Approved Conservation Advice for *Stiphodon semoni* (Opal Cling Goby)

(s266B of the *Environment Protection and Biodiversity Conservation Act 1999)*

This Conservation Advice has been developed based on the best information available at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this species.

Description

Stiphodon semoni, Family Gobiidae, subfamily Sicydiinae, also known as the Opal Cling Goby, Cobalt Blue Goby or the Neon Blue Goby, and formerly known as Allan's Cling Goby, is a small, slender fish reaching a maximum total length of 35 mm in Australian habitats (Thuesen et al., unpubl. data, 2009). Males have a lateral band of bright structural colouration along the length of their bodies, ranging from vivid blue to green and pink depending on the light reflectance (Thuesen et al., unpubl. data, 2009). The dorsal and pectoral fins are transparent, the caudal fin is transparent with mottled dark spots on the rays and the anal fin is sooty in appearance with mottled blue flecks and a bright blue margin (Thuesen et al., unpubl. data, 2009).

Females are whitish-cream in colour with two horizontal black bands and a black spot on the caudal peduncle (Thuesen et al., unpubl. data, 2009). The species has disc-like fused pelvic fins which are used to 'cling' to rocky substrates in fast flowing runs in the streams that it inhabits (Thuesen et al., unpubl. data, 2009).

Conservation Status

The Opal Cling Goby is listed as **critically endangered***.* This species is eligible for listing as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as the species has a very restricted geographic distribution in Australia, which is considered precarious for its survival due to stochastic threats, and the total number of mature individuals is estimated to be 10–30, which is considered extremely low (TSSC, 2010).

The species is not listed under the Queensland *Nature Conservation Act 1992.*

Distribution and Habitat

In Australia, the Opal Cling Goby is known from a limited number of rainforest streams in the Wet Tropics region of north-east Queensland, and the estimated total population is 10–30 mature individuals. This species occurs within the Wet Tropics Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion and the Wet Tropics Natural Resource Management Region.

The Littoral Rainforest and Coastal Vine Thickets of Eastern Australia ecological community also occurs in the Wet Tropics, however is unlikely to overlap the habitat of the Opel Cling Goby as the ecological community only occurs within 2 km of Australia's coastline.

The Opal Cling Goby is also known from Bali, Indonesia, northern Papua New Guinea and the Solomon Islands (Watson, 1996).

Threats

The main threat to this species in Australia has been identified as collection for the aquarium trade, although this has not been quantified. Potential threats include loss of suitable habitat due to human development, water extraction, climate change and prolonged drought (Ebner, pers. comm., 2009). These threats are likely to alter the species' habitat through changes to water quality and flow regime. Construction of physical barriers, such as culverts and dams are also considered possible threats as these structures can prevent movement of the larvae out to sea and the subsequent return of juveniles (Ebner, unpubl. data, 2009). Due to the isolation of the species, stochastic events, such as severe floods or prolonged drought, in the area of habitat are likely to have a significant impact on populations of the species.

Spotted Tilapia (*Tilapia mariae*) is an introduced fish species which has established populations around the Cairns area (ACTFR, 2007). The Spotted Tilapia may outcompete the Opal Cling Goby for food resources, and has the potential for piscivory (consuming eggs and larvae of other fish) (ACTFR, 2007).

Research Priorities

Research priorities that would inform future regional and local priority actions include:

- More precisely assess population size, distribution, lifecycle and ecological requirements and the relative impacts of threatening processes.
- Design and implement a program to monitor population sizes and dynamics or, if appropriate, support and enhance existing programs.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations.
- Investigate the habitat use and lifecycle of the species.
- Resolve taxonomy between this species and other species of cling goby.
- Investigate and quantify the impact of collecting for aquariums.

Regional Priority Actions

The following regional priority recovery and threat abatement actions can be undertaken to support the recovery of the Opal Cling Goby.

Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats.
- Ensure there is no disturbance in areas where the Opal Cling Goby occurs, excluding necessary actions to manage the conservation of the species.
- Manage any disruptions to water flows and barriers which may prevent movement of larvae out to sea and subsequent return of juveniles.
- Prevent overcollection.

This list does not necessarily encompass all actions that may be of benefit to the Opal Cling Goby, but highlights those that are considered to be of highest priority at the time of preparing the Conservation Advice.

References and Information Sources

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