:	0-25%	25-50%	50-75%	75-100%
MOON STATE	New Moon	First Quarter	Full Moon	Last Quarter	AIR TEMPERATURE		WATER TEMPERATURE	
WIND INTENSITY		WIND DIRECTION:	N - E - S - W	WATER CURRENT	No	Little	Strong	DIRECTION: N - E - S - W
START SETTING TIME:		END SETTING TIME:		START HAULING TIME:		END HAULING TIME:		NOTES:
COORDINATES	NORTH Start:	EAST start:	NORTH end:	EAST end:	METIER		GEAR	
TARGET SPECIES	*Dicentrarchus labrax*	*P. longinostris*	*Lithognathus mormyrus*	*Mugilidae*	*Mullus barbatus/surmuletus*	*Mustelus mustelus*	*Myliobatidae*	*Peneaus kerathurus*
	Sardina pilchardus	*Sepia officinalis*	*Solea solea*	*Sparus aurata*	*Trachurus spp.*	*M. merlucious*	Other:	
MESH/HOOK SIZE			NET LENGTH			DEPTH		
DISTANCE FROM SHORE			PARALLEL?			NOTES		
VULNERABLE SPECIES CAUGTH	*Raja radula*	*Dasyatis sp.*	*Gymnura altavela*	*Mustelus mustelus*	*Myliobatis aquila*	*Dasyatis sp.*	*Torpedo marmorata*	Other:
HOW MANY?								
APPROXIMATE WEIGHT								
SPECIES LANDED (in kg)	*D. labrax*	*Diplodus spp.*	*L. piscatorus*	*M. merlucious*	*L. mormyrus*	*Mugilidae*	*M. barbatus*	*M. mustelus*
	P. kerathurus	*Rays*	*S. pilchardus*	*S. officinalis*	S. solea	S. aurata	S. sphyraena	S. umbra
	Trachurus spp.	*C. sapidus*	Other:					
SPECIES DISCARDED	*A. bovinus*	*Dasyatis sp.*	*G. altavela*	*M. mustelus*	*M. aquila*	*T. marmorata*	*C. caretta*	*A. aurita*
	A. fallax	Algae	*Ascidians*	*C. sapidus*	Crabs	*Diplodus spp.*	*E. encrasicolus*	*Murex*
	Olothurians	Ophiuras	*Pagellus spp.*	S. pilchardus	*S. aurita*	Seagrass	Seastars	Seaurchins
	Sponges	Other:						
OTHER SPECIES OBSERVED			DAMAGE ON THE NET			MARINE LITTER		
HOW MAN TIMES OUT IN THE PREVIOUS WEEK?							NUMBER OF FISHERS AT THE PORT:	

BIOLOGICAL MEASUREMENTS																					
VESSEL					DATE								PORT					GEAR			
SPECIES	TIME	TL	DL	DW	WEIGHT	SEX	MATURITY	INJURIES	AVM	STPRM Time	STPRM - 0	STPRM - 10	Capsizing (seconds)	STPRM - 40	Capsizing (seconds)	PRM	TAG	PHOTO	DNA	STOMACH	VERTEBRA

Appendix 2:

Informative poster to report recaptures



Picture 3: Photo of the poster in the port of Sfageia in Kavala

Financial statement

The financial statement report is attached to the report. All receipts and proof of expenditure are kept within iSea headquarters as hard copies and are available upon request.

Your evaluation of the Save our Seas Foundation

Having the opportunity to work on this project has been one of the most impactful experiences of my professional journey, and I am truly grateful for it. Throughout the project, the Save Our Seas Foundation (SOSF) consistently provided support, guidance, and understanding.

The blog scheme, in particular, was a new and enriching experience for me. Although I had been involved in several projects before, I had never taken the time to pause, reflect, and communicate project outcomes in such a direct and accessible way. It was both empowering as a project leader and highly impactful for the collaborating fishers, who felt more connected to the broader goals of our work.

Finally, the participation of the SOSF team in the workshop held during the European Elasmobranch Association (EEA) meeting was deeply appreciated, not only by me and iSea team, but also by the fishers. It was incredibly meaningful for them to meet the people behind the project's support. The presence of Mrs. Griffiths and Mrs. Fowler presenting themselves and where they come from, helped build trust and visibility in a way that is rarely experienced by small-scale fishing communities, where external support often feels distant or impersonal even suspicious at times. Your engagement made a lasting impression and strengthened the sense of shared purpose among all parties involved.