

CUTTLEFISH UPDATE

Since the cross-government Cuttlefish working group was formed in July 2012, a number of research projects have been undertaken to investigate concerns about a significant decline in Giant Cuttlefish populations at Point Lowly. Under the guidance of working group members, a number of these projects have now been finalised with summaries provided in this update.

While the exact cause of the decline remains difficult to pinpoint to a specific origin, the research to date has been valuable in eliminating possible causes and adding to knowledge on this iconic species.

Promisingly, in 2014 the population survey at the Point Lowly aggregation site recorded the first population increase of Cuttlefish in six years, 57,317, up from 13,492 in 2013. While the working group is cautiously optimistic about this increase in numbers, the group has committed to continuing its population monitoring survey in 2015 to determine whether last year's upward trend is ongoing.

With this year's Giant Australian Cuttlefish breeding season now underway, the community is also reminded of opportunities to contribute information on Cuttlefish movements or sightings through [Redmap](#) and the Reef Watch [Feril or in Peril](#) program. Experienced divers also have the opportunity to join a Whyalla-based Giant Cuttlefish citizen science group to assist in gathering Cuttlefish survey data – find out more in this update.

Scott Ashby
Cuttlefish Working Group Chair
Chief Executive, Primary Industries and Regions South Australia

MANAGEMENT

In February, the State Government extended the temporary closure to all fishing for Cuttlefish in northern Spencer Gulf until 15 February 2016.

The closure includes all waters north of a line commencing near Arno Bay on Eyre Peninsula to Wallaroo on Yorke Peninsula. It applies to the targeting and take of Cuttlefish, with any Cuttlefish caught to be immediately and carefully returned to the water.

The northern Spencer Gulf cuttlefish fishing closure is in addition to the permanent cephalopod (squid, cuttlefish and octopus) fishing closure in the waters of False Bay.

More information on the closure is available at www.pir.sa.gov.au/fishing

RESEARCH RESULTS

While the results of the 2014 Cuttlefish population survey and impacts of shipping research were presented in the last Cuttlefish Update, the following research projects have been completed since this time, with summaries of the findings provided below. All research reports are available at www.pir.sa.gov.au/cuttlefish

Alternate site surveys

Objective: To search for alternate spawning areas throughout northern Spencer Gulf.

An exploratory survey found no evidence of Giant Australian Cuttlefish spawning activity outside of the known spawning grounds. Considerable effort was made to target the most likely areas within northern Spencer Gulf that could support spawning Giant Australian Cuttlefish. Although no Giant Australian Cuttlefish were observed outside of the Point Lowly spawning grounds, this survey clarified the extent of available spawning habitat throughout northern Spencer Gulf. In particular, it reaffirmed that the continuous, shallow, boulder-type reef that fringes Point Lowly is not widespread.

Artificial habitat project

Objective: To characterise the natural spawning substrate with the intention of using this information to design and develop artificial habitat that may promote spawning in areas where habitat is limited.

There is currently no evidence to suggest that habitat loss has contributed to the decline in Giant Australian Cuttlefish abundance. The deployment of artificial spawning habitat is unlikely to significantly promote the recovery of the population to the levels that were observed in the late 1990s since spawning habitat is not limited. While none of the artificial dens used in the study supported spawning animals during the 2014 spawning season, they have been left in the water and will be assessed again during the 2015 spawning period.

Bioaccumulation of Heavy Metals

Objective: To assess whether there are abnormally high levels of metals accumulating in Giant Australian Cuttlefish in northern Spencer Gulf.

The study to investigate metal accumulation in Giant Cuttlefish has been completed. A significant regional difference in metal burden was detected in Giant Australian Cuttlefish, with the relative concentration of many metals (i.e. Cd, Zn, Pb, Au, Cu) being more pronounced in Cuttlefish collected from the Point Lowly spawning grounds compared to those collected further south (Wallaroo). Despite this, the observed concentrations were comparable to other cuttlefish species, suggesting that they were not likely to exceed the physiological tolerance of cephalopods. Results indicated that metal accumulation in Giant Cuttlefish was not a likely contributing factor to the population decline.

Cuttlefish By-catch

Objective: To quantify Cuttlefish by-catch in the commercial fishing sector.

The research for the fisheries by-catch project has been completed and indicated that there is no evidence to suggest that fisheries by-catch has contributed to the decline in Giant Cuttlefish abundance. Given the 2014 spawning population was 325% larger than the previous year, the estimates of total annual catch from commercial fisheries have not adversely affected the Giant Cuttlefish population in northern Spencer Gulf.

ONGOING RESEARCH

While a population survey has commenced for the 2015 spawning period, the working group is also awaiting the final results of a project investigating the fine-scale population structure of Giant Australian Cuttlefish.

Led by the University of Adelaide in collaboration with SARDI and the South Australian Museum, the project is funded by the Fisheries Research and Development Corporation and the Department of Environment, Water and Natural Resources. The project aims to:

- a. Determine the movement throughout the life history and finer-scale population structure of the Giant Australian Cuttlefish in northern Spencer Gulf.
- b. Resolve the taxonomic status of Giant Australian Cuttlefish to determine the extent of its geographic boundaries.

Develop an integrated model that assesses and evaluates the response of the northern Spencer Gulf population to environmental and anthropogenic factors, thereby assessing population viability.

The final report for this project is expected to be completed later this year.



COMMUNITY INPUT

Community input is valuable to improving our understanding of Giant Australian Cuttlefish.

Members of the public can assist by reporting any sightings of Cuttlefish aggregations (groups of more than 10 Cuttlefish) and their eggs via www.redmap.org.au. This information will also help determine if this species is breeding outside Point Lowly.

Sightings of Giant Australian Cuttlefish (or their eggs) can also be reported online to the Reef Watch [Feral or in Peril](#) program run by the Conservation Council SA. You will need to register to use the system and then go through the Field Guide to make your report.

In 2015, experienced divers are also being invited to join a Giant Cuttlefish Citizen Science Group to help gather survey data on the Giant Australian Cuttlefish. Established by Whyalla locals who are passionate about protecting this iconic species, training is provided to divers keen to use their skills to help gather information during the spawning season. Training is provided to new participants to help understand the survey methodology, including an accompanied dive with an experienced surveyor to learn the ropes. To find out more about the program and how to join contact:

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