



Published by  
[www.researchtrend.net](http://www.researchtrend.net)

# First record of the Pelagic stingray, *Pteroplatytrygon violacea* (Bonaparte, 1832), in Albanian seas

Andrej A. Gajić<sup>1</sup>, Simo Ribaj<sup>2</sup>

<sup>1</sup>Sharklab ADRIA: Center for marine and freshwater biology,  
Triq il-Kappella Tal-Lunzjata, In-Naxxar NXR 6031, Malta (EU)

<sup>2</sup>SEEP: Social Education & Environment Protection  
Boulevard Ismail Qemali, Vlorë, Albania

\*Corresponding author: [agajic@sharklab-adria.org](mailto:agajic@sharklab-adria.org)

---

| Received: 7 November 2021 | Accepted: 30 December 2021 | Published Online 31 December 2021 |

**How to cite:** Gajić AA, Ribaj S. 2021. First record of the Pelagic stingray, *Pteroplatytrygon violacea* (Bonaparte, 1832), in Albanian seas. J New Biol Rep 10 (2): 109 – 112.

---

## ABSTRACT

The very first finding of the Pelagic stingray, *Pteroplatytrygon violacea* (Bonaparte, 1832) (Elasmobranchii: Myliobatiformes: Dasyatidae), in Albanian seas is reported in this paper. Female specimen was recorded in August 2021 at Gjiri i Vlorës at the depth of 25 m and was collected for further examination. The specimen measured 43.18 cm WD, and 101 cm in TL and weighted 2.730 g in total weight. There were 25 upper tooth rows and 23 lower tooth rows, which is less than previously described for this species. No gross pathological changes were observed, nor parasites. Although there were no previous reports in the territorial waters of Albanian territorial waters of the southern Adriatic and northern Ionian Seas, it can be attributed to the lack of studies and lack of proper monitoring in fisheries. Despite importance of the record on the state level, based on our regional research we believe that the Pelagic stingray is not rare species and could be encountered in waters not too far offshore across the entire Adriatic and Ionian Seas, including the Albanian territorial waters.

**Key words:** Adriatic, Albania, biodiversity, ionian, stingray.

## INTRODUCTION

Stretching in the deepest southeastern Adriatic and northeast Ionian Seas, waters of Albania makes a fascinating place for many species of sharks, skates and rays. The total length of the Adriatic Sea coastline is approximately 275 km of which over 65% is accounted for white sandy beaches (Niko et al. 2014), while the length of the Ionian Sea coastline is about 173 km and is characterized with deep bays, high cliffs and rocky coast (Lami & Lami 2015). While the Adriatic Sea has large seasonal variations in temperature and bioproductivity and significant influence from the freshwater inputs, Ionian Sea has more uniform oceanographical features throughout the year (Simeoni et al. 1997).

Despite the wealth and diversity of marine habitats, fish, fauna (especially elasmobranchs) were very rarely investigated (Gajić 2020; Soldo & Bakiu

2020). The current checklist of marine fishes of Albania contains 262 species, of which 51 species within the class is Elasmobranchii Bonaparte, 1838 (Soldo & Bakiu 2020; Gajić 2020; Rakaj 1995). Rapid changes in the marine environments observed in past decades (Lees et al. 2006; Perry et al. 2010, Gunderson et al. 2016) has significantly influenced the populations of fishes, often forcing colonisation of new adaptive zones and thus the extensions of existing niches. Furthermore, increased number of studies, and online fisherman communities as well, has led to the increase of finding of certain species that are formerly believed to be very rare.

Pelagic stingray is unique amongst stingrays, preferring the open ocean of the continental shelves to 100 m (Baum et al., 2009), rarely visiting the upper slopes up to 381 m (Mundy 2005) of the tropical to temperate waters. Adult individuals grow to about 80

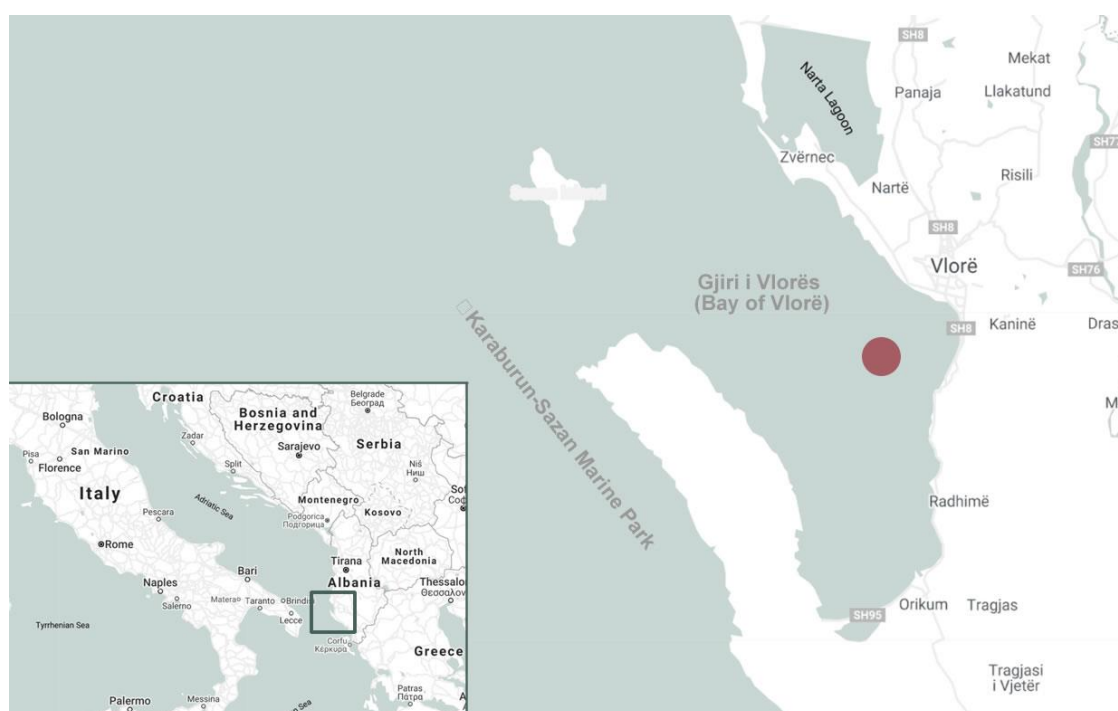
cm of disc width (WD) in average (McEachran 1995). Largest specimens are reported up to 96 cm WD (Ebert, 2003) and 190 cm total length (TL) (Jardas et al. 2008, Gajić 2020) Usually there is one or two thorns on the whip-like tail that are poisonous and serve as a defense mechanism. Due to observed avoidance behaviour by nearby fish, we might conclude that the spine is far more venomous than other stingrays. Hot-water treatment (45°C) is effective as first aid.

## MATERIALS AND METHODS

The field research was conducted during August 2021 across the Vlorë County, Albania. Expedition implied trawl survey on the continental shelf and upper slopes, extensive fisheries surveys, and ROV monitoring and mapping of habitats. Furthermore, histopathological analysis and initial assessment marine litter and

ingested of micro- and nanoplastics (and POPs) and its plausible effects on disease development were conducted in our laboratories.

On the 3<sup>rd</sup> of August 2021, one subadult female stingray specimen was captured by driftnet in Gjiri i Vlorës (40.420205 Lat, 19.479029 Long, Fig. 1) at the depth of 25 m and was collected by for further examination. Neglecting the condition, it was easily identified based on the morphometric and meristic characteristics and verified using Serena (2005), Gajić (2020), while the teeth and jaws were studied according to Gajić (2015). Due to complete autolysis of the organs, we were unable to sample target tissues for histological diagnosis and MMCs biomarkers (Gajić et al. 2020). Stomach and small intestine were ligated, separated, rinsed in hH<sub>2</sub>O and further collected to investigate the presence of microplastics.



**Fig. 1.** Cartographic presentation of the recorded site at Gjiri i Vlorës within the Adriatic-Ionian Region.

## RESULTS AND DISCUSSION

Sampled subadult female specimen identified as *Pteroplatytrygon violacea* (Bonaparte, 1832) (Fig. 2) presents the very first finding of the species in the Albanian parts of the Adriatic and Ionian Seas. The specimen measured 43.18 WD, 101 cm TL and weighed 2.730 TW and has a broadly rounded snout and a wedge-shaped disc that was much wider than long, with visible dark purple coloration despite accelerated decay. A row of thorns was present from the nasal region of the tail spine. The tail was less than twice the total body length with a long lower caudal finfold, while no upper finfolds were present. There were 25 rows of the upper teeth and 23 rows of the lower teeth (Fig. 3) which is less than previously

described for this species (Last & Stevenson, 2009). No gross pathological changes were observed, nor the presence of ecto/endo- parasites.

It was considered as a very rare species in the Adriatic (1996), but recent records ((Mavrič et al. 2004; Jardas et al., 2008; Lipej et al., 2013; Šlejkovec et al. 2014) and those published on the online fisherman communities imply its rather common. Somewhat surprisingly, despite numerous records in Slovenia and Croatia, and even some in Montenegro, there were absolutely no records in the Albanian territorial waters (Soldo & Baku 2021). Such lack of records is probably not related to the rarity of the species in the area, but more likely to its specific ecology, lack of scientific research and complete lack of proper monitoring in fisheries.



**Fig 2.** A specimen of *Pteroplatytrygon violacea* (Bonaparte, 1832) collected at the Gjiri i Vlorës, the meetingpoint of the Adriatic and Ionian Sea. Photo: Andrej A. Gajić



**Fig 3.** Mouth, dental apparatus and nostrils of *Pteroplatytrygon violacea* (Bonaparte, 1832) from Albanian seas. Photo: Andrej A. Gajić.

Although currently considered as Least Concern (IUCN 2016) the pelagic stingray is facing many threats in the Mediterranean Sea and throughout the world (Domingo et al. 2005). It is mostly landed by pelagic longlines and trawls and is usually discarded as bycatch (Baum et al. 2009). While there are no local assessments given for the Adriatic and Ionian seas, it is extremely important to expand the scientific knowledge on the distribution, frequency, biology and threats to avoid plausible declines in the future.

#### ACKNOWLEDGEMENTS

The authors would like to thank Rufford Foundation for funding the project “Sharks, skates and rays of Albania: the final step towards the regional conservation, governance and management” and EC Discovery Channel for funding the study “Plastic Sharks: microplastic quantification and disease development” in the eastern Adriatic Sea. Authors are grateful to Emina Karalić, BA for the logistic support.

## REFERENCES

- Baum J, Bianchi I, Domingo A, Ebert DA, Grubbs RD, Mancus C, Piercy A, Serena F, Snelson FF. 2009. *Pteroplatytrygon violacea*. IUCN Red List of Threatened Species.
- Bonanomi S, Pulcinella J, Fortuna C M, Moro F, Sala A. 2018. Elasmobranch bycatch in the Italian Adriatic pelagic trawl fishery. *PloS one* 13(1): e0191647.
- Domingo A, Menni RC, Forselledo R. 2005. Bycatch of the pelagic ray *Dasyatis violacea* in Uruguayan longline fisheries and aspects of distribution in the southwestern Atlantic. *Sci Mar* 69: 161–166.
- Ebert, DA. 2003. Sharks, rays, and chimaeras of California. California Natural History Guides No. 71. University of California Press.
- Gajić A. 2020. *Sharks, skates and rays of the eastern Adriatic sea*. Supported by ministries of Croatia, Slovenia and Bosnia and Herzegovina. Center for marine and freshwater biology Sharklab ADRIA, Sarajevo, 1-370.
- Gajić A, Alić A, Kahrić A, Bilanović N, Šupić J, Beširović H. 2020. Melanomacrophage centers and diseases occurring in lesser-spotted catsharks, *Scyliorhinus canicula* (L.), from the southern Adriatic Sea-importance for monitoring. *Acta Adriat* 61(2): 175-184.
- Gunderson AR, Armstrong EJ, Stillman JH. 2016. Multiple stressors in a changing world: the need for an improved perspective on physiological responses to the dynamic marine environment. *Ann Rev Mar Sci* 8: 357-378.
- Jardas I. 1996. *Jadranska ihtiofauna*. (Adriatic ichthyofauna). Zagreb: Školska knjiga
- Jardas I, Pallaoro A, Vrgoč N, Jukić-Peladić S. 2008. *Crvena knjiga morskih riba Hrvatske*. Ministarstvo kulture i Državni zavod za zaštitu prirode, Zagreb
- Lami I, Lami S. 2015. Design of Wave Energy Distribution for the Harbort and Coast Protection. In: Stylos C, Floqi T, Marinski J, Damiani L (Eds.) *Sustainable Development of Sea-Corridors and Coastal waters*. Springer.
- Last PR, Stevens JD. 2009. *Sharks and Rays of Australia* (second ed.). Harvard University Press.
- Lees K, Pitois S, Scott C, Frid C, Mackinson S. 2006. Characterizing regime shifts in the marine environment. *Fish Fish* 7(2): 104-127.
- Lipej L, Mavrič B, Paliska D, Capapé C. 2013. Feeding habits of the pelagic stingray *Pteroplatytrygon violacea* (Chondrichthyes: Dasyatidae) in the Adriatic Sea. *J Mar Biolog Assoc* 93(2): 285-290.
- Mavrič B, Jenko R, Makovec T, Lipej L. 2004. On the occurrence of the pelagic stingray, *Dasyatis violacea* (Bonaparte, 1832), in the Gulf of Trieste (Northern Adriatic). *Ann Ser Hist Nat* 14: 181-186.
- McEachran JD. 1995. Dasyatidae. Rayaslatigo. In Fischer KF, Schneider W, Sommer C, Carpenter KE, Niem V (Eds.) *Guia FAO para Identificación de Especies para los Fines de la Pesca. Pacifico Centro-Oriental*. 3 Vols. FAO, Rome.
- Mundy BC. 2005. Checklist of the fishes of the Hawaiian Archipelago. *Bishop mus bull* 6: 1-704.
- Niko P, Alfred F, Bardhyl A, Fatos H. 2015. Impact of the Climate Change on Adriatic Sea Hydrology. In *Engineering Geology for Society and Territory - Volume 1*, Springer, pp. 381-384.
- Perry RI, Cury P, Brander K, Jennings S, Möllmann C, Planque B. 2010. Sensitivity of marine systems to climate and fishing: concepts, issues and management responses. *J Mar Syst* 79(3-4): 427-435.
- Rakaj N. 1995. *Iktiofauna e Shqiperise* (Ichthyofauna of Albania). Sheptia Botuese Libri Universitar
- Serena F. 2005. *Field identification guide to the sharks and rays of the Mediterranean and Black Sea*. FAO.
- Simeoni U, Peno N, Caviola P. 1997. The coastline of Albania: morphology, evolution and coastal management issues. *CIESM Science Series No. 3*, Transformation and evolution of the Mediterranean coastline. *Bull Inst Oceanogr Mon* 18: 151-168.
- Šlejkovec Z, Stajnko A, Falnoga I, Lipej L, Mazej D, Horvat M, Faganeli J. 2014. Bioaccumulation of arsenic species in rays from the northern Adriatic Sea. *Int J Mol Sci* 15(12): 22073-22091.
- Soldo A, Bakiu R. 2021. Checklist of marine fishes of Albania. *Acta Adriat* 62(1): 63-73.