Aetomylaeus bovinus, Duckbill Eagle Ray

Assessment by: Jabado, R.W. et al.

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**Taxonomy**

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animalia</td>
<td>Chordata</td>
<td>Chondrichthyes</td>
<td>Myliobatiformes</td>
<td>Myliobatidae</td>
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</tbody>
</table>

**Scientific Name:** *Aetomylaeus bovinus* (Geoffroy Saint-Hilaire, 1817)

**Synonym(s):**
- *Myliobatis bovina* Geoffroy Saint-Hilaire, 1817
- *Pteromylaeus bovina* (Geoffroy Saint-Hilaire, 1817)
- *Pteromylaeus bovinus* (Geoffroy Saint-Hilaire, 1817)

**Regional Assessments:**
- Mediterranean
- Europe

**Common Name(s):**
- English: Duckbill Eagle Ray, Bullray
- French: Aigle vachette
- Portuguese: Ratão-bispo

**Taxonomic Source(s):**

**Taxonomic Notes:**
White (2014) placed the genus *Pteromylaeus* Garman, 1913 into the synonymy of *Aetomylaeus* Garman, 1908. This species is often confused with Common Eagle Ray (*Myliobatus aquila*).

**Assessment Information**

**Red List Category & Criteria:** Critically Endangered A2d [ver 3.1](https://dx.doi.org/10.2305/IUCN.UK.2021-1.RLTS.T60127A124441812.en)

**Year Published:** 2021

**Date Assessed:** August 4, 2020

**Justification:**
The Duckbill Eagle Ray (*Aetomylaeus bovinus*) is a large (to 222 cm disc width) eagle ray that occurs from northwestern Spain in the Eastern Atlantic, the Mediterranean (but absent from the Black Sea), Southeast Atlantic, and to Mozambique in the Western Indian Ocean. It is demersal and semi-pelagic in estuaries, lagoons and on the continental shelf to a depth of 150 m. The species is a bycatch of industrial and artisanal trawl and net fisheries, as well as recreational fisheries in South Africa, and is retained for human consumption or discarded. It is suspected to have limited biological productivity similar to other
myliobatid rays (including a low fecundity of 3–6 pups per litter), limiting its capacity to sustain fishing pressure. There is a high level of fisheries resource use and increasing fishing pressure across the range of this species.

It has largely not been documented from trawl surveys in the Mediterranean Sea and very few records are available from its remaining range across the Eastern Central Atlantic, Southeast Atlantic, and Western Indian Ocean despite ongoing artisanal fisheries monitoring projects. In fact, 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.

Overall, considering these declining catch trends and limited number of specimens recorded in trawl surveys and fisheries in several localities where is 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 Duckbill Eagle Ray 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 A2d.

Previously Published Red List Assessments
2016 – Data Deficient (DD)
https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T60127A104022824.en

2006 – Data Deficient (DD)
https://dx.doi.org/10.2305/IUCN.UK.2006-RLTS.T60127A12309591.en

Geographic Range

Range Description:
The Duckbill Eagle Ray is found in the Northeast Atlantic, Eastern Central Atlantic, Mediterranean Sea (but is absent from the Black Sea), Southeast Atlantic, and Western Indian Ocean (Last et al. 2016). It occurs from northwestern Spain, across the Canary and Madeira Islands but not around the Azores, to Mozambique (Ebert and Stehmann 2013, Last et al. 2016). It has not been recorded from the Cape Verde Archipelago or São Tomé and Príncipe (Wirtz et al. 2007, Wirtz et al. 2013).

Country Occurrence:
Native, Extant (resident): Albania; Algeria; Angola; Benin; Bosnia and Herzegovina; Cameroon; Congo; Congo, The Democratic Republic of the; Croatia; Cyprus; Côte d’Ivoire; Egypt; Equatorial Guinea; France; Gabon; Gambia; Ghana; Gibraltar; 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; Turkey; Western Sahara

FAO Marine Fishing Areas:
Native: Atlantic - northeast
Native: Indian Ocean - western
**Native:** Atlantic - eastern central

**Native:** Atlantic - southeast

**Native:** Mediterranean and Black Sea
Population

There are no species-specific time-series data available for the Duckbill Eagle Ray that can be used to estimate population reduction. Despite the lack of species-specific data, there are a number of relevant historical accounts and contemporary datasets for landings and catch rates, and although landings data are not a direct measure of abundance, these can be used to infer population reduction where landings have decreased while fishing effort has remained stable or increased. In nearly all cases presented below, there is no reason to suspect that overall fishing effort has decreased. In fact, as human coastal population continues to grow and as fishing technology and market access improves, fishing effort and power is continuing to increase globally, with high increases in the Mediterranean Sea and Black Sea, Eastern Central Atlantic, Southeast Atlantic, and Western Indian Ocean regions (Anticamara et al. 2011, Watson et al. 2013, Belhabib et al. 2018).

First, in the Mediterranean Sea, this species was not caught in a trawl survey of the western, central, and eastern Mediterranean basin between 1994 and 1999 conducted as part of the International Trawl Survey in the Mediterranean (MEDIT) programme (Baino et al. 2001). Only two specimens were recorded as part of the MEDIT programme in the western Mediterranean (Iberian Peninsula and the Balearic Islands) from 1994 to 2015 (Ramirez-Amaro et al. 2020). Similarly, Damalas and Vassilopoulou (2011) found none during trawl surveys in the Aegean Sea from 1995–2006. Only one specimen was caught in scientific trawl surveys conducted in the Adriatic Sea between 1948 and 2005 (Ferretti et al. 2013). However, in recent years others have reported small numbers of this species in the northern Mediterranean Sea, including Puerto de Mazarrón off southeastern Spain (Hernández-Orts et al. 2010), the southeast Aegean Sea (Corsini-Foka and Frantzis 2009), the eastern Ionian Sea (Zogaris and Dussling 2010), Iskenderun Bay and Izmir Bay off Turkey (Başusta et al. 2012, Akyol et al. 2017), which suggests that although rare, it still occurs in this region. Indeed, an experimental trawl fishery in the Aegean Sea (Izmir Bay, Turkey) revealed that this species was one of the least prevalent non-commercial species, representing up to 0.17% of the total catch weight during the winter months and 0.046% in the spring and was not recorded in the summer and autumn (Gurbet et al. 2013). In 2017, one specimen was recorded from pelagic trawls in the Adriatic Sea with a bycatch rate of 0.006 (specimen per days at sea) (ICES-WGF 2019). Furthermore, capture of pregnant females in the northern Adriatic Sea suggests this species is reproducing in the area (Dulcic et al. 2008).

Second, in the Eastern Central and Southeast Atlantic, both overall catch and effort have continued to rise in the major shark fishing countries of Nigeria, Mauritania, and Ghana, and consequently population reduction cannot be inferred from these increasing trends, but this does indicate rising fishing pressure. The greatest fishing effort and largest reported elasmobranch fisheries in the whole of Africa were the West African countries of Nigeria (13,238 t), Senegal (10,757 t) and Ghana (1,902 t) (FAO 2002, Walker et al. 2005). Nevertheless, given the lack of reporting in artisanal fisheries and the large number of nations fishing in African waters, actual landings are likely to be much higher. Overall, across the West Africa region, the average elasmobranch catch-per-unit-effort (CPUE) has decreased by 71% from 1970 to 2015. The average elasmobranch CPUE in the region was 0.68 t/kW in 1970 and declined to 0.20 t/kW in 2015 (Pauly et al. 2020). Simultaneously, the average elasmobranch catch has increased by more than 2.5 times (250%) from 1970–2015. The average elasmobranch catch in the region was 3,312 t in 1970 and increased to 8,329 t in 2015 (Pauly et al. 2020). This implies a dramatic increase in fishing effort as the elasmobranch catch volume has increased but the CPUE has decreased. Within countries, catches have historically increased but have peaked and begun to decline in recent years. More
specifically, in Senegal, reconstructed landings of sharks, rays, and skates showed a decline of at least 30%, and maybe as much as an 80% decline, over 15 years from 2001–2016. Catches gradually rose from 3,644 t in 1950 to 20,180 t in 1972 then declined to 4,211 t in 1981 (80% decline), then rose steeply to a peak of 23,194 t in 2001 followed by a fluctuating decline to 4,734 t in 2016 (Pauly et al. 2020). In Cameroon, reconstructed landings of sharks, rays, and skates have been rising since the 1960s but showed a 96% decline over the years from 2007–2016. Historically, catches quickly rose from 391 t in 1950 to 2,881 t in 1974 then showed a decline to 712 t in 1986 (75% decline). Elasmobranch catch then rose to a peak of 7,516 t in 2007 followed by a steep decline to 303 t in 2016 (Pauly et al. 2020). In Nigeria, reconstructed landings of sharks, rays, and skates have been rising since the 1970s but showed a 19% decline over the years from 2010–2016. Historically, catches quickly rose from 2,419 t in 1950 to 25,144 t in 1980 then rose to a peak of 31,273 t in 2010 followed by a fluctuating decline to 25,396 t in 2016 (Pauly et al. 2020). These declines in landings can be inferred to represent reductions in their populations, as the fishing effort has remained stable during the period of a decline in landings (Pauly et al. 2020). This steep increase landings coincides with a steep rise in fishing effort and an overall 44% reduction in elasmobranch CPUE from 0.107 in 1981–1983 to 0.060 in 2013–2015.

Third, contemporary patterns of landings indicate that, with the exception of Mauritanian waters, there have been limited records of this species in the past decade from across the Eastern Central Atlantic region. In Mauritania, this species is still recorded in regular fisheries monitoring surveys undertaken by the Institut Mauritanien de Recherches Océanographiques et de Pêches in the Parc National du Banc d’Arguin as well as experimental research fishing surveys across territorial waters since 2009 with between 12–117 individuals captured each year (although 1,096 animals were recorded in 2018) (M. Dia unpubl. data 2020). While this species was reported as one of the most common elasmobranch in research surveys off Guinea-Bissau in 1989, and relatively common in Senegal in 2002 as well as recorded in the fisheries monitoring program by the Centre de Recherche Océographique Dakar-Thiaroye (CRODT) between 1985–1988 (Mar 2008), it was not recorded again during regular landing site surveys between 2004–2011 (Seck et al. 2002, Diop and Dossa 2011). In fact during this survey period, this species was only very rarely recorded in Guinea during extensive landing site surveys across the Sub-Regional Fisheries Commission region (Diop and Dossa 2011). It was also recorded in trawl surveys undertaken in Guinea from 1985–2012 (Camara et al. 2016). In The Gambia, two specimens (one in 2011 and one in 2018) were recorded during landing site surveys conducted annually between 2010–2018 despite other species of rays with similar catchability being present in large quantities (Moore et al. 2019). Recent records are relatively rare in other countries with a few records from Guinea-Bissau (Bijagos Archipelago) in 2018, one specimen recorded in Côte d’Ivoire during landing site surveys in 2019, and no records from Nigerian research surveys or landing site surveys in Western Ghana in 2019 and 2020 (G.H.L. Leurs, K. Metcalfe, I. Seidu, and A.B. Williams unpubl. data 2020). In Cameroon, only two specimens have been recorded over two years of landing site surveys representing 0.05% of all shark and ray records (A. Tamo unpubl. data 2020). In the trawl fisheries observer data from Gabon, this species along with other Myliobatiformes (Lusitanian Cownose Ray (Rhinoptera marginata), Whitepotted Eagle Ray (Aetobatus narinari), and Common Eagle Ray (Myliobatis aquila)), represented 0.01% of rays captured while it was rarely recorded in artisanal fisheries landings operating in Mayumba using demersal-set gillnets (G. De Bruyne and E. Chartrain unpubl. data 2020). In the Republic of the Congo, about 15 specimens, representing less than 1% of landings were recorded during landing site surveys from January to December 2019 (P. Doherty unpubl. data 2020). In Angola, no specimens were recorded during opportunistic landing site surveys in 2018.
Similarly, cruise reports from the "Dr. Fridtjof Nansen" surveys indicate that this species was not caught in 2004 (Congo, Gabon, and Angola), 2006 (Nigeria, Cameroon, Sao Tome and Principe, Gabon, and Congo), 2007 (Angola), 2008 (Côte d’Ivoire, Ghana, Benin, Togo, Cameroon, Sao Tome and Principe, Gabon, and Congo), and 2010 (Gabon and Congo) (Krakstad et al. 2004, Krakstad et al. 2006, Krakstad et al. 2008, Mehl et al. 2010).

Fourth, there are no population trends for this species in Namibia, however, fishing pressure is suspected to be minimal in this portion of its range. In South Africa, between 2010–2012, local catch was estimated at 1–10 t per year with trawl fisheries as the main contributor followed by the KwaZulu Natal bather protection program, and recreational and commercial line fisheries (da Silva et al. 2015). The species was not reported in catches of the demersal inshore trawl (hake) fisheries between 2003–2006 (Attwood et al. 2011). In the KwaZulu Natal prawn trawl industry on the Thukela Banks, six individuals were recorded in 169 trawls between 1989–1992 and based on the observer recorded catches, the extrapolated average annual catch was 105 (Fennessy 1994). The species was recorded throughout the year and was common during the summer months prior to 1967 in Durban and Richards Bay (Wallace 1967). In the period of 1977–2000, 246 animals were recorded representing 0.1% of the catches by competitive shore anglers along the KwaZulu Natal coast (Pradervand et al. 2007). Between 1981–2001, overall, 798 animals representing 11.31% of total batoid catches and consisting mainly of juveniles were caught in Natal Sharks Board bather protection netting with 26 occurrences of three or more Duckbill Eagle Rays caught in one or two days (Young 2001). Mean annual catch was 39.9 and mean catch rate was 0.98 (number animals/km net/yr). During the study period there was considerable variation in catch rate (0.47–1.78) and no significant trend was apparent. There was, however, a significant increasing trend in size caught. Mortality levels were moderate (44.2%, mean = 17.65 animals/year) and there was no significant trend in mortality over the time period. The highest catches occurred at Richards Bay, Zinkwazi, and Durban. Overall, it is difficult to determine the impact of Natal Sharks Board nets on the population, but it is likely to be localized, as this species is not exploited anywhere else to a great extent (Young 2001). It is also caught by recreational fishers (shore anglers) but is generally released alive after capture (Van der Elst 1988) and angling catch figures are not available. There are no population trends for this species in Mozambique, however, fishing pressure is suspected to be intense and unmanaged in the small portion of its range there.

Overall, considering these 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 Duckbill Eagle Ray 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 A2d.

**Current Population Trend:** Decreasing

**Habitat and Ecology** (see Appendix for additional information)

The Duckbill Eagle Ray is demersal and semi-pelagic in estuaries, lagoons, and on the continental shelf to a depth of 150 m (Wallace 1967, Last et al. 2016). 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, Last et al. 2016). 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, Last et al. 2016). There is no information on this species’s age-at-maturity and maximum age and hence, generation length was inferred based on data for the Bat Eagle Ray (Myliobatis californicus). The Bat Eagle Ray has an age-at-maturity of five years and a maximum age of 24 years and, thus, a generation length of 14.5 years (Martin and Caillet 1988). The Duckbill Eagle Ray has a larger maximum size (222 cm DW) than the Bat Eagle Ray (180 cm DW), and thus based on scaled-size, the generation length is inferred to be 17 years for the Duckbill Eagle Ray.

**Systems:** Marine

**Use and Trade**

The Duckbill Eagle Ray is now not exploited or traded commercially in the Mediterranean region. In West Africa, it is heavily utilized for its meat. While little-species specific information is available, the meat of rays is consumed fresh across many coastal communities in the region as an important source of protein (Walker et al. 2005). It is also dried or dried and smoked and exported across West Africa to supply countries such as Ghana, Guinea, Nigeria, Mali, and Burkina Faso.

**Threats (see Appendix for additional information)**

The Duckbill Eagle Ray is taken as bycatch in industrial and artisanal fisheries with multiple fishing gears including trawl, gillnet, set net, tangle net, and trammel net, and is retained for human consumption. There is a high level of fisheries resource use across the range of the Duckbill Eagle Ray.

In the Mediterranean Sea, the Duckbill Eagle Ray is sometimes landed in fisheries as bycatch, particularly in the northern Mediterranean Sea (Başusta et al. 2012, Akyol et al. 2017). This water body has been subject to extensive and intensive fishing across much of the species’ known depth and spatial distribution with trawl fisheries operating over a wide bathymetric range (50–800 m) and targeting a variety of species (Leonard and Maynou 2003, Tsikliras et al. 2015). Following two centuries of fisheries development, targeted shark and ray fisheries developed in the 1950s, with catches peaking until the 1970s, after which a decreasing trend was reported along with a decline in diversity of species (Cavanagh and Gibson 2007, Davidson et al. 2016). A number of shark and ray species are now considered to be locally extinct due to overexploitation (e.g., Ferretti et al. 2008). In the Eastern Central Atlantic, sharks and rays were already being exploited by semi-industrial fisheries in the 1950s (Walker et al. 2005). While these fisheries gradually collapsed, the demand for dried salted shark meat (for export to Ghana) and shark fins in the 1980s drove the development of artisanal targeted shark fishing across much of the region (Diop and Dossa 2011, CCLME 2016, Seto et al. 2017, Moore et al. 2019). Over the years, this has expanded into targeted shark and ray fisheries across many countries and is likely increasing fishing pressure on this species (Walker et al. 2005, Diop and Dossa 2011). Furthermore, this has led to population reductions of many species of sharks and rays including the local extinction of sawfishes (family Pristidae) from West African coastal waters and several species of wedgefishes from...
their northern range in Mauritania and Senegal (e.g., False Shark Ray (*Rhynchorhina mauritaniensis*) from the Parc National du Banc d'Arguin and the African Wedgefish (*Rhynchobatus luebberti*) from the Sine-Saloum Delta) (Walker *et al.* 2005, Fernandez-Carvalho *et al.* 2014, Kyne *et al.* 2020). Sharks and rays are still targeted in a number of countries by artisanal fishers using drift gillnets and demersal set gillnets with large mesh sizes (e.g., Mauritania, Nigeria, Ghana, Cameroon; M. Diop, I. Seidu, A. Tamo, and A.B. Williams unpubl. data 2020).

In general, fishing effort and the number of fishers has intensified in recent decades across most of the range of this species. In West Africa, reports indicate that the diversity and average body size of many important commercial coastal, demersal, and pelagic fishery species have markedly declined with many stocks now considered to be overexploited (Ajayi 1994, Srinivasan *et al.* 2012, CCLME 2016, Polidoro *et al.* 2016). Trawl surveys carried out across the Gulf of Guinea from 1977 to 2000 showed a decline in fish biomass of demersal resources and deep sea pelagic catches of approximately 50% (Brashares *et al.* 2004). Further, in Mauritania, the total demersal biomass of inshore stocks is estimated to have declined by 75% since 1982 (Meissa and Gascuel 2015). The direct cause of decline for many of these stocks has been attributed to overcapacity within both the industrial and artisanal fisheries in addition to destructive fishing practices (GCLME 2006, CCLME 2016). Overall, between 1950–2010, the total artisanal fishing effort increased by 10-fold with an estimated 252,000 unregulated artisanal and 3,300 industrial vessels operating in this region by 2010 (mostly distant water fleets from Europe and East Asia operating under ‘access agreements’ that take sharks and rays as bycatch) (Walker *et al.* 2005, Diop and Dossa 2011, Belhabib *et al.* 2018).

Destructive fishing practices including intensive inshore and offshore trawling with increasing incursions into coastal areas, the use of explosives and chemicals in inshore areas, and the use of small-sized beach and purse seine nets in both nearshore and offshore regions, have contributed to depleted fish stocks across the Eastern Central Atlantic region and which covers most of the species’ range (Koranteng 1998, GCLME 2006, Gascuel *et al.* 2007). Specifically, China’s West African fleet has rapidly increased in recent years with an estimated 518 vessels (82% of them trawlers) currently operating in the Eastern Central Atlantic (mostly between Morocco and Gabon) (Gutiérrez *et al.* 2020). This region also has some of the highest levels of Illegal, Unreported, and Unregulated (IUU) fishing in the world and it is estimated that illegal catches exceed more than 40% of the reported legal catch (Pauly and Zeller 2016).

The Duckbill Eagle Ray 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 (van der Elst 1988), release mortality is unknown and could be substantial due to the angling practices of gaffing and weighing. However, shoreline fisheries effort has decreased over the last 18 years as a result of a 2002 South African ban on all terrain vehicles on beaches. Trawl fisheries effort here is heavy along the west and south coasts, and was formally heavy along the east coast. However, these fisheries have decreased in effort in over the last decade, and parts of Namibia are remote with very little fishing pressure (Belhabib *et al.* 2015, da Silva *et al.* 2015). On the other hand, heavy and unmanaged trawl fishing and artisanal fisheries effort exist in Mozambique which may threaten this species (Jacquet *et al.* 2010, Benkenstein 2013).

The shallow, inshore soft-substrate habitats preferred by rays are threatened by habitat loss and environmental degradation (Stobutzki *et al.* 2006, White and Sommerville 2010, Jabado *et al.* 2017).
Indirect and sublethal sources of mortality include coastal habitat destruction and degradation, 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 (GCLME 2006, FAO 2007, Polidoro et al. 2016). For example, in West Africa, mangroves are harvested for fuel wood, construction timber, and charcoal with an overall mangrove forest area decline of up to 70% in some countries over the last 20 years with the highest loses recorded from Côte d’Ivoire (67%), Liberia (65%), Guinea (60%), Sierra Leone (40%), and Ghana (30%) (FAO 2007, Polidoro et al. 2016, CCLME 2016).

**Conservation Actions (see Appendix for additional information)**

There are no known conservation measures in place for this species. Although countries across its range have legislations concerning fisheries activities (including gear restrictions, and no-trawling zones in coastal waters), fisheries taking the Duckbill Eagle Ray are generally unmanaged throughout large parts of the species’ range and it is unlikely that pressure will decrease in the near future.

In the Mediterranean and Black Sea, skate and ray Total Allowable Catches (TAC) were established for parts of the European region in 2009, including International Council for the Exploration of the Sea (ICES) sub-areas VIII (Bay of Biscay) and IX (Iberian waters) where this species is known to occur. At present, the TAC for these Divisions is 3,800 t per year for all skates and rays combined (regulations available online at http://faolex.fao.org). In Turkey, fisheries for all species belonging to the family Myliobatidae have been banned since April 2018 (Bilecenoglu 2019).

In West Africa, a number of countries have either adopted a Regional Plan of Action for the Conservation of Sharks (Sub-Regional Fisheries Commission countries from Mauritania to Sierra Leone, including Cape Verde) or are currently working on developing a National Plan of Action (e.g., Liberia) to conserve sharks and rays and manage their fisheries for sustainability under the Food and Agriculture Organization of the United Nations (FAO) International Plan of Action for the Conservation and Management of Sharks (IPOA). However, progress towards the implementation of these actions have stalled since 2011 due to lack of funding and support (M. Diop unpubl. data 2020).

The Regional Marine Protected Areas Network in West Africa (RAMP-AO) was set up in 2007 across six countries (Mauritania to Sierra Leone) to conserve representative samples of critical habitats and protect threatened species but many of these protected areas lack capacity, funding, infrastructure, and governance for effective enforcement and conservation (Polidoro et al. 2016). Therefore, it is unlikely that they provide a refuge for this species. In fact, shark and ray fishing has been prohibited in the Parc National du Banc d’Arguin in Mauritania since 2003 but sharks and rays are still frequently landed as bycatch (M. Diop unpubl. data 2020). Other countries such as Gabon, the Republic of the Congo, and Côte d’Ivoire are in the process of expanding their marine protected areas coverage, however, financial and technical support will also be required to ensure they can be enforced and that they promote connectivity and protect key life history stages (K. Metcalfe unpubl. data 2020).

In South Africa, the network of marine protected areas is extensive and some areas may provide refuge for this species. For example, the iSimangaliso Marine Protected Area protects 200 km of coastline, runs from the southern Mozambique border southwards, extends offshore to a depth of 400 m, and has
been in place for approximately 40 years. Furthermore, the recreational line fishery in South Africa is managed by a bag limit of one/species/person/day for chondrichthyans, which includes the Duckbill Eagle Ray. Beach seine fishers in the West Cape are not permitted to retain sharks or rays. To conserve the population and to permit recovery, a suite of measures will be required which may include species protection, spatial management, bycatch mitigation, and harvest and trade management measures (including international trade measures). Effective enforcement of measures will require ongoing training and capacity-building (including in the area of species identification). Catch monitoring is needed to help understand population trends and inform management.

Credits


Reviewer(s): Charvet, P., Carlson, J. & Rigby, C.L.

Contributor(s): Pacoureaux, N. & Gravel, S.

Facilitator(s) and Compiler(s): Dulvy, N.K., Jabado, R.W. & Diop, M.

Authority/Authorities: IUCN SSC Shark Specialist Group (sharks and rays)
Bibliography


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**Citation**


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Appendix

Habitats
(http://www.iucnredlist.org/technical-documents/classification-schemes)

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<th>Habitat</th>
<th>Season</th>
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Use and Trade
(http://www.iucnredlist.org/technical-documents/classification-schemes)

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Threats
(http://www.iucnredlist.org/technical-documents/classification-schemes)

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<td>Whole (&gt;90%)</td>
<td>Rapid declines</td>
<td>High impact: 8</td>
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<tr>
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<td>Majority (50-90%)</td>
<td>Rapid declines</td>
<td>Medium impact: 7</td>
</tr>
<tr>
<td>Stresses: 2. Species Stresses -&gt; 2.1. Species mortality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Biological resource use -&gt; 5.4. Fishing &amp; harvesting aquatic resources -&gt; 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]</td>
<td>Ongoing</td>
<td>Whole (&gt;90%)</td>
<td>Rapid declines</td>
<td>High impact: 8</td>
</tr>
<tr>
<td>Stresses: 2. Species Stresses -&gt; 2.1. Species mortality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Biological resource use -&gt; 5.4. Fishing &amp; harvesting aquatic resources -&gt; 5.4.4. Unintentional effects: (large scale) [harvest]</td>
<td>Ongoing</td>
<td>Whole (&gt;90%)</td>
<td>Rapid declines</td>
<td>High impact: 8</td>
</tr>
<tr>
<td>Stresses: 2. Species Stresses -&gt; 2.1. Species mortality</td>
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</tbody>
</table>

Conservation Actions in Place
## Conservation Action in Place

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-place research and monitoring</td>
<td>Action Recovery Plan: No</td>
</tr>
<tr>
<td></td>
<td>Systematic monitoring scheme: No</td>
</tr>
<tr>
<td>In-place land/water protection</td>
<td>Conservation sites identified: No</td>
</tr>
<tr>
<td></td>
<td>Area based regional management plan: No</td>
</tr>
<tr>
<td></td>
<td>Occurs in at least one protected area: Yes</td>
</tr>
<tr>
<td></td>
<td>Invasive species control or prevention: Not Applicable</td>
</tr>
<tr>
<td>In-place species management</td>
<td>Harvest management plan: No</td>
</tr>
<tr>
<td></td>
<td>Successfully reintroduced or introduced benignly: No</td>
</tr>
<tr>
<td></td>
<td>Subject to ex-situ conservation: No</td>
</tr>
<tr>
<td>In-place education</td>
<td>Subject to recent education and awareness programmes: Unknown</td>
</tr>
<tr>
<td></td>
<td>Included in international legislation: No</td>
</tr>
<tr>
<td></td>
<td>Subject to any international management / trade controls: No</td>
</tr>
</tbody>
</table>

## Conservation Actions Needed

1. Land/water protection -> 1.1. Site/area protection
3. Species management -> 3.1. Species management -> 3.1.2. Trade management
3. Species management -> 3.2. Species recovery
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level

## Research Needed
**Research Needed**

1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.4. Harvest, use & livelihoods
3. Monitoring -> 3.2. Harvest level trends

**Additional Data Fields**

**Distribution**

Lower depth limit (m): 150

Upper depth limit (m): 0

**Habitats and Ecology**

Generation Length (years): 17
The IUCN Red List Partnership

The IUCN Red List of Threatened Species™ is produced and managed by the IUCN Global Species Programme, the IUCN Species Survival Commission (SSC) and The IUCN Red List Partnership.

The IUCN Red List Partners are: Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; NatureServe; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.