NSW GOVERNMENT Department of Primary Industries

primefact

Cauliflower Soft Coral – Dendronephthya australis

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Introduction

Cauliflower Soft Coral (*Dendronephthya australis)* is a temperate soft coral species endemic to eastern Australia. The species name comes from its bushy, globed shape branches which resemble a cauliflower. The species is predominantly found in estuarine environments in NSW where it occurs at depths of 1 – 15 m, however, it occasionally occurs offshore down to depths of 30 m.

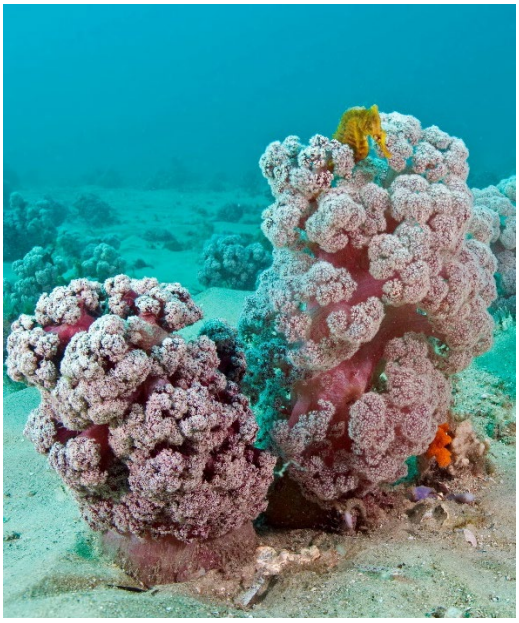

Figure 1 Cauliflower Soft Coral

The only estuaries where Cauliflower Soft Coral is known to grow in abundance are Port Stephens and the Brisbane Water area of Hawksbury River, New South Wales. They have been found sporadically in other locations in NSW waters including, Sydney Harbour, Terrigal, Botany Bay and Jervis Bay, however their persistence in these areas is uncertain.

In NSW, Cauliflower Soft Coral is as an endangered species. There are heavy penalties for harming, possessing, buying or selling them, or for harming their habitat (see 'Legal Implications').

Description

Cauliflower Soft Coral usually grows to 20 – 30 cm tall but it can reach heights of up to 1 m. It is usually a bright reddish pink colour and forms branched or bushy colonies with the branching stems supporting densely placed polyps. The bushy colonies usually have a rough or prickly feel from the sclerites - the thin spiny pieces of calcium carbonate which support its soft bodied structure.

Some of the morphological characteristics of the Cauliflower Soft Coral are:

- Branching stem,
- Lobes
- Polyps

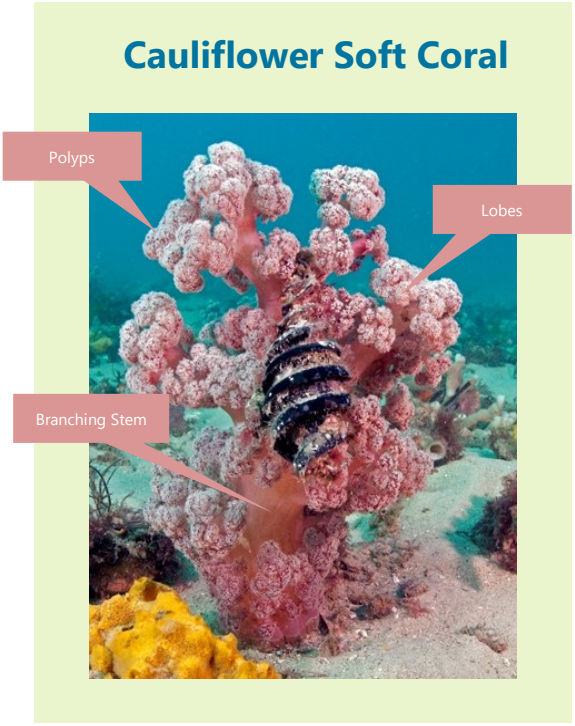

Figure 2 Cauliflower Soft Coral anatomy

Habitat and ecology

The Cauliflower Soft Coral generally occurs within protected estuarine environments in NSW, however, it is occasionally know to be found in deeper offshore waters. It is generally found in areas of sandy seabed where this is high current flow. Studies in the Port Stephens estuary have indicated that the species has very specific habitat requirements which are attributed to several factors, including: bathymetry, the slope of the seabed, speed of tidal currents and distance from the estuary mouth. In Port Stephens estuary, the area of seabed found to provide suitable habitat for colonisation of Cauliflower Soft Coral is less than 1.5% of the estuary basin.

The coral habitat is known to be important for a diverse range of other marine species; it is the preferred habitat for the Endangered White's Seahorse, as well as juvenile Snapper, Goatfish, Pygmy Leatherjackets, wrasses and numerous marine invertebrates such as cowries and crabs.

Why is the Cauliflower Soft Coral threatened?

The primary cause for the decline in abundance of Cauliflower Soft Coral is from damage to its natural habitat in eastern Australia. The corals occur within coastal estuaries and embayments which are areas subject to population pressure.

Coastal development has altered natural sediment fluctuations within estuaries. Within Port Stephens, declines in Cauliflower Soft Coral numbers have been associated with changes in sand movement across the estuary. These changes have been attributed to coastal development and management where shorelines have been modified for human use and disrupted the movement of sediments within the estuary. Changes in sediment movement can lead to areas of sand accumulation which can smother existing Cauliflower Soft Coral habitat.

Direct damage to habitats from anchors and moorings has also affected the abundance of Cauliflower Soft Coral. Port Stephens estuary and the Brisbane Water area of the Hawkesbury River both have high levels of boating activity. Anchors dragged through the seabed habitat can damage and rip up corals. Boat moorings using block and chains can scour large areas of the seabed up to 700 m^2.

Natural predation from the heterobranch sea slug is also impacting on the health and abundance of the Cauliflower Soft Coral. These sea slugs aggregate in Spring and have been shown to affect the feeding ability of the soft coral. As the population of Cauliflower Soft Coral has declined the impact from the sea slugs has become more pronounced. This is because the slugs will aggregate in large masses around a small area of coral habitat. This depletes the local population and leads to further declines in the species abundance.

Conservation and recovery actions

- Continue to monitor the distribution and abundance of Cauliflower Soft Coral at important sites (Port Stephens and Brisbane Water) to inform population status and to assist in determining the effectiveness of recovery actions
- Implement education initiatives to improve identification and awareness of the status of Cauliflower Soft Coral and ways to minimise impacts on the species by preparing and distributing appropriate advisory material
- Reduce the impact of public and private boat moorings that impact on Cauliflower Soft Coral habitats within NSW including replacement of block and chain moorings with non-scouring environmentally friendly mooring systems
- Implement aquarium studies to develop techniques for Cauliflower Soft Coral cultivation and initiate research that examines the feasibility of transplanting aquarium grown Cauliflower Soft Corals for transplant into the wild for rehabilitation
- Report any sightings of the species via DPI's Threatened Species Sighting Program online form: https://www.dpi.nsw.gov.au/fishing/threatened-species/report-it

A full list of strategies to be adopted for promoting the recovery of the Cauliflower Soft Coral is set out in the NSW DPI Priorities Action Statement: www.dpi.nsw.gov.au/fisheries/speciesprotection/priorities-action-statement

Legal implications

It is illegal to catch and keep, buy, sell, possess or harm Cauliflower Soft Coral (or any other threatened species in NSW) without a specific permit, licence or other appropriate approval, and significant penalties apply. For endangered species, these penalties can include fines of up to $220,000 and up to two years in prison.

There can also be significant penalties for causing damage to the habitat of a threatened species without approval through actions such as boat anchoring, dredging, construction and maintenance works.

The impacts of developments or activities that require consent or approval in accordance with the *Environmental Planning and Assessment Act 1979* must be assessed and considered by consent or determining authorities. Where such actions are likely to result insignificant impact on a

threatened species or its habitat, a detailed species

impact statement must be prepared.

Strategies to be adopted for promoting the recovery of the Cauliflower Soft Coral must be set out in the NSW DPI Priorities Action Statement.

Bibliography and further reading

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For further information

See the NSW DPI website: www.dpi.nsw.gov.au

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