

# SOLOMON ISLANDS MARINE ASSESSMENT

## KEY FINDINGS

An international team of scientists and managers conducted a large-scale marine assessment of the Solomon Islands in May/June 2004. Led by Dr Alison Green of the Nature Conservancy, this was the first survey of the marine resources of the main archipelago, covering a distance of almost 2,000nm and seven provinces. In 35 days of survey, the team found very high biodiversity of both corals and fish indicating that the Solomon Islands are part of the Coral Triangle which has the highest marine biodiversity in the world. Unfortunately, the team found low numbers of commercially exploited species in most areas, indicating that overfishing is widespread.



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### CORALS AND REEF CONDITION

Dr Charlie Veron (AIMS) and Emre Turak found that the Solomon Islands has one of the highest diversities of corals anywhere in the world. They recorded 494 species of corals and several new species. This extraordinarily high diversity of coral species is second in the world only to Raja Ampat in Indonesia. The reefs that the team visited were generally in good health. However, many sites had above natural numbers of crown-of-thorns starfish (COTS), with significant coral mortality at a few sites where there were high numbers of COTS. Patches of mortality that appear to match the 2000 coral bleaching event were found, particularly in the eastern Solomon Islands. Damage to corals from blast fishing was only seen at a few sites.

### REEF FISH

The survey confirms that the Solomon Islands has one of the richest concentrations of reef fishes in the world and is an integral part of the Coral Triangle. Dr Gerry Allen (CI) recorded 1019 fish species of which 786 (77%) were observed during the survey and the rest were found from museum collections. Gerry found approximately 47 new distribution records for the Solomon Islands, as well as a cardinalfish (Apogonidae) which is a new species. Gerry found from 100 to 279 fish species per site, with an average of 185 per site. A total of 200 species per site is considered the benchmark for an excellent fish count. This figure was exceeded at 37% of Solomon Islands sites. The best site for fish diversity was Njari Island, off Gizo with a total of 279 fish species. Gerry has only found more species than this at three other sites in the world.

### COMMERCIALY IMPORTANT MARINE SPECIES



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Peter Ramohia (Department of Fisheries), Alec Hughes, Tingo Leve (WWF), Michael Ginigele (Tiola Marine Protected Area Project, Roviana Lagoon) and Alison Green (TNC) surveyed the status of stocks of commercially important species. On many reefs, the team found few sea cucumbers, *Trochus* shell, crayfish, tridacnid clams or large commercial fish species. The most valuable species such as maori wrasse, bumphead parrotfish, *Trochus*, larger species of tridacnid clams and some sea cucumbers (*Holothuria nobilis*, *Holothuria fuscogilva*, *Thelanota ananas*) were often absent. During the survey, the team did not see a single green snail *Turbo marmoratus* which used to support a large export industry, indicating that this species may be locally extinct and requires immediate protection.

In contrast, in the Arnavon Marine Conservation Area where commercial fishing and collecting is banned and only subsistence collecting of some reef fish species is allowed, there were many sea cucumbers, *Trochus*, tridacnid clams, crayfish, as well as large commercial fish species particularly the bumphead parrot fish. Also, after more than 10 years of protection, pearl oyster, especially black lip *Pinctada margaritifera*, were abundant. This shows that the conservation area has achieved its goal of protecting important fisheries species.

## WHALES AND DOLPHINS



Benjamin Kahn (APEX Environmental Pty Ltd) found a relatively low cetacean species diversity and abundance throughout most of the Solomon Islands with dolphins locally abundant in a few areas. Benjamin sighted 10 species of cetaceans including spinner, spotted, Risso's, bottlenose, Indo-Pacific bottlenose and rough-toothed dolphins, and a Bryde's or Sei whale, orca and beaked whales. Sperm whales were also identified acoustically. The Indispensable Strait region and some other narrow, deep passages in the Solomon Seas are probably migratory corridors. Benjamin spoke to villagers about the traditional dolphin drive which is still practiced in some areas. The drive has a strong cultural heritage with minimal modernisation in the fishery.

## SEAGRASS

Len McKenzie (QDPI&F), Ferral Lasi (TNC) and Stuart Campbell (WCS) found 10 species of seagrass, 80% of the known seagrass species in the Indo-Pacific region. They found some very large meadows, including one that was more than 1000 hectares in size and some deep meadows, down to 37m. Throughout the survey, the seagrass meadows were associated with a high biodiversity of fauna including dugong, fish, sea cucumbers, seastars, algae and coral. The highly productive seagrass meadows are often on the fringe of coastal communities and support important artisanal fisheries and provide extensive nursery areas for juvenile fish.



## COMMUNITY LIAISON

Communication with local communities and national and provincial governments was critical to the success of the survey and was conducted by Willie Atu, Ferral Lasi, Rudi Susurua (TNC) and John Pita (Dept Environment & Conservation), with assistance from national and provincial government officials, WWF and local NGOs. Because of the excellent liaison work conducted before and during the survey, the team had fantastic support as it travelled through the Solomon Islands. This survey has provided an important basis for working with partners and local communities to protect these important resources in the long term.

## SUPPORT

The survey was a cooperative project between The Nature Conservancy (TNC), Solomon Islands Government, local and international non-government conservation agencies including World Wide Fund for Nature (WWF), Conservation International (CI), Wildlife Conservation Society (WCS), Australian research organisations (Australian Institute of Marine Science (AIMS), CRC Reef Research Centre, Queensland Dept Primary Industries & Fisheries (QDPI&F), APEX Environmental Pty Ltd) and Triggerfish Images. It was supported by the David and Lucile Packard Foundation, Homeland Foundation, the John D. and Catherine T. MacArthur Foundation and the MV FeBrina of Walindi Plantation Dive Cruises.

