

Inclusion of Clarion Angelfish *Holacanthus clarionensis* in Appendix II

Proponent: Mexico

Summary: The Clarion Angelfish *Holacanthus clarionensis* occurs in the Pacific territorial waters of Mexico, in the Revillagigedo Archipelago and off Baja California Sur, and Clipperton Island (France). It is demersal and is found associated with coral reefs and rocky areas, including drop-offs, to a depth of 30m. It is commonest at around three to five metres depth, particularly around the cleaning stations of mantas (*Manta birostris*). Maturity is believed to be reached at between 18 and 30 months and life expectancy to be around 10 years. Observed population densities at sites vary seasonally, which may be associated with spawning migrations. A low frequency of juveniles in reef populations indicates that recruitment may take place elsewhere, in shallower or deeper waters.

The maximum potential area of occupancy for this species is probably ca. 4000km²¹; the amount of suitable reef within this is smaller, so that actual area of occupancy is probably considerably less than 2000km². The majority of the population reportedly occurs within less than 50km² in the Revillagigedo Archipelago, where average population density has been estimated at around one individual per 200m² in suitable habitat, compared with fewer than one per hectare (10,000m²) found in surveys off Baja California Sur. The population at Revillagigedo has been reported as apparently stable². Report of a decline in the late 2000s at Cabo Pulmo, Baja California, where the species is generally extremely scarce, is not considered reliable³. In 1997 it was reported as rare at Clipperton Island⁴.

Loss of habitat, and particularly damage to coral reefs, may affect the species, although its range in the Revillagigedo Islands is within a protected area. There is speculation that an increase in duration and frequency of El Niño–Southern Oscillation (ENSO) events associated with climate change might have an impact on the species².

Clarion Angelfish are very brightly coloured and have appeal in the ornamental fish trade. However, they are aggressive fish which are not suitable for community reef tanks; demand for them has therefore always been limited⁵. They do, however, command high prices in trade.

Domestic trade in Mexico is regarded as negligible. The majority of exports reportedly go to California, USA, although exports to Japan are also known⁵. Data on exports of live specimens from Mexico are variable, but no more than a few hundred per year (generally 200 to 600 based on the statistics available) enter the market. Between 2007 and 2013, Mexico gave permits for the collection of just over 3000 specimens and reportedly around 2750 individuals were exported although it has not been possible to confirm this. Trade data for the period 2006 to 2013 report only 625 Clarion Angelfish in total were imported into the USA from Mexico⁶. There is no information on mortality of individuals between capture and export.

Historically, there is a report from the early 1990s that over 1000 specimens were being collected at the Revillagigedo Archipelago on individual fishing trips, and that this was leading to significant depletion of the population, but no further information is available.

In Mexico, the species is considered subject to special protection, meaning that harvesting should only be undertaken if it is sustainable. Capture under permit is allowed in only three zones in the Gulf of California; in other parts of its range, including the Revillagigedo Archipelago, harvest is not permitted. It has been speculated that specimens taken under licence may in fact originate in the Revillagigedo Archipelago, although evidence is lacking.

The species was classified as Vulnerable by IUCN in 2010.

The species is bred at a commercial aquarium exporting facility in Bali, Indonesia; exports at a low level are known to take place from here to the United Kingdom and USA.

Analysis: The Clarion Angelfish is collected for export for the international marine aquarium fish trade and has a relatively limited range and population for a marine fish. Harvest for export from the main range State (Mexico) is limited and controlled by licence. The major part of the population occurs in a protected area where collection is not allowed, and is believed to be stable, although it may be vulnerable in the long term to pressures related to climate change. The species does not appear to meet the criteria for inclusion in Appendix II.

Reviewers: K. Carpenter and E. Wood.

References:

Information not referenced in the Summary section are from the Supporting Statement.

¹ Wells, S. (2016) *In litt.* to IUCN/TRAFFIC Analyses Team, Cambridge, UK.

² Pyle, R., Myers, R., Rocha, L.A. & Robertson, R. (2010) *Holacanthus clarionensis*. The IUCN Red List of Threatened Species 2010.

³ Wood, E. (2016) *In litt.* to IUCN/TRAFFIC Analyses Team, Cambridge, UK.

⁴ Allen, G.R. and Robertson, D.R. (1997) An annotated checklist of the fishes of Clipperton Atoll, tropical eastern Pacific. *Revista de Biología Tropical* 45: 813-843.

⁵ Jones, R. (2016) *In litt.* to IUCN/TRAFFIC Analyses Team, Cambridge, UK.

⁶ Analysis of US Fish & Wildlife Service Law Enforcement Management Information System (LEMIS) data, May 2016.