

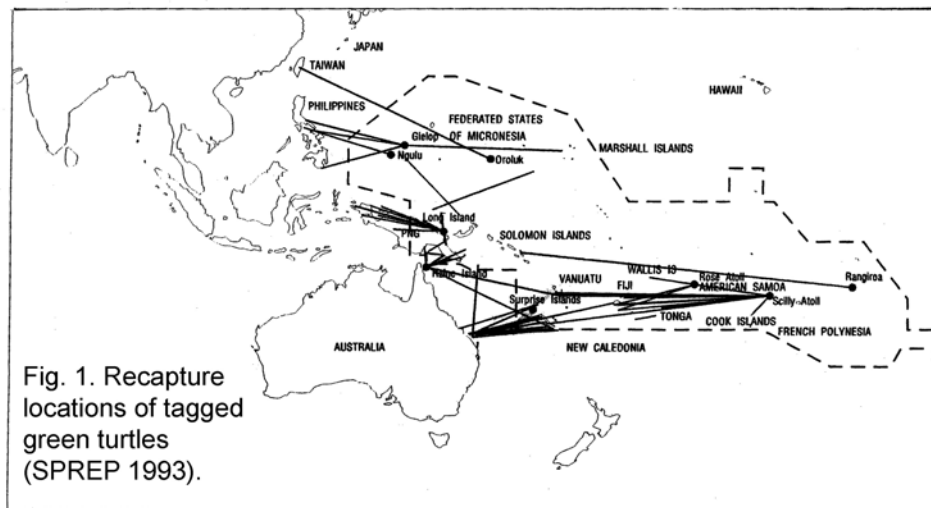
Rapidly approaching extinction: sea turtles in the central South Pacific

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Hawksbill and green sea turtle populations in the central South Pacific are in jeopardy. The 1998 Recovery Plan Team (RPT) for the Pacific found that hawksbills are “rapidly approaching extinction” (NMFS and USFWS 1998). The RPT was surprised and appalled at how few hawksbills are left in areas of once-high abundance. They concluded that the status of this species is clearly of the highest concern for the Pacific and it was recommended that immediate actions be taken to prevent its extinction. The RPT further found that green turtles in the Pacific (outside Hawaii) have seriously declined and should probably be classified as ‘endangered’ rather than ‘threatened’.

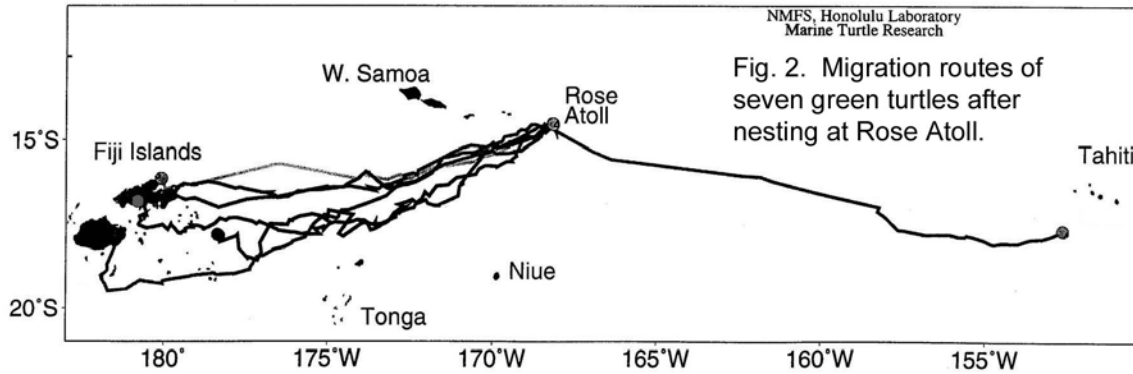
Given this dire outlook, what do we know about sea turtles in the central South Pacific? Although the general answer is ‘very little’, this paper summarizes some relatively new migration data, and identifies two threats that are increasing in intensity.

Interconnected Islands. It is well established that sea turtles migrate between nesting and feeding areas, often separated by large distances, but such information in the South Pacific is rudimentary because the region is geographically large and contains thousands of islands. For post-nesting green turtles, fin-clip tagging data reveal extensive migrations across the South Pacific (Fig. 1).



More recent studies by NMFS (G. Balazs) and the Dept. Marine & Wildlife Resources (American Samoa) used satellite telemetry to track post-nesting greens at Rose Atoll in American Samoa. Six turtles migrated directly to Fiji, while another migrated in the opposite direction to French Polynesia (Fig 2.). These data indicate important linkages between Fiji, American Samoa and French Polynesia. An additional green turtle was tracked from the Cook Islands to Fiji in 2000 (G. Balazs, pers. comm.).

For those turtles tagged in the central South Pacific (i.e., French Polynesia, Cooks, American Samoa), 96% of the 26 recovered turtles migrated westward after nesting, which suggests a common pattern of turtle utilization of the region. Over half of these turtles (62%) were recovered in Fiji. It may be that islands to the



east of Fiji lack significant quantities of seagrass for the green turtles to eat, so the turtles return after nesting to areas like Fiji which have major seagrass beds.

As clearly illustrated by these migration patterns where turtles nest in one country and feed in another, recovery efforts are politically complex, but it is essential to bridge the gap between countries dealing with the same stock of turtles. A coordinated research and recovery plan is needed that encompasses both endpoints of the turtles' migration.

For hawksbills, limited information on local movements is available (e.g., Grant et al. 1995, Utzurrum pers. comm.), but migration patterns in the region are unknown.

Increasing Threats. As outlined in the Recovery Plan, there are many threats to sea turtle populations in the Pacific region, but direct and indirect impacts by humans (eg, harvest of turtles and eggs, bycatch in fisheries) are among the most serious problems.

Expanding human population. It appears likely that human population pressure on the environment will continue to increase due to the rapid human growth occurring across the South Pacific (Craig 1995). For example, American Samoa is currently growing at an annual rate of 2.1%, which means that about 1,200 additional people are added to their small islands each year (Fig. 3)(Craig et al. 2000).

A similar increase is projected for the Pacific region as a whole (Melanesia, Micronesia, Polynesia), despite emigration and projected declines in growth rate (SPC 2000). The Pacific population of about 7.1 million people in 1998 is expected to double over the next 50 years (Fig. 4). That amounts to approximately 170,000 additional people per year in the region.

Because most Pacific islands are small and have limited natural resources, it seems probable that human growth pressures will translate into increased impacts to turtles, both directly (subsistence harvest) and indirectly (removal of turtle nesting habitats by coastal development and sand mining, bycatch in fisheries).

Bycatch in longline fishery. A new issue in American Samoa is the potential bycatch of turtles in the developing longline fishery for pelagic fishes, primarily albacore. Pelagic catches have increased rapidly in the past several years (Fig. 5). Turtles have been caught on this longline gear, but the rate of turtle bycatch is not known. While this fishery may seem small

Fig. 3. Population growth in American Samoa.

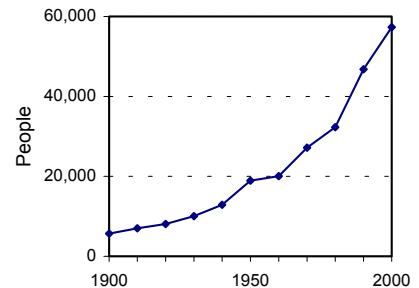
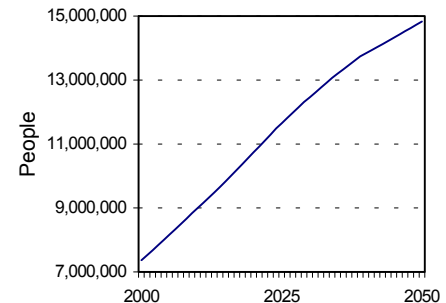


Fig. 4. Population projection for the Pacific region (SPC 2000)



and localized, it still represents about 9,000,000 hooks being set annually around the islands (WPRFMC 2001). Given that hawksbills are “rapidly approaching extinction”, it is important to quantify what impact this fishery is having on endangered sea turtles.

Some Needs. In addition to the information needs outlined in the Recovery Plan, such as the need to collect basic biological data on turtles in the region and the need to improve public awareness of turtle conservation issues, several additional considerations are:

- Regional plans. It is essential to develop a coordinated research and conservation plan that directly connects the island countries that manage the same stock of turtles along different points of the turtle’s migratory pathway.
- Protection of Fiji’s seagrass beds. Fiji’s seagrass beds are a regionally significant resource for green sea turtles that may well be providing foraging habitat for over half of the adult greens in the central South Pacific. These foraging areas should be delineated and protected.
- Bycatch. Given the endangered status of sea turtles in the region, their bycatch and mortality rates in South Pacific fisheries needs to be quantified.
- Satellite telemetry studies. Satellite telemetry has proven to be a highly successful means to collect valuable data that appeal to scientists, managers and the public. This technique convincingly links islands that share the same turtle stocks because the exact migration pathway can be seen, and the technique lends itself to publicity opportunities (see ‘turtle contest’ example). A 10-year program should be implemented whereby a team would tag 3 turtles each year in a different South Pacific country.
- Coral Reef Initiative (CRI). The national and international CRI process, which is a high-profile and funded effort to protect coral reef ecosystems in the US and worldwide, largely overlooks the role of sea turtles as a component of the coral reef ecosystem (which is broadly defined to include seagrass areas). This should be remedied. Similarly, turtle nesting and foraging areas need to be considered when designating 20% of US coral reefs as Marine Protected Areas, as recommended by the President’s Coral Reef Task Force.
- Recovery Plans. The 1998 Recovery Plan needs to be implemented.

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Fig. 5. Longline catches in A. Samoa (WPRFMC 2000)

