

Humphead wrasse listed on CITES

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The humphead wrasse, *Cheilinus undulatus* (Fig. 1), was listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) at the October 2004 Convention of the Parties 13 in Bangkok. The listing is to be implemented within 90 days of the CITES meeting (i.e. by mid-January, 2005) and, while still allowing local capture and international trade, is intended to ensure that the species is fished sustainably. Because CITES is a powerful and binding international convention for signatory "Parties", source countries for the humphead wrasse must introduce or enforce existing management measures for the species, or otherwise ensure its sustainable use. In the long term, the CITES listing should not only benefit this species, but will hopefully also focus much-needed attention on the difficulties of achieving sustainable use of biologically vulnerable, but commercially valuable, reef fish, particularly those under pressure from growing export markets.

Appendix II is relevant to species that are "not necessarily now threatened with extinction but that may become so unless trade is closely controlled". The biology of the humphead wrasse (also known in English as the Napoleon wrasse or Maori wrasse) and the manner in which it is often fished make it particularly susceptible to uncontrolled exploitation. The species is large and lives a long time, characteristics in marine fishes that typically mean that they are not particularly productive. Adults (i.e. typically those larger than about 40–50 cm in length) are nowhere common, and

tend to occur mainly in limited outer reef habitats where they spawn (reproduce) in small aggregations. Smaller humphead wrasses (i.e. juveniles), on the other hand, are heavily targeted for the international live reef food fish trade. These "plate-sized" fish are exported directly after capture or put in floating cages in the sea for several months to "grow-out" to preferred market sizes.

The humphead wrasse is a highly favoured fish, both for traditional use in the western Pacific and, increasingly within the last decade, as part of the live reef food fish trade in which it gains high retail prices in restaurants and yields a good profit margin. Because it is readily taken by cyanide, or at night in its resting places, it is easy to catch. Imports are centred in Hong Kong, although much of the volume now passes into mainland China. Demand for live fish in this luxury international trade is predicted to grow due to increasing wealth within the region.

Although well suited for an Appendix II CITES listing, there are some substantial challenges ahead in working towards recovery of this species. On the export side, source countries will have to find the means to assess exploited populations and exports of fish. Although, in principle, pressure on wild fish could be reduced by sustainably practiced mariculture, it is likely to be many years before hatchery production of this species can hope to supply a significant proportion of exports; it is even possible that hatchery production may never be viable economically enough to take pres-

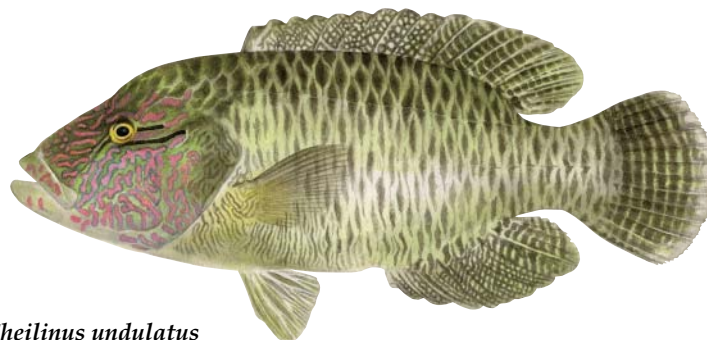


Figure 1.
The humphead wrasse, *Cheilinus undulatus*
Image: Les Hata. © SPC

sure off wild populations. Finally, although Hong Kong is the major importer of this species and has a good CITES record, the very real difficulties of monitoring imports by sea will have to be addressed. All of these challenges will need action from governments, but tertiary institutions and non-governmental organisations could provide substantial support by helping to tackle some of the issues.

For more information on this species see: Sadovy et al. 2003; www.scrfa.org; and www.humpheadwrasse.info.

Important details of an Appendix II listing in relation to its international trade have been extracted from the CITES website (www.CITES.org) and include:

- The export of any specimen of a species included in Appendix II shall require the prior grant and presentation of an export permit. An export permit shall only be granted when the following conditions have been met: (a) Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species; (b) Management

Authority of the State of export is satisfied that the specimen was not obtained in contravention of the laws of that State for the protection of fauna and flora; and (c) Management Authority of the State of export is satisfied that any living specimen will be so prepared and shipped as to minimize the risk of injury, damage to health or cruel treatment.

- International trade in specimens of Appendix-II species may be authorized by the granting of an export permit or re-export certificate; no import permit is necessary (*but imports must be accompanied by export/re-export documentation*). Permits or certificates should only be granted if the relevant authorities are satisfied that certain conditions are met, above all that trade will not be detrimental to the survival of the species in the wild.

Reference

- 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.



First successful hatchery production of Napoleon wrasse at Gondol Research Institute for Mariculture, Bali

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The Napoleon, or humphead, wrasse (*Cheilinus undulatus*) is one of the most expensive live reef food fish in Asian markets, especially Hong Kong, Singapore and China. Because this species is being overfished, many countries in the Asia-Pacific region have regulated its capture and export. Consequently, there is considerable interest in the potential for culturing Napoleon wrasse to supply these high-value markets. The Research Institute for Mariculture (RIM) at Gondol, Bali, Indonesia, initiated research on hatchery production technology for Napoleon wrasse in 1997. Captive broodfish began spawning in 1998, and numerous attempts were made to rear the larvae. After many years of research on gonadal development, spawning and larval rearing, RIM researchers finally produced 120 juvenile Napoleon wrasse in 2003. This is the first reported hatchery production of this species.

Rearing Napoleon larvae is difficult compared to other marine finfish such as snappers and groupers. The difficulty is related to the small size of the newly hatched larvae and their small mouth gape. Egg diameter is only 620–670 micrometers (μm), the total length of newly hatched larvae is 1.5–1.7 millimeters (mm), and mouth gape at initial feeding is only 133 μm .

RIM researchers attribute the successful larval rearing to the provision of high quality feed to broodstock, resulting in good quality eggs. In addition, researchers were able to provide good quality and appropriately sized live food (40–80 μm) to the larvae during the initial feeding period before the yolk and oil globule were exhausted.

RIM researchers note that the growth of Napoleon wrasse is extremely slow; at around six months of

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