



**CONVENTION ON
MIGRATORY
SPECIES**

UNEP/CMS/COP14/Doc.31.4.11

26 May 2023

Original: English

14th MEETING OF THE CONFERENCE OF THE PARTIES
Samarkand, Uzbekistan, 12 – 17 February 2024
Agenda Item 31.4

**PROPOSAL FOR THE INCLUSION OF
THE BULL RAY (*Aetomylaeus bovinus*) ON APPENDIX II AND THE
MEDITERRANEAN SEA POPULATION OF THIS SPECIES ON APPENDIX I
OF THE CONVENTION***

Summary:

The Government of Israel has submitted the attached proposal for the inclusion of the bull ray (*Aetomylaeus bovinus*) on Appendix II and the Mediterranean Sea population of the same species on Appendix I of CMS.

*The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CMS Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

**PROPOSAL FOR THE INCLUSION OF
THE BULL RAY (*Aetomylaeus bovinus*) ON APPENDIX II AND THE MEDITERRANEAN
SEA POPULATION OF THIS SPECIES ON APPENDIX I OF THE CONVENTION**

A. PROPOSAL

Inclusion of the species *Aetomylaeus bovinus* on Appendix II, and the Mediterranean Sea population of the species on Appendix I.

B. PROPONENT

Israel

C. SUPPORTING STATEMENT

1. Taxonomy

- 1.1 Class Elasmobranchii
- 1.2 Order Myliobatiformes
- 1.3 Family Myliobatidae
- 1.4 Genus and species including author and year (accepted name):
Aetomylaeus bovinus (Geoffroy Saint-Hilaire, 1817)

1.5 Scientific synonyms (unaccepted names)

Aetomylaeus huletti
Myliobates episcopus
Myliobatis bonaparti
Myliobatis bovina
Pteromylaeus bovinus

1.6 Common names

English: Bull ray, Duckbill ray, Duckbill eagle ray
French: Raie-aigle vachette
Spanish: Raya toro, Chucho vaca

Figure 1. Photo of *Aetomylaeus bovinus* (from www.fishi-pedia.com; no photographer named)



2. Overview

The proposed species (*Aetomylaeus bovinus*) is a large-bodied ray occurring from west Europe (Spain and Portugal) to southern Africa and in the Mediterranean Sea. It is caught as bycatch of near-shore industrial and artisanal trawl and net fisheries, as well as recreational fisheries in some areas. In some countries it is retained for human consumption, but in most it is discarded. It is no longer abundant anywhere. In the Mediterranean its occurrence is apparently widespread, but it is entirely uncommon.

It is inferred to have limited biological productivity similar to other myliobatid rays (including long generation length and a low fecundity of 3–6 pups per annual litter), limiting its capacity to sustain fishing pressure.

It occurs individually or in small seasonal migratory schools with migration likely connected to reproductive behavior.

The species is threatened by overfishing and habitat destruction. There is a high level of fisheries resource use and increasing fishing pressure across the range of this species, and the species has apparently undergone large decreases of >80% over the past three generation lengths.

The IUCN Global, European and Mediterranean Assessments all classify it as Critically Endangered (CR).

3 Migrations

3.1 Kinds of movement, distance, the cyclical and predicable nature of the migration

The species forms seasonal aggregations or schools, likely connected to breeding behavior. Several authors document a seasonal pattern of captures related to differences in water temperature, and sex segregation (see Government of France, 2023; Wallace, 1967; Young, 2001; Gurbet et al., 2013). These schools have been reported in areas where they cross international boundaries, for example the northern Adriatic Sea near the maritime borders of Italy, Slovenia and Croatia (Dulcic et al., 2008).

3.2 Proportion of the population migrating, and why that is a significant proportion

Unknown

4 Biological data (other than migration)

4.1 Distribution (current and historical)

The species is found in the Northeast Atlantic, Eastern Central Atlantic, Mediterranean Sea (but it is absent from the Black Sea), Southeast Atlantic, and Western Indian Ocean; it occurs from northwestern Spain and Portugal, across the Canary and Madeira Islands (but not around the Azores), all around northern, western and southern Africa up to Mozambique (Jabado et al., 2021).

Although reports indicate that it was historically common in many locations across west Africa, contemporary patterns of landings indicate that, except for Mauritanian waters, there have been limited records of this species in the past decade from across the Eastern Central Atlantic region.

In the Mediterranean Sea, the species is considered widespread but uncommon, as there are not many documented records of significant catches or aggregations. Schools of *A. bovinus* have been reported in Turkey (Akyol et al., 2017), Tunisia (El Kamel et al., 2010), Greece (Zogaris & Dussling 2010), in the northern Adriatic Sea around the maritime borders of Slovenia, Croatia and Italy (Dulcic et al., 2008), in Israel (A. Barash, unpublished observations) and in other parts of the Mediterranean, too.

4.2 Population (estimates and trends)

No population estimates are available.

Overall, considering declining catch trends and limited number of specimens recorded in trawl surveys and fisheries in several localities where it previously occurred, the level of intense and large unmanaged fisheries that operate throughout its range, its lack of refuge at depth, its limited productivity, and noted declines in eagle rays in general in several parts of its range, it is suspected that the species has undergone a population reduction of >80% over the past three generation lengths (51 years) due to actual or potential levels of exploitation, and it is assessed as Critically Endangered - CRA2d.

4.3 Habitat (short description and trends)

This benthic/demersal and semi- to epipelagic species occurs in tropical to warm temperate coastal waters between the surf zone and depths of 30 m, and sometimes farther offshore. It also occurs in shallow bays, lagoons, and estuaries where salinity is low (Jabado et al., 2016; Walls & Buscher, 2015, 2016).

A. bovinus appears to prefer infralittoral muddy detritic bottoms and seagrass beds (<30 m depth), and it is therefore exposed to being caught by nearshore fishing gear, mainly purse seines and gillnets, and occasionally by trawls. Its schooling behavior is a factor that enhances the risk of many individuals being caught in one single haul of trawls and gillnets (Government of France, 2023).

4.4 Biological characteristics

This large-bodied eagle ray exhibits low fecundity and long generation length, therefore it is suspected to have limited productivity, similarly to other eagle rays.

Morphology: Long, flat, rounded snout like a duck's bill; head thick and pectoral disc with sharply curved, angular corners; upper or lower jaw; usually with 7 rows of flat teeth. Light brown often with several pale blue-grey stripes dorsally; white ventrally (see photo, above). It reaches a maximum size of 222 cm disc width (DW) with males mature at ~80–100 cm DW and females mature at ~83–100 cm DW (Capapé et al., 1995). Reproduction is matrotrophic viviparous with a gestation length of 5–6 months, litter sizes of 3–6 pups, and a size-at-birth of ~22–45 cm DW (Seck et al., 2002).

There is no information on this species' age-at-maturity and maximum age and hence, generation length was inferred based on data for the smaller eagle ray, *Myliobatis californicus*, which has an age-at-maturity of five years and a maximum age of 24 years and a generation length of 14.5 years (Martin & Caillet, 1988). Based on scaled-size, the generation length for *A. bovinus* is inferred to be 17 years.

4.5 Role of the taxon in its ecosystem

Feeds on bottom-living crustaceans and mollusks.

5. Conservation status and threats

5.1 IUCN Red List Assessments

- Global assessment (Jabado et al., 2016): Critically Endangered - CR A2d
- Mediterranean assessment (Walls & Buscher, 2016): Critically Endangered CR A2c
- Europe Assessment (Walls & Buscher, 2015): Critically Endangered CR A2c

5.2 Equivalent information relevant to conservation status assessment

None.

5.3 Threats to the population (factors, intensity)

The main threats are by-catch and habitat degradation. It is difficult to quantify the extent of these factors on the species, but based on the intense levels of fisheries for sharks and rays throughout its range, and the concomitant decreases in most ray species, the threat level can be inferred as intense and increasing.

Similarly, the shallow nearshore regions preferred by the species are threatened by habitat loss and environmental degradation that can lead to indirect and sublethal sources of mortality.

Coastal habitat destruction and degradation is ongoing across most areas due to conversion of coastal lagoons and mangrove deforestation for agriculture (e.g., rice and salt) and aquaculture (e.g., shrimp, fish culture, and fish production); extensive oil and gas exploration, drilling, and production; the effects of rapid urban expansion from growing coastal populations and unplanned tourism development; pollution (unregulated sewage effluents, agricultural runoff, hydrocarbon, and heavy metals); sedimentation and siltation; and changes to the hydrological cycle from the building of dams leading to dramatic levels of habitat loss evident across the region (Jabado et al., 2016).

The species diet is benthic mollusks, and they have been reported around oyster and shellfish farms. Mendez et al. (2022) emphasized that they are destructive to commercial oyster and clam beds, so persecution from aquaculture operators (human-wildlife conflict) poses an additional likely threat.

5.4 Threats connected especially with migrations

Same as general threats, above.

5.5 National and international utilization

The species is not targeted, but is usually taken as by-catch. In many areas it is discarded, but in others it is kept for local human consumption. The species is also captured in recreational fisheries, mainly off South Africa, and these may pose a threat to this species. In South Africa, although most anglers prefer to return these rays to the water alive, release mortality is unknown and could be substantial due to the angling practices of gaffing and weighing (Jabado et al., 2016)

6. Protection status and species management

6.1 National protection status

All countries across the species' range have marine protected areas as well as legislation in place restricting fishing practices, based on gear, area, season, size, by-catch disposal, reporting requirements etc.), and some of these rules may also relate to rays.

A few countries (such as Israel and Türkiye) have outright bans regarding fishing rays, and consider them as protected species. Apparently, no country has specific restrictions regarding *A. bovinus*.

A number of range states have already prepared, or are developing, a National Plan of Action to conserve sharks and rays and manage their sustainability under the Food and Agriculture Organization of the United Nations (FAO) International Plan of Action for the Conservation and Management of Sharks (IPOA).

6.2 International protection status

None.

A. bovinus has been proposed for inclusion in the Annexes of the Protocol concerning specially Protected Areas and Biological Diversity in the Mediterranean of the Barcelona Convention (Government of France, 2023). This proposal will be decided upon at the 23rd Meeting of the Contracting Parties to the Barcelona Convention (COP 23), which will take place in December 2023 in Portoroz, Slovenia. This listing would concomitantly establish restrictions incumbent upon members of the General Fisheries Commission for the Mediterranean (GFCM)¹; pursuant to Rec. GFCM/36/2012/1 (which is a binding regulation on GFCM member states), as listed species cannot be retained on board, trans-shipped, landed, transferred, stored, sold, displayed or offered for sale, and must be released unharmed and alive, to the extent possible.

6.3 Management measures

There are no known conservation management measures in place for this species.

Although most countries across its range have legislation concerning fisheries activities (including gear restrictions, and no-trawling zones in coastal waters), fisheries taking the species are generally poorly managed throughout large parts of the species' range and it is unlikely that pressure will decrease in the near future (Jabado et al., 2021)

6.4 Habitat conservation

As a nearshore species, *A. bovinus* can benefit from shallow no-take regions such as marine protected areas, as long as enforcement is effective in these habitats.

6.5 Population monitoring

Data on landings are recorded by the FAO and various regional fishery bodies, but these are notoriously inaccurate especially in areas where most of the catch is by artisanal fishers. In addition, the reports do not always accurately distinguish between similar species and they are often lumped together.

¹ The General Fisheries Commission for the Mediterranean (GFCM) is a regional fisheries management organization (RFMO) composed of 23 contracting parties: 19 Mediterranean states (Albania, Algeria, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia); 3 Black Sea states (Romania, Bulgaria, Türkiye), the European Union; as well as 6 cooperating non-contracting parties (Bosnia and Herzegovina, Georgia, Jordan, Moldova, Saudi Arabia, Ukraine). <https://www.fao.org/gfcm/about/membership/en/>

7. Effects of the proposed amendment

7.1 Anticipated benefits of the amendment

Hopefully, this listing will induce the regional fishing bodies in the range states to enforce better sustainability of the fishery and to reduce fishing pressure on this critically-endangered species.

Following listing in CMS Appendix II, *A. bovinus* should also be listed in Annex 1 of the Memorandum of Understanding on the Conservation of Migratory Sharks (MOU-Sharks) under the CMS.

7.2 Potential risks of the amendment

None.

7.3 Intention of the proponent concerning development of an Agreement or Concerted Action

Not relevant.

8. Range States

Albania; Algeria; Angola; Benin; Bosnia and Herzegovina; Cameroon; Congo; Croatia; Cyprus; Côte d'Ivoire Democratic Republic of the Congo; Egypt; Equatorial Guinea; France; Gabon; Gambia; Ghana; Greece; Guinea; Guinea-Bissau; Israel; Italy; Lebanon; Liberia; Libya; Malta; Mauritania; Monaco; Montenegro; Morocco; Mozambique; Namibia; Nigeria; Portugal (Madeira); Senegal; Sierra Leone; Slovenia; South Africa; Spain (Canary Is.); Syrian Arab Republic; Togo; Tunisia; Türkiye.

9. Consultations

The proponents wrote a letter of consultation which was sent out to all range states by the Secretariat. Responses are included as an annex to this proposal.

The proponents also consulted with the IUCN Shark Specialist Group, and with various experts from academia and from NGOs.

10. Additional remarks

11. References

- Akyol, O., Aydın, I., El Kamel-Moutalibi, O. & Capapé, C. (2017). Bull ray, *Aetomylaeus bovinus* (Geoffroy Saint-Hilaire, 1817) Myliobatidae) in the Mediterranean Sea and captures of juveniles from Izmir Bay (Aegean Sea, Turkey). *Journal of Applied Ichthyology*, 33(6): 1200-1203.
- Capapé, C., N'dao, M. & Diop, M. (1995). Observations sur la biologie de la reproduction de quatorze espèces de Sélaciens batoïdes capturés dans la région marine de Dakar-Ouakam (Sénégal, Atlantique oriental tropical). *Bulletin de l'Institut Fondamental d'Afrique Noire Cheikh Anta Diop, Dakar*. 48A: 89–102.
- Dulcic, J., Lipej L., Orlando-Bonaca M., Jenkos R., Grebc B., Guélorget O. & Capapé C. (2008). The Bull Ray, *Pteromylaeus bovinus* (Myliobatidae), in the northern Adriatic. *Cybium*, 32(2): 119-123
- El Kamel, O., Mnasri, N., Boumaïza, M., Ben Amor, M.M., Reynaud, C. & Capapé, C. (2010). Additional records of the bull ray *Pteromylaeus bovinus* (Chondrichthyes: Myliobatidae), in the Lagoon of Bizerte (northern Tunisia, central Mediterranean). *Annales, Series Historia Naturalis*, 20(2): 169-174.

- Government of France (2023). Form for proposing amendments to Annex II and Annex III of the Protocol concerning specially Protected Areas and Biological Diversity in the Mediterranean. Species concerned: *Aetomylaeus bovinus*. Submitted by the Republic of France to the Regional Activity Centre for Specially Protected Areas (RAC/SPA) of the Barcelona Convention.
- Gurbet, R., Akyol, O., Yalçın, E. & Özeydin, O. (2013). Discards in bottom trawl fishery in the Aegean Sea (Izmir Bay, Turkey). *Journal of Applied Ichthyology* 29(6): 1269-1274.
- Jabado, R.W., Chartrain, E., Cliff, G., Derrick, D., Dia, M., Diop, M., Doherty, P., Dossa, J., Leurs, G.H.L., Metcalfe, K., Porriños, G., Seidu, I., Soares, A., Tamo, A., VanderWright, W.J. & Williams, A.B. (2021). *Aetomylaeus bovinus*. (Global Assessment). The IUCN Red List of Threatened Species 2021: e.T60127A124441812. Accessed May 2023.
- Martin, L.K., & Cailliet, G.M. (1988). Aspects of the reproduction of the bat ray, *Myliobatis californica*, in Central California. *Copeia* 1988(3): 754–762.
- Mendez L., Bacquet A. & F. Briand. (2022). Guide of Mediterranean Skates and Rays. The <https://ciesm.org/marine/programs/skatesandrays/Aetomylaeus-bovinus/>
<https://ciesm.org/marine/programs/skatesandrays/Aetomylaeus-bovinus/>
- Seck, A. A., Diatta, Y., Gueye-Ndiaye, A., & Capapé, C. (2002). Observations on the reproductive biology of the Bull Ray, *Pteromylaeus bovinus* (E. Geoffroy Saint-Hilaire, 1817) (Chondrichthyes: Myliobatidae) from the coast of Senegal (eastern tropical Atlantic). *Acta Adriatica*, 43(1), 87-96.
- Wallace, J.H. (1967, as cited in Government of France, 2023). The batoid fishes of the east coast of southern Africa. II. Manta, eagle, duckbill, cownose, butterfly and sting rays. Investigational Report. Oceanographic Research Institute. Durban 16.
- Walls, R. & Buscher, E. (2015). *Aetomylaeus bovinus* (Europe assessment). The IUCN Red List of Threatened Species 2015: e.T60127A48942395. Accessed May 2023.
- Walls, R.H.L. & Buscher, E. (2016). *Aetomylaeus bovinus* (Mediterranean assessment). The IUCN Red List of Threatened Species 2016: e.T60127A81163810. Accessed on May 2023.
- Young, N. (2001, as cited in Government of France, 2023). An analysis of the trends in by-catch of turtle species, angelsharks and batoid species in the protective gillnets off KwaZulu-Natal, South Africa. MSc thesis, University of Reading.
- Zogaris, S. & Dussling U. (2010). On the occurrence of the Bull Ray *Pteromylaeus bovinus* (Chondrichthyes: Myliobatidae) in the Amvrakikos Gulf, Greece. *Mediterranean Marine Science*, 11(1): 177-185.

ANNEX

Responses to the Secretariat's letter of consultation were received from Albania and the United Kingdom, as follows:

1. Albania

Regarding the first species *Glaucostegus cemiculus*, according to our national experts, it hasn't been observed in the Albanian territorial waters or its coast, even though we acknowledge that it is like other guitarfish species of the family Rhinobatidae, hold critically endangered status.

The same goes for *Rhinoptera marginata*, which is a very rare species, and it hasn't been seen or documented to exist in Albania.

So, for the above species since we do not have any evidence of existence or information, we can't give any opinion whether to be or not to be listed.

Regarding *Aetomylaeus bovinus*, there is evidence to be seen in Albania, even that this species is critically endangered, during the period October – December. For this species we find useful its listing in respective appendices.

Klodiana Marika

2. United Kingdom

In brief, in the time available we have the following comments for your consideration:

- All three are Critically Endangered, which meets the status criterion for Appendix I, but there appears to be no information about their migrations- which would need to be included to demonstrate how the species meet the migratory criterion.
- It would be useful to include information on the benefits of the proposed listings, e.g. including combining the listing proposal with a Concerted Action.
- Lastly, we would have preferred to see the proposal documents themselves in addition to the letter- and would need to see these to come to any decision on supporting these proposals.

Rhiannon Hudson-Jones
Team Leader, CITES & CMS
International Biodiversity and Wildlife (IBW)
International Biodiversity and Climate Directorate (IBC)
Department for Environment, Food and Rural Affairs