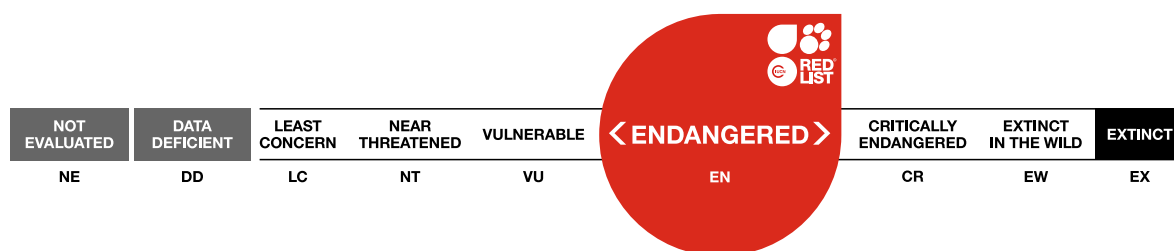


Cheilinus undulatus, Humphead Wrasse

Assessment by: Sadovy, Y., Craig, M.T., Pollard, D.A., Nair, R., Wen, C.K., Liu, M., Samoilys, M. & Santos, M.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Perciformes	Labridae

Scientific Name: *Cheilinus undulatus* Rüppell, 1835

Common Name(s):

- English: Humphead Wrasse, Giant Wrasse, Humphead, Humphead Maori Wrasse, Maori Wrasse, Napoleon Wrasse, Truck Wrasse, Undulate Wrasse
- French: Napoleon

Taxonomic Source(s):

Fricke, R., Eschmeyer, W.N. and Van der Laan, R. (eds). 2025. Eschmeyer's Catalog of Fishes: genera, species, references. Updated 09 April 2025. Available at: <https://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (Accessed: 09 April 2025).

Assessment Information

Red List Category & Criteria: Endangered A2bcd [ver 3.1](#)

Year Published: 2025

Date Assessed: July 17, 2024

Justification:

Humphead Wrasse is a heavily exploited and conservation-dependent species. Major extrinsic threats include unregulated or under-regulated fishing (particularly on juveniles for capture-based culture operations) and coral reef habitat loss. Intrinsic threats include aggregatory spawning and nocturnal resting behaviours, hermaphroditism, longevity and late onset of maturity, all of which work synergistically to increase the probability of rapid depletion of local populations where exploited. Available time series data on population trends are limited but clearly and consistently demonstrate major declines and localized extirpations at numerous sites throughout the species’ range. However, populations remain stable where they are effectively protected or unfished. It is inferred from the available data that this species has declined by at least 50% over the past 34 years (i.e., when global declines began to be documented). It is suspected that the population decline over the past three-generation time window (60 years, or ~1964–2024) is greater than 50% but not exceeding 80% and the causes of the decline have not ceased. Moreover, where exploited, which is across at least one third of its coral reef habitat globally, and not effectively managed, adults are now uncommon to absent, and future population reduction is suspected to exceed 50% over the next three generations due to overexploitation. It is therefore assessed as Endangered (EN A2bcd+3bd) with a recommendation to improve fishing regulation, protect coral habitat, and monitor abundance trends.

Previously Published Red List Assessments

[2004 – Endangered \(EN\)](#)

Geographic Range

Range Description:

This species is distributed in tropical and sub-tropical waters of the western Indian Ocean (including the Red Sea) to French Polynesia. It does not appear to occur in the Persian Gulf, the mainland coasts of the Arabian Sea, the northwest coast of Australia west of Cape York, or the Bay of Bengal. The depth range for this species is 2–100 m.

Country Occurrence:

Native, Extant (resident): American Samoa; Australia; British Indian Ocean Territory; Brunei Darussalam; Christmas Island; Cocos (Keeling) Islands; Comoros; Cook Islands; Disputed Territory; Djibouti; Egypt; Eritrea; Fiji; French Polynesia; Guam; India; Indonesia; Israel; Japan; Jordan; Kenya; Kiribati; Madagascar; Malaysia; Maldives; Marshall Islands; Mauritius; Mayotte; Micronesia, Federated States of ; Mozambique; Myanmar; Nauru; New Caledonia; Niue; Northern Mariana Islands; Palau; Papua New Guinea; Philippines; Pitcairn; Réunion; Samoa; Saudi Arabia; Seychelles; Singapore; Solomon Islands; Somalia; Sri Lanka; Sudan; Taiwan, Province of China; Tanzania, United Republic of; Thailand; Timor-Leste; Tokelau; Tonga; Tuvalu; United States Minor Outlying Islands; Vanuatu; Wallis and Futuna; Yemen

FAO Marine Fishing Areas:

Native: Pacific - western central

Native: Pacific - southwest

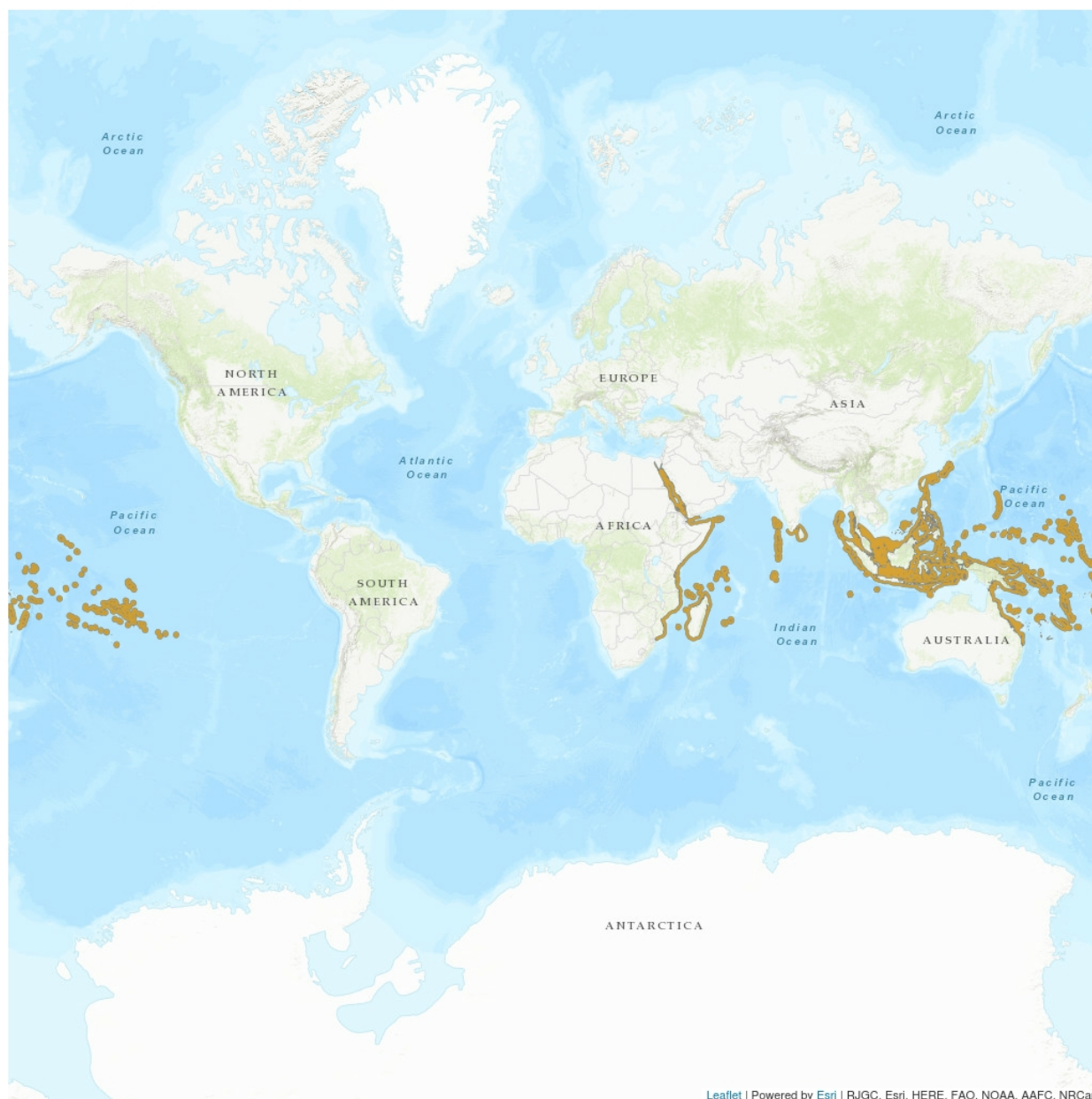
Native: Pacific - northwest

Native: Pacific - eastern central

Native: Indian Ocean - western

Native: Indian Ocean - eastern

Distribution Map



Leaflet | Powered by Esri | RJGC, Esri, HERE, FAO, NOAA, AAFC, NRCAN

Legend

■ EXTANT (RESIDENT)

Compiled by:

IUCN Marine Biodiversity Unit 2024



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 is widely distributed and naturally uncommon to rare; densities may exceptionally reach 20 fish per hectare, but are typically less than 10 fish per hectare. Wherever it is fished, even if only moderately, density quickly declines and adults rapidly disappear (Sadovy *et al.* 2003; Supplementary Information). It appears to be extirpated from several edge-of-range localities (Sadovy *et al.* 2003). In many countries, all available fishery-dependent and trade-related data suggest declines over 10–15 years in exploited areas of 10-fold or more, with the species now considered rare in areas where once it was common (see Supplementary Information). These findings are mirrored in fishery-independent data (mainly underwater visual census surveys). Buyers of this fish are continually having to source new areas as numbers decline and the pattern of fishing reported is one typical of rapid serial depletions. Much of the capture and trade in live fish are of small fish, predominantly juveniles, according to all reliable accounts as well as from observations of retail outlets and restaurants in Hong Kong and mainland China (major trade and consumer centres for the species); the consumer preference for ‘plate-sized’ fish partly drives this market size (Kindsvater *et al.* 2017) but large fish were formerly traded and have become rare or absent in many places. Severe declines have also been noted in source countries wherever the species is taken.

Nothing is known about the extent of subpopulations or population structure, or degree of fragmentation and molecular analysis does not indicate any population structure across a large portion of its range (Ma *et al.* 2019). It has declined substantially over a large percentage of its range, including Indonesia and the Philippines, where numbers are extremely low except in a few protected areas; these two countries alone make up 30% of the species' Indo-Pacific reef habitat. Considering that exploitation and illegal trade from both countries continue and management has not produced indications of population recovery, further declines under the status quo are predicted.

Global population declines in the species started in the 1990s, largely due to the live reef fish export trade which started sourcing the species from countries in Southeast Asia in the 1980s to supply seafood consumers mainly in Hong Kong and mainland China. The contribution of this species (by weight) to this trade is small but lucrative, and despite downturns due to poor economy or Covid-19 in recent years, is expected to continue due to its economic value and consumer interest. All animals are sourced from the wild, including those that are caught for operations of capture-based aquaculture (i.e., caught as juveniles and grown to market size in captivity, sometimes misnamed 'ranched'). Despite regulations in many places, illegal, unregulated and unmonitored trade continues, fishing is not at sustainable levels and enforcement can be weak, leading to low densities, few to no adults and small, mostly juvenile fish. On the other hand, the species remains abundant where effectively protected (e.g., in marine protected areas (MPAs) or where exploitation is controlled or limited, e.g., Maldives, Tubbataha Reef, Philippines, Banda Is. Indonesia, parts of Australia) or is not fished at all and recovery has been recorded when fishing activities cease (e.g., Karas, Indonesia). Protective legislation, including export bans, have been introduced in a growing number of countries due to concern for the species and in response to the species' listing on CITES Appendix II. The species is of much tourism interest in the Maldives and Palau (Friedlander *et al.* 2023, Roe *et al.* 2022). In 2023, Saudi Arabia banned the capture trade and sale of the species (<https://arablocal.com/news/saudi-arabia-bans-fishing-of-endangered-tarbani-fish>).

Various regional data sets are available from which population trends can be inferred over various time scales and these are summarized below (see Supplementary Information for detailed descriptions). In

most locations where fishing occurs and is not effectively managed, the numbers of large individuals (>50 cm) are noted to have declined to near zero values.

In the southwest Philippines, in TawiTawi, where the species has long been heavily fished for capture-based culturing, there has been an estimated 30–40% decline from 1980 to 2010 (30 years) compared to Tubbataha, which is effectively protected (Romero and Injani 2015, BFAR 2017, Nanola *et al.* 2021).

In Palau, Friedlander *et al.* (2023) calculated a 50% decline from 2013 to 2021 (eight years) and a decline of 66% in the spawning potential ratio (SPR) over the same time frame; at 4%, the SPR is well below the ideal sustainable SPR of 20%.

Compiled information from Indonesia from multiple locations shows an estimated 80% reduction from 1990 to 2015 (25 years) particularly of adults. In exploited areas, almost all fish are within the juvenile size range (Widiarto *et al.* 2023). Despite protection in Indonesia, populations are not recovering and fishing intensity has increased due to the intensification of ‘ranching’ activities (Hau and Sadovy de Mitcheson 2023).

Fisher interviews in Fiji suggest an 80% decline between 1980 and 2000 (20 years). Recent surveys in some areas suggest encouraging signs of recovery in the last decade (A. Batibasaga pers. comm. 2024).

In the Solomon Islands, visual census data indicate a population decline of 57% from 2000 to 2018 (18 years) (Hamilton *et al.* 2019).

In Pohnpei, market surveys imply a reduction in population of 95% from 2006 to 2016 (10 years) (Rhodes *et al.* 2018).

Visual census surveys across seven locations in the western and central Indian Ocean and Gulf of Aden from 2009 to 2015 found mean population biomass was not statistically greater than zero across the entire region except for Djibouti (Samoilys *et al.* 2024).

In India the species is uncommon to rare (Nair 2004, Sluka and Lazarus 2005, Nair *et al.* 2010)

No individuals were sighted in Iles Glorieuses and Comoros and well enforced Marine Protected Areas were found to be ineffective for this species in this study. In contrast, relatively high biomass is reported from other highly protected uninhabited islands in the Mozambique Channel (Chabanet *et al.* 2016).

Estimating global population declines in this species requires very broad assumptions to be made that render a truly quantitative measure difficult to obtain. From the available data and other information presented above and in the Supplementary Information, it is clear that populations of this species have declined substantially wherever it is exploited and not managed across multiple countries and locations throughout its geographic range. These declines have occurred over the past three generations with most occurring rapidly over the past three decades, mainly due to export trade. It is inferred from the available data that this species has declined by at least 50% over the past 34 years (i.e., when global declines began to be documented), but it is suspected that the population decline over the three-generation time window (60 years or ~1964–2024) is much higher but not exceeding 80%. Except in the few areas where this species has been protected or is not exploited, the cause of this decline (fishing)

has not ceased and is expected to continue into the future in the absence of new conservation or management actions.

For further information about this species, see [Supplementary Material](#).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Small post-settlement Humphead Wrasses may be found in a variety of habitats, including seagrasses (e.g., *Enhalysacoroides*), hard corals (e.g., *Acropora* spp. and *Porites cylindricus*), and soft corals (e.g., *Sarcophyton* sp.; Tupper 2007). Juveniles of 3–20 cm total length, and larger, occur in coral-rich areas of lagoon reefs, particularly among live thickets of staghorn, *Acropora* spp. corals, in seagrass beds, murky outer river areas with patch reefs, shallow sandy areas adjacent to coral reef lagoons, and mangrove and seagrass areas inshore (Randall 1955, Randall *et al.* 1978, Myers 1999; J.H. Choat pers. comm. 2004). Recruitment patterns may vary considerably between years (Tupper 2007). Adults are more common offshore than inshore, their presumed preferred habitat being steep outer reef slopes, reef drop-offs, reef tops, channel slopes, reef passes, and lagoon reefs down to at least 100 m. It is usually found in association with well-developed coral reefs (Vivien 1973; Randall *et al.* 1978; Winterbottom *et al.* 1989; Allen and Swainston 1992; Sluka 2000a,b). It feeds on a variety of molluscs, fishes, sea urchins, crustaceans and other invertebrates (Randall *et al.* 1997).

This species is relatively sedentary, with home range areas of at least 1,000 m² (possibly exceeding 5,000 m²) and with low dispersal of larger fish (Chateau and Wantiez 2007). Tagged females (Line Islands) can have large home ranges with the median of the longest linear dimension of 10.3 km, which is the largest known among coral reef teleost fishes (Weng *et al.* 2015). Males and juveniles have average home range linear distances of 2.9 km and 0.7 km across the longest dimension (Weng *et al.* 2015). A study in the Republic of Seychelles with tagged fish (*n* = 20) showed that fish exhibited persistent (>500 d) site fidelity and that there were low dispersal distances (mean $\pm$ SD: 6.44 $\pm$ 4.0 km) among large individuals (mean 97.9 $\pm$ 20.6 cm total length) (Daly *et al.* 2020).

This species typically occurs as solitary or paired individuals, but may occur in small groups of 3–7 individuals (Donaldson 1995). It may have a small home range; the same individuals, identifiable by distinct natural markings, may be seen along the same stretch of reef for extended periods (Daly *et al.* 2020). Indeed, many commercial dive sites have their ‘resident’ Humphead Wrasse, a favoured species for divers to observe. Adults are known to sleep in cavities and cave-like structures, using the same locations on a regular basis and this habit can make them highly predictable to find (Daly *et al.* 2020).

The pelagic larval phase of about 25 days potentially would allow larvae to travel long distances from point of spawning (Colin 2010). Available suitable reef habitat is evidently a major determinant of the species’ distribution. The species is hermaphroditic, changing sex from female to male; histological studies show that sexual maturation is reached at a size of between 40 cm and 60 cm total length; occasionally small males are found suggesting possible diandry (Sadovy de Mitcheson *et al.* 2010), with sex reversal occurring at about 12 years of age (Choat *et al.* 2006) and a total length of approximately ~80 cm (Choat *et al.* 2006). Accounts of reproductive activity in the field reveal that, depending on locality, this species has a protracted spawning season that can last for several months; in some regions, spawning occurs year-round in small or large aggregations that can form daily (Colin 2010), and

spawning occurs up to 2.5 hours after high tide (Colin 2010). Spawning does not appear to correlate with any specific habitat type but occurs on drop-off areas where shallow reef meets open water (P.L. Colin, J.H. Choat, R. Hamilton, S. Oakley pers. comm. 2004). The species is evidently a daily spawner that probably does not migrate far to its spawning site(s), spawning for extended periods each year, i.e., a 'resident' spawner (Domeier and Colin 1997, Colin 2010): groups of up to 150 fish were observed in Palau along the shelf edge in a loose aggregation. In Lakshadweep, Laccadives, spawning aggregations form with 50–80 individuals (Rucha Karkarey pers. comm. 2023). The aggregation female to male sex ratio was estimated to be between 6:1 and 10:1. A maximum of 15 males and 100–150 females were observed at the site (Colin 2010). The longevity of this species is at least 32 years and sexual maturity (females) is reached at about eight years of age (Choat *et al.* 2006).

Using a maximum age of 32 years and age of sexual maturity of eight years and applying the mean generational turnover formula in Depczynski and Bellwood (2006), one generation length is estimated at 20 years, therefore, we estimate three generation lengths to be about 60 years. The equation applied by Depczynski and Bellwood (2006) is similar to and yields the same result as the recommended methods in the IUCN Red List Guidelines for calculating generation length (IUCN Standards and Petitions Committee 2024) of "Age of first reproduction + [$z \times (\text{length of the reproductive period})$], where z is a number between 0 and 1; z is usually <0.5 , depending on survivorship and the relative fecundity of young vs. old individuals in the population."

Systems: Marine

Use and Trade

This species is a particularly valuable component of the live reef fish food trade as well the processed fish trade on local, domestic, and international scales. Such is its value that capture-based culturing (termed "ranching" under CITES), the grow-out of wild-caught juveniles, has become a major component of the use and trade of the species. This process involves the capture of wild-caught juveniles followed by a prolonged (up to four or five years) period in captivity to grow the fish to marketable size. Ranching operations in part of the country are not controlled and are expected to increase. Hatchery production, involving hatchery breeding of adults in captivity, has been achieved in several countries but commercial application of hatchery produced fish is hampered by low survivorship of larvae and slow growth rates which adds additional incentive to perform juvenile capture and grow-out activities. Moreover, capture-based culturing and wild-capture are economic activities that would continue despite hatchery-production in the absence of management controls. Additionally, there is higher consumer demand for wild caught fish (Hau and Sadovy de Mitcheson 2023) which adds yet another layer of incentivization for grow-out operations or direct wild capture. Juveniles are the preferred size range for retailers of live Humphead Wrasse, being good for serving on a large plate and also considered to be more tasty than larger fish (and hence more profitable to traders) (Kindsvater *et al.* 2017). This species is also captured indiscriminately in multi-gear small scale fisheries typical of developing countries in the Indian Ocean (e.g., Samoilys *et al.* 2017, 2018), except in well-enforced marine parks, yet the latter appear ineffective in maintaining populations (Samoilys 2024).

Threats (see Appendix for additional information)

This species is clearly conservation-dependent (Gillett 2010) and, while there are numerous threats to its persistence in the wild, the synergistic nature of intrinsic and extrinsic factors result in exploitation

being its primary threat. Intrinsic factors such as naturally low densities and population size, longevity, hermaphroditic reproductive strategy, and night-time dormancy enhance the species' vulnerability to exploitation. Extrinsic factors such as a lack of appropriate and enforced management actions (including Illegal, Unreported, and Unregulated [IUU] fishing) and unchecked harvest of juveniles for grow-out operations result in unsustainable fishing operations, while habitat loss is likely decreasing the ability of populations to recover even in areas where the species has enforced protection because of its close association with coral reef habitat, which is impacted by degradation processes related to climate change.

The susceptibility to overfishing is enhanced by several factors such as: (1) the bulk of the fishery for live fish export (the major trade in the species) is located in the southwest Philippines and Indonesia, two large areas where the species is not adequately managed for sustainability and that make up a large portion of the species' range and global population; (2) much of the export fishery is selective for juvenile, "plate-sized" fish as these are the preferred size by consumers and gain high prices (the species is one of the two top-priced species in the live fish trade), making them highly profitable for traders; (3) uncontrolled and heavy fishing for juvenile fish of a range of sizes for grow-out (from just post-settlement to several years of age) has removed hundreds of thousands of individuals from Indonesia (over multiple years) (inferred from Mujiyanto *et al.* 2020, Arieta 2022) despite regulations to help safeguard the species, these are generally not well enforced and pressures for young for grow-out are set to continue or increase; (4) illegal international trade occurs especially on fish carrier vessels which are poorly controlled, e.g., between Indonesia and Hong Kong, Philippines and Malaysia and out of Malaysia and Philippines. Illegal cross-border trade also occurs between the southwest Philippines and Malaysia (Chen and Justin 2009, Poh and Fanning 2012, Wu and Sadovy de Mitcheson 2016, BFAR 2017, Kindsvater *et al.* 2017, Sadovy de Mitcheson *et al.* 2017, Hau and Sadovy de Mitcheson 2023); (5) indiscriminate capture in non-selective gears, notably gill nets, in small scale fisheries in developing countries in the Indian Ocean; (6) susceptibility of sleeping fish in coral crevices to selective spear fishery at night (Sadovy *et al.* 2003); and (7) uncontrolled domestic use remains a threat in some countries.

There is concern that the increased move to juvenile fisheries (taking juveniles of a range of sizes for grow-out in cages) is placing growing pressure on the species and is occurring in areas where few adults are recorded in underwater surveys. The legal trade in capture-based cultured fish was introduced in 2017 in Indonesia, the only legal exporter of the species under CITES, and as of 2024, all export trade is in fish caught for grow-out which have not been assessed (as required under CITES), for a sustainable export quota; grow-out fish are also illegally exported from the Philippines because the non-detriment find (NDF) does not support exports (Hau and Sadovy de Mitcheson 2023).

Conservation Actions (see Appendix for additional information)

The species is conservation-dependent (Gillett 2010). Where it is fished at levels other than very lightly, its abundance [as determined by density/catch per unit effort (CPUE)] and mean sizes decline rapidly. Where heavily fished, mostly juveniles are found, and densities drop to levels 100 x below high natural levels. In countries where it is exploited, abundance and adult numbers remain high in areas where it is not fished (such as marine protected areas), suggesting that MPAs can help conserve the species as long as they are large enough and enforced (Green *et al.* 2014).

Following its listing in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), in 2004, significant progress was made by many countries to reduce

fishing pressure, mainly on adults, either through developing a non-detriment finding (NDF-science-based assessment that verifies whether a proposed export is detrimental to the survival of that species or not; an NDF is required under CITES for exports for any wild-caught fish—this includes wild-caught juveniles used for grow-out (termed 'ranching' under CITES) such as that developed in Indonesia or by banning exports altogether (the policy employed by for many countries). It is very likely that population declines in Indonesia, a major export source, stabilized due to export controls following CITES although recovery is not yet evident (except for its start in one location where the single trader stopped operations; Sadovy de Mitcheson *et al.* 2019). However, Indonesia does not appear to manage catch levels nor account for domestic trade of this species which could be significant.

It is recommended that CITES Parties improve the reporting of marine species trade data for listed species. Improvements in the data reporting process will enhance the accuracy of the data and the level of reporting, which, in turn, will make the data more useful to those advising on the management and sustainability of aquatic species, including this species, for reducing illegal trade and for increasing compliance. More attention is needed to monitor the trade in chilled/frozen fish (i.e., not live), especially through novel trade mechanisms, such as via the internet (Pavitt *et al.* 2021) as well as to assess levels of domestic trade in Indonesia. An NDF for capture-based grow-out operations is needed in Indonesia; the existing stock assessment model could be readily adapted for this purpose (Sadovy *et al.* 2007).

Region-specific conservation measures are presented in the Supplementary Information.

For further information about this species, see [Supplementary Material](#).

Credits

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Reviewer(s): Linardich, C.

Authority/Authorities: IUCN SSC Grouper and Wrasse Specialist Group

Bibliography

- Allen, G.R. and Swainston, R. 1992. *The Marine Fishes of North-western Australia*. Western Australian Museum, Perth. 201 pp.
- Andradi-Brown D.A., Veverka L., Free B., Ralifo A. and Areki F. 2022. Status and trends of coral reefs and associated coastal habitats in Fiji's Great Sea Reef. World Wildlife Fund US, WWF-Pacific Programme, and Ministry of Fisheries Fiji, Washington, D.C. & Suva.
- Arieta, S. 2022. Putting an end to the tragedy of ranching in Napoleon Wrasse fishery in Indonesia: A sociological approach. *International Journal of Social Science* 1(5): 817-828.
- BFAR. 2017. Napoleon Wrasse (*Cheilinus undulatus*) "Mameng" Philippine Status Report and National Plan of Action 2017-2022. Bureau of Fisheries and Aquatic Resources - National Fisheries Research and Development Institute (BFAR), Quezon City, Philippines.
- Chabanet, P., Bigot, L., Nicet, J.-B., Durville, P., Massé, L., Mulochau, T., Russo, C., Tessier, E., Obura, D. 2016. Coral reef monitoring in the Iles Eparses, Mozambique Channel (2011–2013). *Acta Oecologica* 72: 62-71.
- Chateau, O. and Wantiez, L. 2007. Site fidelity and activity patterns of a humphead wrasse, *Cheilinus undulatus* (Labridae), as determined by acoustic telemetry. *Environmental Biology of Fishes* 80: 503–508.
- Chen, J.N.S. and Justin, S.R. 2009. Regulating the Humphead wrasse (*Cheilinus undulatus*) trade in Sabah, Malaysia. *Ambio* 38(2): 123-125.
- Choat, J.H., Davies, C.R., Ackerman, J.L. and Mapstone, B.D. 2006. Age structure and growth in a large teleost, *Cheilinus undulatus*, with a review of size distribution in labrid fishes. *Marine Ecology Progress Series* 318: 237–246.
- Colin, P.L. 2010. Aggregation and spawning of the humphead wrasse *Cheilinus undulatus* (Pisces: Labridae): general aspects of spawning behaviour. *Journal of Fish Biology* 76(4): 987-1007.
- Daly, R., Daly, C.A.K., Gray, A.E., Peel, L.R., Gordon, L., Lea, J.S., Clarke, C.R. and Weng, K.C. 2020. Investigating the efficacy of a proposed marine protected area for the endangered humphead wrasse *Cheilinus undulatus* at a remote island group in Seychelles. *Endangered Species Research* 42: 7-20.
- Depczynski, M. and Bellwood, D.R. 2006. Extremes, plasticity, and invariance in vertebrate life history traits: insights from coral reef fishes. *Ecology* 87: 3119-3127.
- Domeier, M.J. and Colin, P.L. 1997. Tropical reef fish spawning aggregations: defined and reviewed. *Bulletin of Marine Science* 60: 698-726.
- Donaldson, T.J. 1995. Courtship and spawning of nine species of wrasses (Labridae) from the western Pacific. *Japanese Journal of Ichthyology* 42: 311-319.
- Friedlander, A.M., Bukurrou, A., Filous, A., Muller Karanassos, C., Koike, H., Koshiba, S., Mereb, G., Nestor, V., Oleson, K.L., Olsudong, D. and Oruetamor, J. 2023. Assessing and managing charismatic marine megafauna in Palau: Bumphead parrotfish (*Bolbometopon muricatum*) and Napoleon wrasse (*Cheilinus undulatus*). *Aquatic Conservation: Marine and Freshwater Ecosystems* 33(4): 349-365.
- Gillett, R. 2010. Monitoring and management of the humphead wrasse, *Cheilinus undulatus*. FAO Fisheries and Aquaculture Circular. No. 1048. Food and Agriculture Organization of the United Nations, Rome, Italy.

Graham, K.S., Boggs, C.H., DeMartini, E.E., Schroeder, R.E. and Trianni, M.S. 2015. Status review report: humphead wrasse (*Cheilinus undulatus*). U.S. Dep. Commer., NOAA Tech. Memo. National Oceanic and Atmospheric Administration, Honolulu, Hawaii.

Green, A.L., Fernandes, L., Almany, G., Abesamis, R., McLeod, E., Aliño, P.M., White, A.T., Salm, R., Tanzer, J. and Pressey, R.L. 2014. Designing marine reserves for fisheries management, biodiversity conservation, and climate change adaptation. *Coastal Management* 42(2): 143-159.

Hamilton, R.J., Hughes, A., Brown, C.J., Leve, T. and Kama, W. 2019. Community-based management fails to halt declines of bumphead parrotfish and humphead wrasse in Roviana Lagoon, Solomon Islands. *Coral Reefs* 38(2): 455-465 DOI: 10.1007/s00338-019-01801-z.

Hau, C.Y. and Sadovy de Mitcheson, Y. 2023. Mortality and management matter: Case study on use and misuse of ‘ranching’ for a CITES Appendix II-listed fish, humphead wrasse (*Cheilinus undulatus*). *Marine Policy* 149: 105515.

IUCN. 2025. The IUCN Red List of Threatened Species. Version 2025-2. Available at: www.iucnredlist.org. (Accessed: 10 October 2025).

Kindsvater, H.K., Reynolds, J.D., Sadovy de Mitcheson, Y. and Mangel, M. 2017. Selectivity matters: Rules of thumb for management of plate-sized, sex-changing fish in the live reef food fish trade. *Fish and Fisheries* 18(5): 821-836.

Lavides, M.N., Molina, E.P.V., Gregorio Jr, E., Mill, A.C., Rushton, S.P., Stead, S.M. and Polunin, N.V. 2016. Patterns of Coral-Reef Finfish Species Disappearances Inferred from Fishers’ Knowledge in Global Epicentre of Marine Shorefish Diversity. *PLoS One* 11(5): p.e0155752.

Lindfield, S.J., McIlwain, J.L. and Harvey, E.S. 2014. Depth refuge and the impacts of SCUBA spearfishing on coral reef fishes. *PLoS ONE* 9(3): e92628.

Ma, K.Y., Colin, P.L., Sadovy de Mitcheson, Y. and Dawson, M.N. 2019. Phylogeography and conservation biogeography of the humphead wrasse, *Cheilinus undulatus*. *Frontiers of Biogeography* 11(2): e42697. DOI: 10.21425/F5FBG42697.

Mujiyanto, M., Sugianti, Y., Garcia, M.G. and Edrus, I.N. 2020. Institutional restructuring of fisheries management system for humphead wrasse (*Cheilinus undulatus* RÜPPELL 1835) in Anambas and Natuna, Riau Archipelago Province, Indonesia. *IOP Conference Series: Earth and Environmental Science* 584: 012003.

Myers, R.F. 1999. *Micronesian reef fishes: a comprehensive guide to the coral reef fishes of Micronesia*. Coral Graphics, Barrigada, Guam.

Nair, R.J. 2004. Note on a rare coral fish *Cheilinus undulatus* (Rüppell, 1835). *Journal of the Marine Biological Association of India* 46(2): 234-236.

Nair, R.J., Kuriakose, S. and Dinesh, K.S. 2010. Occurrence of a rare coral fish *Cheilinus undulatus*. *CMFRI Newsletter Cadalmin* 127: 9.

Nañola, C.L., Paradela, M.A.C., Songco, A.M., Pagliawan, M.R.C., Alarcon, R.C. and Santos, M.D. 2021. First report on the density and size frequency distribution of the Napoleon Wrasse, *Cheilinus undulatus* in the Tubbataha Reefs Natural Park, Philippines. *Philippine Journal of Science* 150: 209-221.

Pavitt, A., Malsch, K., King, E., Chevalier, A., Kachelriess, D., Vannuccini, S. and Friedman, K. 2021. *CITES and the sea: Trade in commercially exploited CITES-listed marine species*. FAO.

Poh, T.M. and Fanning, L.M. 2012. Tackling illegal, unregulated, and unreported trade towards Humphead wrasse (*Cheilinus undulatus*) recovery in Sabah, Malaysia. *Marine Policy* 36(3): 696-702.

- Randall, J.E. 1955. Fishes of the Gilbert Islands. *Atoll Research Bulletin* 47: 1-243.
- Randall, J.E., Allen, G.R. and Steene, R.C. 1997. *Fishes of the Great Barrier Reef and Coral Sea*. University of Hawaii Press, Crawford House Publishing Pty Ltd., Honolulu, Hawaii and Bathurst, NSW, Australia.
- Randall, J.E., Head, S.M. and Sanders, A.P.L. 1978. Food habits of the giant humphead wrasse *Cheilinus undulatus* (Labridae). *Environmental Biology of Fishes* 3: 235-238.
- Rhodes, K.L., Hernandez-Ortiz, D.X., Cuertos-Bueno, J., Ioanis, M., Washington, W. and Ladore, R. 2018. A 10-year comparison of the Pohnpei, Micronesia, commercial inshore fishery reveals an increasingly unsustainable fishery. *Fisheries Research* 204: 156-164.
- Roe, P., Hashim, A.S., Evans, V. and de Mitcheson, Y.S. 2022. Status of Napoleon wrasse in Laamu Atoll, Maldives, after three decades of protection. *Endangered Species Research* 49: 135-144.
- Romero, F.G. and Injani, A.S. 2015. Assessment of Humphead Wrasse (*Cheilinus undulatus*), Spawning Aggregations and Declaration of Marine Protected Area as Strategy for Enhancement of Wild Stocks. International Workshop on Resource Enhancement and Sustainable Aquaculture Practices in Southeast Asia.
- Sadovy de Mitcheson, Y. and Batibasaga A. 2017. 79 Fiji Fisher interviews on fishes that aggregate to spawn; original data and summaries 2003-2005. Science and Conservation of Fish Aggregations and Fiji Ministry of Fisheries and Forests, Research Division. Unpublished compilation report.
- Sadovy de Mitcheson, Y., Liu, M. and Suharti, S. 2010. Gonadal development in a giant threatened reef fish, the humphead wrasse *Cheilinus undulatus*, and its relationship to international trade. *Journal of Fish Biology* 77: 706–718.
- Sadovy de Mitcheson, Y., Suharti, S. and Colin, P.L. 2019. Quantifying the rare: Baselines for the endangered Napoleon Wrasse, *Cheilinus undulatus*, and implications for conservation. *Aquatic Conservation of Marine and Freshwater Ecosystems*: 1–17. DOI: 10.1002/aqc.3124.
- Sadovy de Mitcheson, Y., Tam, I., Muldoon, G., le Clue, S., Botsford, E. and Shea, S. 2017. The trade in live reef food fish – going, going, gone. ADM Capital Foundation Report. Part I Swimming Against the Tide and Part II Slipping through the Net, Policy and Regulations in Hong Kong. Hong Kong Special Administrative Region.
- Sadovy, Y., Kulbicki, M., Labrosse, P., Letourneur, Y., Lokani, P. and Donaldson, T.J. 2003. The humphead wrasse, *Cheilinus undulatus*: synopsis of a threatened and poorly known giant coral reef fish. *Reviews in Fish Biology and Fisheries* 13(3): 327–364.
- Sadovy, Y., Punt, A.E., Cheung, W., Vasconcellos, M. and Suharti, S. 2007. Stock Assessment Approach for the Napoleon fish, *Cheilinus undulatus*, in Indonesia: a tool for quota-setting for data-poor fisheries under CITES Appendix II Non-Detriment Finding requirements. FAO Fisheries Circular. No. 1023. Rome.
- Samoilys, M.A., Osuka, K., Maina, G.W. and Obura, D.O. 2017. Artisanal fisheries on Kenya’s coral reefs: Decadal trends reveal management needs. *Fisheries Research* 186: 177-191.
- Samoilys, M. A., Osuka, K., Mussa, J., Rosendo, S., Riddell, M., Diade, M., Mbugua, J., Kawaka, J., Hill, N. and Koldewey, H. 2019. An integrated assessment of coastal fisheries in Mozambique for conservation planning. *Ocean & Coastal Management* 182: 104924. DOI: 10.1016/j.ocecoaman.2019.104924.
- Samoilys, M., Osuka, K.E., Roche, R., Koldewey, H. and Chabanet, P. 2024. Effects of protection on large-bodied reef fishes in the western Indian Ocean. *Conservation Biology*: DOI: 10.1111/cobi.14430.
- Sluka, R.D. 2000a. Grouper and Napoleon wrasse ecology in Laamu atoll, Republic of Maldives: Part 1. Habitat, behaviour, and movement patterns. *Atoll Research Bulletin* 491: 1-26. DOI:

10.5479/si.00775630.491.1.

Sluka, R.D. 2000b. Grouper and Napoleon wrasse ecology in Laamu atoll, Republic of Maldives: Part 2. timing, location, and characteristics of spawning aggregations. *Atoll Research Bulletin* 492: 1-15. DOI: 10.5479/si.00775630.492.1.

Sluka, R.D. and Lazarus, S. 2005. Humphead wrasse (*Cheilinus undulatus*) rare on the west coast of India. *JMBA-Journal of the Marine Biological Association of the United Kingdom* 85(5): 1293-1294.

Tupper, M. 2007. Identification of nursery habitats for commercially valuable humphead wrasse *Cheilinus undulatus* and large groupers (Pisces: Serranidae) in Palau. *Marine Ecology Progress Series* 332: 189-199.

Vivien, M.L. 1973. Contribution a la connaissance de l'ethologie alimentaire de l'ichthyofaune du platier interne des recifs corallines de Tulear (Madagascar). *Tethys, Supplement* 5: 221-308.

Weng, K.C., Pedersen, M.W., Del Raye, G.A., Caselle, J.E. and Gray, A.E. 2015. Umbrella species in marine systems: using the endangered humphead wrasse to conserve coral reefs. *Endangered Species Research* 27(3): 251-263.

Widiarto, S.B.S., Sos, M.P., Hendrik Sombo, S.Pi.M.Si, Prehadi, S.I.K., Oktofianus, O. and Rawayai, S.I.K. 2023. Lembar Persetujuan Laporan Kegiatan Survei Monitoring Populasi Ikan Napoleon (*Cheilinus undulatus*) di perairan Misool-Kabupaten Raja Ampat Tahun 2023.

Winterbottom, R., Emery, A.R. and Holm, E. 1989. *An annotated checklist of the fishes of the Chagos Archipelago, Central Indian Ocean*. Royal Ontario Museum, Toronto, Canada.

Wu, J. and Sadovy de Mitcheson, Y. 2016. Humphead (Napoleon) Wrasse *Cheilinus undulatus* trade into and through Hong Kong. TRAFFIC, Hong Kong.

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External Resources

For [Supplementary Material](#), and for [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

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

Habitat	Season	Suitability	Major Importance?
9. Marine Neritic -> 9.4. Marine Neritic - Subtidal Sandy	Resident	Suitable	Yes
9. Marine Neritic -> 9.8. Marine Neritic - Coral Reef	Resident	Suitable	Yes
9. Marine Neritic -> 9.9. Marine Neritic - Seagrass (Submerged)	Resident	Suitable	Yes
12. Marine Intertidal -> 12.7. Marine Intertidal - Mangrove Submerged Roots	Resident	Suitable	Yes

Use and Trade

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

End Use	Local	National	International
1. Food - human	Yes	Yes	Yes

Threats

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

Threat	Timing	Scope	Severity
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale) [harvest]	Ongoing	Majority (50-90%)	Slow, significant declines
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	Majority (50-90%)	Slow, significant declines
Stresses: 2. Species Stresses -> 2.1. Species mortality			
11. Climate change & severe weather -> 11.3. Temperature extremes	Ongoing	Unknown	Unknown
Stresses: 1. Ecosystem stresses -> 1.2. Ecosystem degradation			

Conservation Actions in Place

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

Conservation Action in Place
In-place land/water protection
Occurs in at least one protected area: Yes

Conservation Action in Place
In-place species management
Harvest management plan: Yes
In-place education
Included in international legislation: Yes
Subject to any international management / trade controls: Yes

Conservation Actions Needed

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

Conservation Action Needed	Notes
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management	-

Research Needed

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

Research Needed	Notes
1. Research -> 1.2. Population size, distribution & trends	-

Additional Data Fields

Distribution
Lower depth limit (m): 100
Upper depth limit (m): 2
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 20

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](#).

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