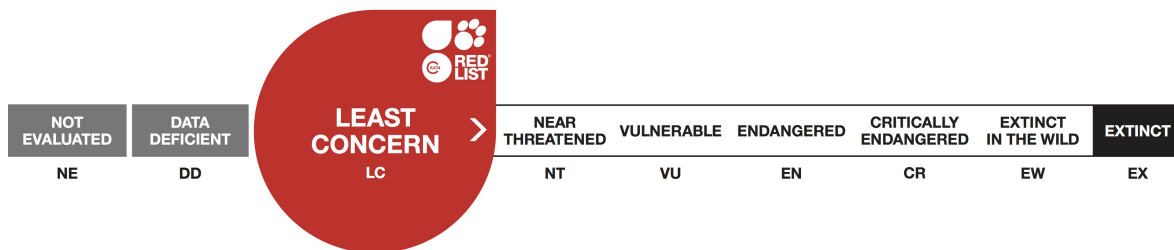


## *Variola louti*, Yellow-edged Lyretail

Assessment by: Nair, R., Samoily, M. & Cabanban, A.S.



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## Taxonomy

| Kingdom  | Phylum   | Class          | Order       | Family        |
|----------|----------|----------------|-------------|---------------|
| Animalia | Chordata | Actinopterygii | Perciformes | Epinephelidae |

**Taxon Name:** *Variola louti* (Forsskål, 1775)

### Synonym(s):

- *Epinephelus louti* (Forsskål, 1775)
- *Labrus punctulatus* Lacepede, 1801
- *Perca louti* Forsskål, 1775
- *Serranus cernipedis* Miranda Ribeiro, 1913
- *Serranus flavimarginatus* Ruppell, 1830
- *Serranus longipinna* Swainson, 1839
- *Serranus louti* (Forsskål, 1775)
- *Serranus luti* Valenciennes, 1828
- *Serranus melanotaenia* (Bleeker, 1857)
- *Serranus phaenistomus* Swainson, 1839
- *Serranus punctulatus* (Lacepede, 1801)
- *Serranus roseus* Valenciennes, 1828
- *Variola longipinna* Swainson, 1839
- *Variola louti* (Forsskål, 1775)
- *Variola melanotaenia* Bleeker, 1857

### Common Name(s):

- English: Yellow-edged Lyretail, Common Lyre-tail Cod, Coronation Trout, Lunar-tail Cod, Lunartailed Cod, Lunar-tailed Coral-trout, Lunar-tailed Rock-cod, Lyre Tail Coral Trout, Lyretail Grouper
- French: Criossant Queue Jaune, Druide, Grand Queue, Loche Cameleon, Rouge Grand Queue, Saumonee Hirondelle, Vielle Peinte Des Coraux, Vroissant
- Spanish: Mero Luna Creciente

## Assessment Information

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

**Year Published:** 2018

**Date Assessed:** November 22, 2016

### Justification:

*Variola louti* is a widely distributed, reef-associated species that is common and abundant in parts of its range. There are emerging fisheries that target this species in some areas. There is some evidence for localized population declines in the Maldives and Mariana Islands due to overfishing, but this is not considered a major threat on a global-level at this time. Therefore, it is listed as Least Concern. Actions that reduce fishing effort and monitor populations are recommended and research on its life history is needed.

### Previously Published Red List Assessments

2008 – Least Concern (LC)

<http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T132738A3437243.en>

## Geographic Range

### Range Description:

This species is distributed in the tropical Indo-West Pacific from Durban, South Africa north to the Red Sea, the southwest Indian coast, southern Japan through the Coral Sea and east to the Pitcairn Islands, including southern Japan to Australia (Western Australia from Shark Bay to Karratha and from Carter Reef in Queensland south to Sydney, New South Wales) and most of the tropical islands of the Indian and west central Pacific oceans. It does not occur in the Persian Gulf or the Hawaiian Islands. Its depth range is three to 240 metres.

Specific localities include the following: Red Sea, Gulf of Aqaba, Gulf of Aden, south Oman, Socotra (Yemen), east Somalia, East Africa to 28°S, Comoros, Madagascar, Seychelles, Aldabra, Réunion, Mauritius, Rodrigues, Chagos, Maldives, Laccadives, Sri Lanka, Andamans, west Thailand, Myanmar, Sumatra, Bali, Sangakkaki, Borneo, east Indonesia, Minado, Togeian Islands, Sulawesi, Flores, Komodo Sunda Island, Raja Ampat, West Papua, Cocos-Keeling Islands, Christmas Island, Asmore, Scott Reef, Rowley Shoals, NW Australian coast, Philippines, Spratly Island, Great Barrier Reef, Solomon Islands, Vanuatu, New Caledonia, Chesterfields, Elizabeth and Middleton Reefs, Lord Howe Island, south Taiwan, Peng hu shan, Ryukyu, Kawhisi-jima, south Japan, Izu Is, Ogosawara, Palau, Yap, Pohnpei, Ifalik, Chuuk, Kapingamarangi, Kosrae, Marianas, Marshall Islands, Wake Island, Fiji, Rotuma, Tonga, Uvea, Samoa, Tuvalu, Phoenix, Line Island, Society Islands, Tuamotos, Gambier, Marquesas, Austral Island, Rapa, and Pitcairn (R. Myers distributional database 2006).

### Country Occurrence:

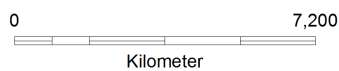
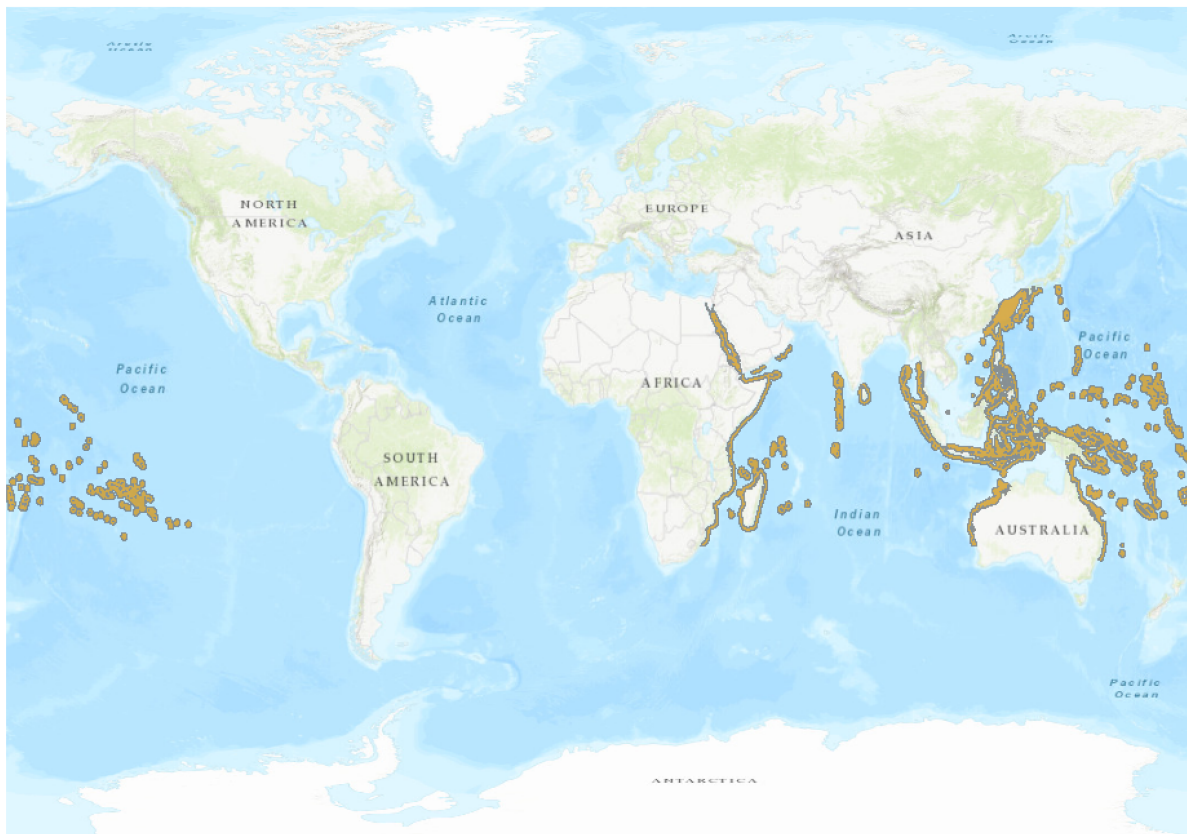
**Native:** American Samoa; Australia; British Indian Ocean Territory (Chagos Archipelago); Brunei Darussalam; China; Christmas Island; Cocos (Keeling) Islands; Comoros; Cook Islands; Disputed Territory (Paracel Is., Spratly Is.); Djibouti; Egypt; Eritrea; Fiji; French Polynesia; French Southern Territories (Mozambique Channel Is.); Guam; India; Indonesia; Israel; Japan; Jordan; Kenya; Kiribati; Korea, Republic of; Madagascar; Malaysia; Maldives; Marshall Islands; Mauritius; Mayotte; Micronesia, Federated States of; Mozambique; Myanmar; Nauru; New Caledonia; Niue; Northern Mariana Islands; Oman; Palau; Papua New Guinea; Philippines; Pitcairn; Réunion; Samoa; Saudi Arabia; Seychelles; Solomon Islands; Somalia; South Africa; Sri Lanka; Sudan; Taiwan, Province of China; Tanzania, United Republic of; Thailand; Timor-Leste; Tokelau; Tonga; Tuvalu; United States Minor Outlying Islands (Howland-Baker Is., US Line Is., Wake Is.); Vanuatu; Viet Nam; Wallis and Futuna; Yemen

### FAO Marine Fishing Areas:

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

# Distribution Map

*Variola louti*



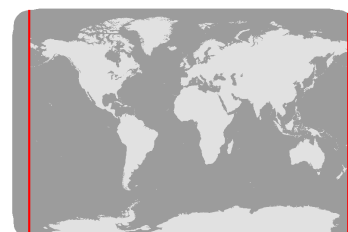
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

## 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 is common and abundant in the Western Indian Ocean, but has lower densities in the far eastern parts of its range in the Western Pacific. Grandcourt (2005) suggests this is a fast-growing species with a relatively high turnover rate that may be able to recover from moderate fishing pressure (Pears 2005).

**Western Indian Ocean:** In the Western Indian Ocean, this species contributes to both local commercial (Grandcourt 2005) and the Live Reef Food Fish Trade (LRFT). It is apparently naturally uncommon in some parts; underwater surveys conducted from 2010 to 2015 at 52 sites across Tanzania, Mozambique and Djibouti reported only a single sighting of this species. Biomass in Comoros in 2010 during five transects was 440 g/250 m<sup>2</sup>; *Variola louti* was absent in Djibouti (M. Samoilys unpublished data). Commercial landings of *Variola louti* in India increased from 2010 to 2015, but comprised only a small portion of landings previous to that time period (CMFRI Annual report 2014/2015). Landings along the Kerala coast of India have increased from 0.8% of the total grouper catch in 2004 to 6% in 2015 (Nair et al. 2016). In Kochi, India in 2011/2012, it comprised 0.8 % of the grouper catches (2,875 tons). **Maldives:** In the Maldives, *V. louti* is the most frequently captured grouper along atoll rims and is naturally common and abundant there (Sattar and Adams 2005, Fishwatch surveys Darwin Reef Project 2011). It is one of the more valued species in the LRFT in the Maldives (Sattar and Adams 2005). Catch of this species in the Maldivian grouper fishery was comprised of individuals that were just slightly over age at first sexual maturity and that the mean length of individuals declined by 22% from 1990 to 2004 and weight by 77% (Sattar and Adams 2005). By 2010/2011, 89% of captured individuals of this species were immature and mean length at capture has declined since the study by Sattar and Adams (2005), which is typically indicative of overfishing (Darwin Reef Report 2011). Evidence of declines in the Maldives associated with the LRFT also suggests that this species is overexploited.

**Western Pacific:** This species was one of the lesser abundant serranids observed during underwater surveys conducted between zero to five metres depth on the Great Barrier Reef, and was marginally more abundant in the north (Pears 2005). In Buton, Indonesia, underwater surveys covering an area of 2,450 m<sup>2</sup> in 2006 and 4550 m<sup>2</sup> from 2007 to 2013 recorded 4.3 and 8.16 individuals of this species per hectare, respectively. In Kalmas, Indonesia, underwater surveys conducted in 2011 reported an increase in the density of this species to 10.2 fish per hectare (S. Suharti pers. comm. 2016). In western Indonesia, underwater surveys conducted from 2004 to 2007 recorded 4.7 to 10 individuals per hectare (M. Kayan pers. comm. 2016). It has been fished intensively in the northern Mariana Islands for at least 25 years; landings averaged six to eight metric tonnes in the 1960s and declined by 15 to 20% in the 1990s through 2000 (Zeller 2006). The Samoan fishery for this species is more recent, and catch trends have fluctuated, but have declined overall. The fishery in Guam is erratic and relatively small, and no trends are identified. The combination of relatively low densities and declining catch rates may indicate that this species is overfished in these areas of the West Pacific; however, the magnitude of the decline in landings, effort and time period is unknown (Zeller 2006).

**Current Population Trend:** Stable

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

This species typically occurs in clear-water, coral reef habitats deeper than 15 metres, but also to 250 metres. It prefers islands and offshore reefs, rather than continental shorelines. It can also inhabit

exposed reefs (Pears 2005) and reef crest and outer slope habitats (Campbell *et al.* 2008). It feeds primarily on fishes, crabs, shrimps and stomatopods. Its maximum total length is 100 cm and weight is 12 kg (Postel *et al.* 1963, van der Elst 1981).

Females reach maturity at 33 cm standard length (Morgans 1982). Spawning aggregations have been observed in Aceh, Sumatra. It has not yet been confirmed that this species is a protogynous hermaphrodite. Of individuals sampled from Aldabra Atoll in the Western Indian Ocean, the maximum age was 15 years at a fork length of 60 cm.) In Australia's Great Barrier Reef, a maximum age of seven years and no more than 10 years and L inf of 47.7 cm has been reported (Maplestone *et al.* 2009, Currey *et al.* 2010).

**Systems:** Marine

## Use and Trade

This species has a relatively high export value in Maldivian fisheries (Sattar and Adams 2005). In India, it is sold locally as well as exported (Rekha pers. comm. 2016). This species is also present in the aquarium trade and live fish food trade. There is evidence this species can have ciguatera toxins in the Western Indian Ocean (Opic *et al.* 1994), Japanese waters (Oshiro *et al.* 2010) and the coastal countries of East Asia and Southeast Asia (Chan 2015), which may make it less desired by fishers due to danger from poisoning.

## Threats (see Appendix for additional information)

Declines in this species have been observed in areas where it is frequently directly targeted by grouper fisheries, such as in the Maldives and Mariana Islands; however, this is not considered a major threat on a global-level at this time.

## Conservation Actions (see Appendix for additional information)

There are no species-specific conservation measures, including in areas where it is targeted by fishers. It occurs in several marine protected areas throughout its range. Action is needed to reduce fishing effort and monitor populations, especially where fishing pressure is currently increasing as well as in areas where overfishing is likely occurring (e.g., the Maldives). In addition, further research on its life history is needed.

## Credits

**Assessor(s):** Nair, R., Samoilys, M. & Cabanban, A.S.

**Reviewer(s):** Linardich, C.

**Facilitators(s) and  
Compiler(s):** Craig, M.T.

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## External Resources

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

## 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   | Minority (50%)                                | 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 |          |              |



## Appendix

### Conservation Actions in Place

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

|   |
|---|
| <b>Conservation Actions in Place</b>          |
| In-Place Land/Water Protection and Management |
| Occur in at least one PA: Yes                 |

### Conservation Actions Needed

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

|   |
|---|
| <b>Conservation Actions Needed</b>  |
| 3. Species management -> 3.1. Species management -> 3.1.1. Harvest management |

### Research Needed

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

|  |
|--|
| <b>Research Needed</b>                                     |
| 1. Research -> 1.2. Population size, distribution & trends |
| 1. Research -> 1.3. Life history & ecology                 |

### Additional Data Fields

|                                    |
|------------------------------------|
| <b>Distribution</b>                |
| Lower depth limit (m): 240         |
| Upper depth limit (m): 3           |
| <b>Population</b>                  |
| Population severely fragmented: No |

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