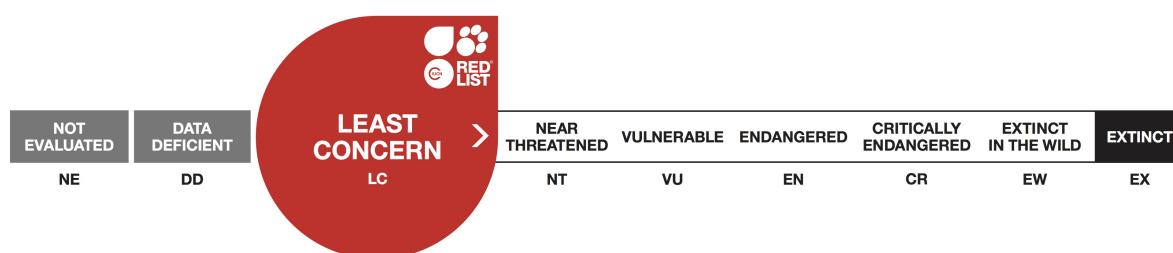




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Epinephelus malabaricus, Malabar Grouper

Assessment by: Samoilys, M., Amorim, P., Choat, J.H., Law, C., Ma, K., Myers, R., Nair, R., Rhodes, K., Russell, B., Suharti, S. & To, A.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Perciformes	Epinephelidae

Taxon Name: *Epinephelus malabaricus* (Bloch & Schneider, 1801)

Synonym(s):

- *Epinephelus malabaricus* (Bloch & Schneider, 1801)

Common Name(s):

- English: Malabar Grouper
- French: Mérou Malabare
- Spanish: Mero Malabárico

Taxonomic Notes:

There has been taxonomic confusion and misidentifications between *Epinephelus coioides*, *E. tauvina* and *E. malabaricus* (Heemstra and Randall 1993). Therefore, historical data for *E. malabaricus* can be uncertain.

Assessment Information

Red List Category & Criteria: Least Concern [ver 3.1](#)

Year Published: 2018

Date Assessed: November 18, 2016

Justification:

This widely distributed species inhabits a variety of nearshore habitats. It can be common in parts of its range and is relatively fast-growing. Adults and juveniles are exploited by fisheries, especially for the live reef fish food trade based in Hong Kong. Population declines have occurred in the Andaman Islands, New Caledonia and the Philippines, and probably elsewhere in areas of heavy fishing pressure, but the level is not known or quantified. Even anecdotal information is missing from large areas of the range of this grouper, including Indonesia, most of East Africa, the Red Sea and New Guinea. Populations are considered to have remained healthy in Australia. Overfishing is a threat on a localised basis, and is not known to be driving global-level population declines that would approach a 'threatened' level. Therefore, it is listed as Least Concern. It is strongly recommended that fishery management and data collection is improved to monitor population trends, as well as additional research on its life history. The change in status from the previous assessment reflects an improved application of the Red List categories and criteria, as well as a better understanding of available data.

Previously Published Red List Assessments

2006 – Near Threatened (NT)

<http://dx.doi.org/10.2305/IUCN.UK.2006.RLTS.T61338A12463955.en>

Geographic Range

Range Description:

This species is distributed in the Indo-Pacific from East Africa to the Red Sea, east to Tonga, north to the Ryukyu Islands, Japan and south to northern Australia. It is absent from the Persian Gulf (Heemstra and Randall 1993, Craig *et al.* 2011). Its depth range is one to 150 metres.

Country Occurrence:

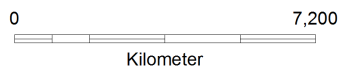
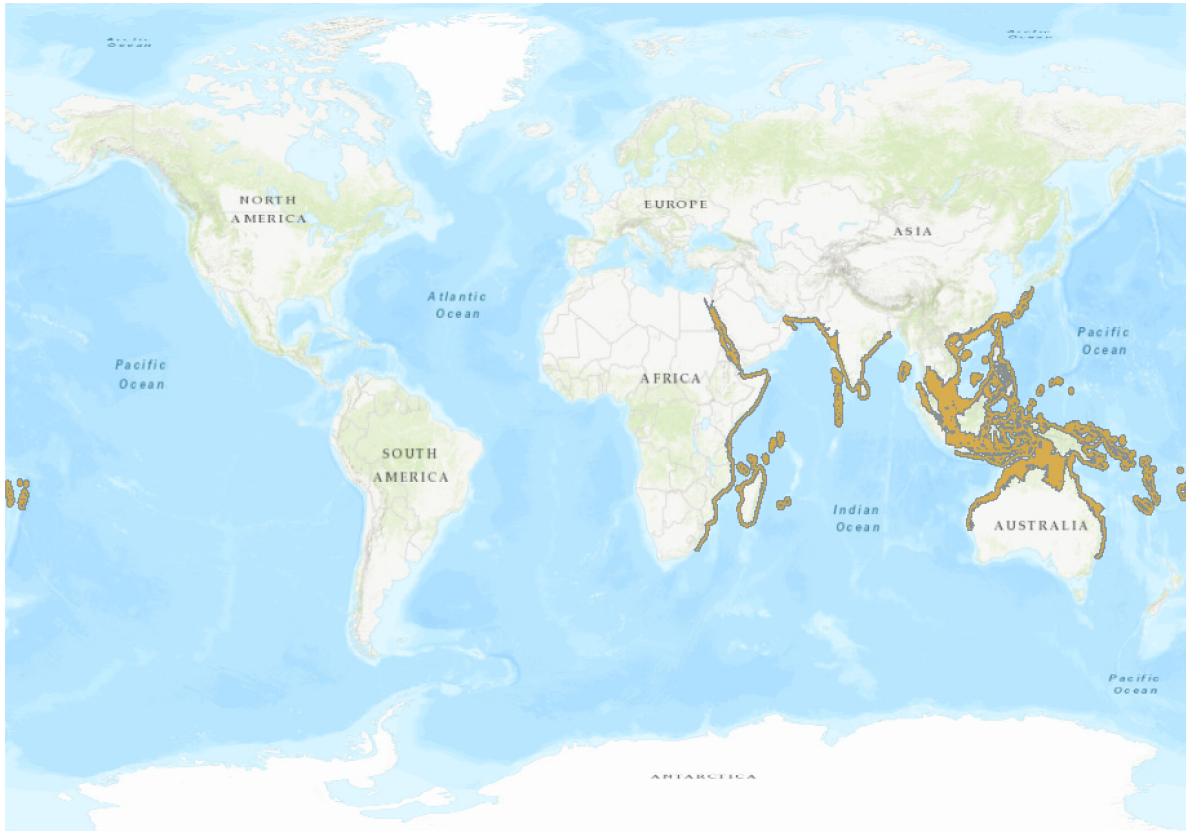
Native: Australia; Brunei Darussalam; Cambodia; China; Comoros; Disputed Territory (Paracel Is., Spratly Is.); Djibouti; Egypt; Eritrea; Fiji; French Southern Territories (Mozambique Channel Is.); Hong Kong; India; Indonesia; Iran, Islamic Republic of; Israel; Japan; Jordan; Kenya; Macao; Madagascar; Malaysia; Mauritius; Mayotte; Micronesia, Federated States of ; Mozambique; New Caledonia; Oman; Pakistan; Palau; Papua New Guinea; Philippines; Réunion; Saudi Arabia; Seychelles; Singapore; Solomon Islands; Somalia; South Africa; Sri Lanka; Sudan; Taiwan, Province of China; Tanzania, United Republic of; Thailand; Timor-Leste; Tonga; United Arab Emirates; Viet Nam; Wallis and Futuna; Yemen

FAO Marine Fishing Areas:

Native: Atlantic - southeast, Indian Ocean - eastern, Indian Ocean - western, Pacific - southwest, Pacific - northwest, Pacific - western central, Pacific - eastern central


Distribution Map

Epinephelus malabaricus



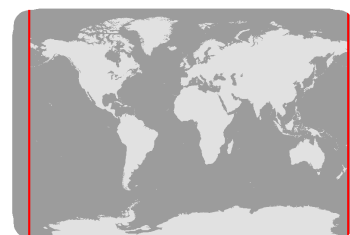
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Range

 Extant (resident)

Compiled by:

IUCN Grouper and Wrasse Specialist Group



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



Population

This species can be relatively common in parts of its range, including Australia (Heemstra and Randall 1993, Sheaves 1995). Information on population abundance and fishery catches of *Epinephelus malabaricus* is limited largely due to historical confusion/misidentification with *E. coioides* and *E. tauvina*. Recent fishery-independent estimates of population densities found zero or low densities of this species on shallow coral reefs (shallower than 30 m) (<http://reeflifesurvey.imas.utas.edu.au/portal/search> accessed October 2014; M. Samoily's unpublished data 2009-2015). It is targeted during all life history stages throughout its range, including for the live reef food fish trade, and is probably overfished in some countries, sometimes markedly. Although, fishing pressure on *E. malabaricus* has reduced the global population, quantitative data on changes in population size are not available to estimate percent decline. This species is not regularly monitored either by visual census or in any fisheries. Furthermore, even anecdotal information is missing from large areas of its range, including Indonesia, the Red Sea and New Guinea. In addition, historical confusion with other grouper species introduces significant uncertainty when discerning population trends.

New Caledonia: Historically, *E. malabaricus* was common in New Caledonia, but has become rare in shallow waters over the past 20 years. Some individuals remain in deeper waters (M. Kulbicki pers. comm. 2004). It is considered overexploited in the southern lagoon along most of the west coast of New Caledonia. On the east coast and in the Loyalty Islands, the stock is probably moderately exploited, but abundance has declined from levels 30 to 40 years ago judging from photographs taken at that time. The average size observed at Noumea market is around 5-10 kg and the maximum size around 25 kg. The species is regularly present in catches, especially during the spawning season, but never in large quantities (M. Kulbicki pers. comm. 2004)

strong style="">

Malaysia: This species is commonly sold in Malaysian markets, but usually in small quantities.

India: This is a common species along the west coast of India and in the Gulf of Mannar. It is also one of the dominant species in the Andaman Islands, and may be exploited there in large quantities for the live fish trade (J. Charles pers. comm. 2004).

East Africa: Historical aggregate grouper landings data (1978-2001) from Kenya declined by about 80% since peaking in the 1980s. In southern Kenya, 67 individuals of this species were observed in local fisheries during a six-month survey. Together with *E. coioides* and *E. fuscoguttatus*, *E. malabaricus* comprised the bulk of the grouper catch in terms of biomass (Agembe *et al.* 2010). Some grouper populations are protected within Kenyan marine parks, but even in those areas, densities are very low. During a two year trapping project within two Malindi and Watamu marine parks in Kenya, only one specimen of *E. malabaricus* (>60 cm) was taken (B. Kaunda-Arara pers. comm. 2003).

Asia-western Pacific: The species was not recorded during a rapid biodiversity assessment of the Calamianes Islands in Palawan Province, Philippines (Werner and Allen 2000) or in the Raja Ampat Islands in West Papua, Indonesia (McKenna *et al.* 2002), or in the Togean and Banggai Islands in Sulawesi, Indonesia (Allen and McKenna 2001). The species was also not recorded in surveys conducted from 2007 to 2015 in the Coral Triangle, the main Hawaiian Islands, American Samoa, Mariana, Northwestern Hawaiian Islands and Pacific Remote Islands (NOAA 2016). Only two individual sightings

are reported from the Pacific Islands over a 10 year time span (2001-2011) - from Vanuatu and Kiribati (Pacific Regional Oceanic and Coastal Fisheries Development Programme). Juveniles of *E. malabaricus* are wild-caught and used to supply mariculture in Indonesia, Malaysia, Thailand, Vietnam, the Philippines, Sri Lanka and China. It is the most commonly taken species after *E. coioides* in many areas (Sadovy 2000, Gaspare and Bryceson 2013). In the Philippines, *E. coioides* and *E. malabaricus* comprise most of the catch of juveniles for grow-out in the Philippines and anecdotal declines of up to 50% have been reported for some areas due to overfishing and possibly habitat degradation (Sadovy 2000).

strong style="">

Western Indian Ocean and Gulf of Aden: Underwater surveys conducted in the western Indian Ocean from 2009 to 2015 did not record this species in Tanzania, Comoros and northeastern Madagascar (Samoilys and Randriamanantsoa 2011, M. Samoilys unpublished data). It was only observed at two sites in 2011 in northern Mozambique (average density 0.31 fish/ha; Samoilys *et al.* 2011). It was not observed in Chagos, which suggests this species may not occur there. It has been observed on the remote fully protected area of Isle Glorieuses (France) with densities ranging from zero to 0.93 fish per hectare (0-8.06 kg/ha). Densities were higher in Djibouti, ranging from zero to 2.78 fish per ha (0.0-13.16 kg/ha). In the Andaman Islands, this species comprised 21.6% (1.296 tonnes) of annual grouper landings in 2010-2011, catch per unit effort varied from 4 to 16.5 kg per h⁻¹ and the population was considered overexploited (Kirubasankar *et al.* 2013).

Hong Kong: It is reportedly rare in Hong Kong (Sadovy and Cornish 2000) and recent surveys did not locate any individuals there as well (Shao and Ho 2016). A wet market survey conducted in Hong Kong from 2004 to 2006 recorded only 26 wild-caught individuals (To 2009). A survey conducted in Hong Kong wet markets and restaurants in 2012/2013 recorded 185 wild-caught and farmed individuals, and 100% of these were suspected to be immature based on the estimated maturity size (Lam 2013). It is not known how much of the marketed fish in southeast Asia is sourced from the wild (as adult or as juvenile for grow-out) versus from hatchery-based culture. **Taiwan:** Based on 10-15 years of underwater observation in a very limited locality in Taiwan, this species is regarded as "occasional" (K-T. Shao pers. comm. 2016).

strong style="">Australia: This is a fast growing species and there are healthy populations in the Great Barrier Reef (H. Choat pers. comm. 2016).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This demersal species occurs in a variety of habitats: coral and rocky reefs, tidepools, estuaries, mangrove swamps and sandy/mud bottom from the shore to depths of 150 m. Juveniles are found nearshore and in estuaries (Heemstra and Randall 1993, Sheaves 1995), while other studies have classified estuary populations of *Epinephelus malabaricus* in the Indo-Pacific as being comprised of both juveniles and adults. Maximum total length is 114 cm, and a 110 cm individual was aged to 19 years in Australia (H. Choat pers. comm. 2016). Fork length ranges from 12.2-62 cm for individuals caught from estuaries, and 58.2-76.2 cm from offshore waters. This species is a monandric protogynous hermaphrodite (Lau and Li 2000, Gaspare and Bryceson 2013) with sex transition occurring around ten years of age (Murata *et al.* 2010). Length at maturity is 58 cm in Indonesia (Mous and Pet 2016). Maturity size range is 45-50 cm total length (Lau and Parry-Jones 1999). A spawning aggregation is known from Prony Bay, New Caledonia (M. Kulbicki pers. comm. 2004). Though life history data are somewhat limited, this is considered to be a relatively fast-growing species with a medium age of sexual

maturity and large maximum size.

Systems: Marine

Use and Trade

This is an important grouper species taken in fisheries in the Indo-Pacific region. It is caught with handlines, trawls, longlines, traps, spear and hook-and-line (Heemstra and Randall 1993). It is targeted during all life history stages, especially for sale in the live reef food fish trade based in Hong Kong (Sadovy *et al.* 2003), but only aggregated import data are available (i.e., several grouper species are combined into one category). Mariculture of this species was first started in Penang in 1973 and continues with fry usually imported from Thailand, the Philippines or caught in local coastal waters (Mohsin and Amba 1996). Fry/fingerlings are taken from the wild for mariculture in Indonesia, Malaysia, Thailand, Vietnam, the Philippines, Sri Lanka and China. *Epinephelus malabaricus* is the most commonly taken species after *E. coioides* in many areas. Small individuals of both of these species are primarily taken from brackish water or mangroves (Sadovy 2000). Annual production from hatcheries in Thailand increased from 15,000 fish in 1991 to 265,200 in 1995 (Yashiro 1999). The species is also reared in Hong Kong (Lee and Sadovy 1998).

Threats (see Appendix for additional information)

Overfishing is a significant threat to this species in several parts of its range, but this is not considered a major threat on a global-level at this time. It may also be impacted by habitat degradation in estuarine areas.

Conservation Actions (see Appendix for additional information)

In Queensland, Australia, there is a size and bag limit for recreational catch of this species (<http://www.dpi.qld.gov.au/fishweb/11379.html>) and it occurs in the Great Barrier Reef Marine Park. In the Andaman and Nicobar Islands, fishing is banned for a period of 45 days from April 15 to May 31 annually for mechanised trawlers, gill netters and purse seiners (Kirubasankar *et al.* 2013). While many marine parks have been introduced in areas within the range of *E. malabaricus* (e.g., Papua New Guinea, Indonesia and the Philippines) most of these are considered to be 'paper parks' and are poorly managed or legislation is poorly enforced. However, some marine parks in East Africa that this species occurs in are relatively well-enforced (Mafia in Tanzania and Maimdi in Kenya; Gaspere and Bryceson 2013). It also occurs in Djibouti's marine parks (Samoilys *et al.* 2014). Larval rearing of this species has been achieved in Thailand (Tookwinas 1989) and hatchery production occurs in Taiwan.

Credits

Assessor(s): Samoilys, M., Amorim, P., Choat, J.H., Law, C., Ma, K., Myers, R., Nair, R., Rhodes, K., Russell, B., Suharti, S. & To, A.

Reviewer(s): Linardich, C.

Contributor(s): Cornish, A. & Cabanban, A.S.

Facilitators(s) and Compiler(s): Carpenter, K.E.

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Appendix

Habitats

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

Habitat	Season	Suitability	Major Importance?
9. Marine Neritic -> 9.2. Marine Neritic - Subtidal Rock and Rocky Reefs	Resident	Suitable	Yes
9. Marine Neritic -> 9.4. Marine Neritic - Subtidal Sandy	Resident	Suitable	Yes
9. Marine Neritic -> 9.5. Marine Neritic - Subtidal Sandy-Mud	Resident	Suitable	Yes
9. Marine Neritic -> 9.10. Marine Neritic - Estuaries	Resident	Suitable	Yes
12. Marine Intertidal -> 12.4. Marine Intertidal - Mud Flats and Salt Flats	Resident	Suitable	Yes
12. Marine Intertidal -> 12.6. Marine Intertidal - Tidepools	Resident	Suitable	Yes
12. Marine Intertidal -> 12.7. Marine Intertidal - Mangrove Submerged Roots	Resident	Suitable	Yes

Threats

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

Threat	Timing	Scope	Severity	Impact Score
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale) [harvest]	Ongoing	Unknown	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.2. Intentional use: (large scale) [harvest]	Ongoing	Unknown	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

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

Conservation Actions in Place
In-Place Land/Water Protection and Management
Occur in at least one PA: Yes
In-Place Species Management
Subject to ex-situ conservation: Unknown

Conservation Actions Needed

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

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
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

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

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
2. Conservation Planning -> 2.2. Area-based Management Plan
2. Conservation Planning -> 2.3. Harvest & Trade Management Plan
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Lower depth limit (m): 150
Upper depth limit (m): 1

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