

The survey was conducted around the areas of Kia (north-west), Buala (central) and Tatamba (south-east Isabel); these areas were commercially exploited during the 1960s, with an estimated annual production of 18 tonnes. This fishery declined, however, due to dwindling stocks and a decrease in market prices for the shell.

Diving in selected areas was carried out by a team of three divers: two commercial contract divers from Japan, who used hookah (surface air-feed) equipment, plus Senior Fisheries Officer Paul Nichols of the Ministry of Natural Resources, who dived using SCUBA. Diving was carried out from

a 7-metre Yamaha workboat, to a maximum depth of 40 metres in most places.

Results from the survey were not encouraging for the sites visited by the team; the coverage rate of shells was very low (on average, less than 1 shell/1,000 sq.meters). However, due to reef ownership problems, some areas which are reported to hold substantial goldlip stocks were not dived; thus a follow-up survey may be planned. Should sufficient stocks of gold-lip shells be located to supply adequate numbers of shells to a culture industry, the production of cultured blister and round pearls in Solomon Islands could become an important new development in the country's fisheries sector.



Members of the goldlip survey team holding specimens of *Pinctada maxima* aboard the survey vessel.

Further gold-lip survey in Wagina Region, Solomon Islands

Kathy Colgan, of the Australian Bureau of Rural Resources, led a team on a survey of gold-lip stocks in the Wagina Region of Solomon Islands (between Santa Isabel and Choiseul), in November — December 1990. The survey team included Nelson Kile and Gideon Tiroba of the Solomon Islands

Fisheries Department, as well as Richard Storey of the Cook Islands Ministry of Marine Resources, and Samson Piniata of Cook Islands Pearls Ltd. We hope to be able to publish a summary of the findings in Pearl Oyster Information Bulletin #4.

The Australian pearling industry will be worth an estimated A\$ 80 million in 1991. One of the main aims of two recent surveys of pearling beds in the north was to try to fill in some of the information gaps in the industry.

The major problem facing the pearling industry is the shortage of shell. Pearl fishermen have to collect shell from the wild to take back to their farms, where they insert the nucleus. It is a very high risk industry — the animals can, and often do, die at any stage of the process. Despite a small measure of success in producing hatchery shell, industry members still rely heavily on the wild stocks.

Carried out by the Fisheries Resources Branch of the Bureau of Rural Resources (BRR), the pearl bed surveys were designed to provide detailed information about the pearling grounds in Torres Strait and the Northern Territory. Data were collected using divers, underwater video cameras, and sediment and benthic samples. Kathy Colgan, from BRR, headed up the project. Before she even ventured out near pearling beds, Kathy had to spend a number of months researching possible sites, talking to members of the pearling industry, and organising a diving team and boat.

But Kathy believes the end result will prove very worthwhile to the pearling industry. 'I think we have got some tremendous results', she said. 'We hope the survey will answer a number of questions about pearling and the pearl resource.' 'We need much more information — you can't make informed decisions about the fishery unless you have the basic biological knowledge about the species.'

Kathy's project was broken into two parts: a survey of Torres Strait pearling beds, carried out between March and June 1989, and a survey of the Northern Territory pearling beds, carried out between October and December 1989.

Torres Strait

Funded by the Government, the Torres Strait survey was designed to find out whether there was still shell on old pearling grounds. These grounds were listed in historical records as being very productive for shell. 'We weren't sure whether the people involved in looking for shell in Torres Strait weren't finding it because they weren't going out and looking for it, or because it just wasn't there. I targeted areas which in the past had been productive for shell, visiting and filming the area, and collecting samples', Kathy said.

Before going out to survey the beds, Kathy talked to as many people as she could, including islanders who had been involved in the pearling industry in the past. One valuable source of information proved to be Vern Wells, master of the *Paxie*, the ship that surveyed the pearl beds during the 1950s and 1960s.

Kathy also visited the CSIRO archives in Canberra to gain access to a large amount of previously unpublished information from the now deceased scientist Stan Hyde, who had been based at the CSIRO pearling research station on Thursday Island for 12 years, from 1949 to 1961. A major part of her survey work included organising the gear she would use in the surveys. This involved buying and learning how to use a video camera, organising a diving team and a vessel, and arranging the construction of a sled and housing for the camera, based on a CSIRO design.

The underwater equipment Kathy used in the surveys included a remotely operated video camera, and a grab and dredge to collect sediment and ocean bottom organisms. The camera ran along the bottom of the ocean on a sled and was connected to an on-board monitor via a video cable. According to Kathy, one of the major advantages of video is that it can be used to correlate the information received by divers.

'The advantage of video is that you can use it to compare what the diver sees and what is actually there', she said. 'Divers' estimations of what is on the bottom are very subjective, and depend on the experience of the diver. By enlarging the frames on the video we can get a correlation between the two sets of information.'

Kathy and her team successfully visited and filmed a number of different sites during the three months they spent in the area. When the results are analysed, the survey will provide valuable current information about the status of the stocks on the 'old grounds'—an area to the west of Badu.

Northern Territory

The Northern Territory bed survey was jointly funded by industry and Government, following a decision in 1986 by the Northern Territory and Commonwealth Governments to establish and develop a farm-based Northern Territory pearling industry.

With the benefit of a bigger boat, an 'A' frame to swing the equipment out over the side, and two cameras—a forward-pointing one and a downward-

pointing one—Kathy hopes she will have some interesting results from her field trip in this area.

The survey focused on two main areas, the eastern fishing grounds centred around the Crocodile Islands, and the western fishing grounds west of Bathurst Island. These areas were assessed as being the most likely to contain shell, particularly the gold- and silver-lipped pearl shell *Pinctada maxima*. The aim of the survey was primarily to determine the geographical extent of the beds.

'I think I've done that, in part', Kathy said. 'Although I'm sure there will be room for argument'.

The survey results will be used in management decisions, including the assessment of current quota levels. The results will also help pearling industry members target shell collection. 'The question that really interests me is the type of bottom where shell is found, and whether we can speed up the fishing process and be of assistance to the fishing industry', said Kathy. 'For example, we could say that if you

get certain conditions, you're likely to get shell, or you're not likely to get shell. The commercial side of it really is the ultimate aim.

'I think this research is a starting point for the pearl fishermen. I'd like to see further research where science and industry get together to determine what questions need to be answered.'

Survey results

Kathy returned to Canberra with an enormous amount of data from the two surveys, including a large quantity of sediment and benthic samples, which are currently being analysed by various organisations, and 300 hours of video film.

The results of the surveys will be released in the form of two preliminary reports. The reports will contain preliminary data, some mapping, and initial thoughts based on the results. Kathy will present the reports to pearling members at workshops to be held during May 1990.

Training pearl seeding technicians in Australia

Source: Western Fisheries

Pearl producers, in Western Australia, have undertaken to train local people in the industry under a recent agreement with the Federal Government.

The pearling industry has signed a negotiated agreement with the Federal the Department of Immigration, Local Government and Ethnic Affairs and the Department of Employment, Education and Training.

Commenting on the agreement, Western Australian Fisheries Minister Gordon Hill said he was pleased that negotiations had been brought to a successful conclusion. 'The agreement provides for a number of pearl culture technicians being permitted entry into Australia, but at the same time setting out an education and training commitment by Australian companies to enhance the skills base within the Australian pearling industry', he said.

