Detailed Abstract
As in many Pacific islands, subsistence use of marine resources is culturally and economically important to residents of American Samoan coastal villages. Historically, village communities in American Samoa have managed their reef areas, enforcing village rules and regulations, and Samoans continue to practice traditional fishing methods locally. While effective local management was well practiced and enforced by villages in earlier times, the islands have gone through major cultural and economic changes over the past century, significantly altering resource use patterns and the Samoan way of life.

Interviews were conducted with elder fishermen from American Samoan coastal villages in order to enhance current knowledge and fill in knowledge gaps regarding changes in the status of marine resources and local management strategies. Because elder fishermen have had regular long-term contact with marine resources, they are capable of providing useful information regarding changes in marine resources over time in a context where baseline data is limited or non-existent. Elder fishermen are also well suited to provide information about past and present local strategies for marine resource management, as well as suggestions for effective marine management strategies for the future.

Between November 2007 and March 2008, our interview team conducted in-depth interviews with 78 elder fishermen from 28 villages throughout American Samoa. Fishermen ranged in age from 40 to 86 (average age = 62), with 90% of respondents over the age of 50. 60% of respondents were from the island of Tutuila, and 40% were from the outer Manu’a islands. The interviews were semi-structured with a number of open-ended components, focusing on the following topics:

- Changes in fishing frequency over time (how, where, and why)
- Changes in species catch and abundance (for reef associated species and rare “big fish” reef species)
- “Special” areas for fishing, including locations, changes in conditions over time
- Local restrictions on harvesting marine resources
- Traditional or historic methods of marine management
- Importance of marine resources to the Samoan way of life
- Other elements of traditional knowledge (fishing techniques, legends, recommendations, etc.)

Generally, fishermen perceived reef fish to have declined (60% of total). This trend was more marked in Tutuila, which has a greater population and is much more developed than the outer Manu’a islands, where about half of fishermen believed the status of reef fishing had not changed over time. Trends in perception varied with different species. Fishermen perceived atule (bigeye scad) fishing to have declined over time (particularly in Manu’a), while palolo (a polychaete worm is harvested during its yearly spawning period) was perceived as declining over time in Tutuila, but not in Manu’a. Reef sharks, on the other hand, were largely perceived to be in good condition on both
islands. This perception of the status of reef sharks is particularly interesting in light of the upcoming ban on shark fishing in the islands.

Legislation is currently underway in American Samoa to ban all fishing of certain “big fish species” of concern, including Bumphead parrotfish (Bolbometopon muricatum), humphead wrasse (Cheilinus undulatus), and giant grouper (Epinephelus lanceolatus). Given the lack of historic biological data on these species, we asked elder fishermen, in an open ended question, if they were familiar with these species, what they knew about them, and if there had been changes in their status over time. Answers were then coded and grouped by themes. Most fishermen (n=51) responded to the question by generalizing about all three species as a group, most commonly stating that adult sizes of these species were found only in deep water (with no clear consensus as to whether their numbers are declining, and many stating they were unfamiliar with these species). Only some fishermen mentioned trends for individual species. Those who specifically mentioned bumphead parrotfish (n=18) and humphead wrasse (n=19) largely perceived these species as uncommon or in decline, and several were unfamiliar with these species. Fishermen who mentioned giant grouper (n=25), on the other hand, generally did not perceive this species to be declining, but stated that they are found predominantly in deeper water.

Interestingly, only 6% of people interviewed cited over-fishing as the reason for the decline in the quality of reef fishing. The most commonly perceived problem was habitat deterioration (41%), which in some cases was caused by past use of illegal fishing methods such as poisons or dynamite (21%). Habitat destruction associated with development (construction, pollution, waste, runoff) was mentioned by 19% of respondents. This varied between more developed Tutuila, where it was seen as a significant problem, whereas in Manu’a only construction of the wharf in Ta’u was cited. Hurricanes and natural disasters were cited as problems in all islands, as was an overall decline in marine biodiversity. Because the decline in reef fish is considered worse in Tutuila than in Manu’a, respondents from Tutuila cited more reasons for the decline than Manu’a.

Fishermen were asked about marine management techniques used in the past. The most commonly mentioned strategies used in the past included:

- Village-based regulation
- Banning of illegal fishing
- Banning outsiders fishing in village areas
- No fishing on Sundays

The most frequently cited recommendation for future marine management was establishing some form of village marine protected area (many of the villages are already part of a Community-based Fisheries Management Program). Banning illegal fishing was frequently cited, as was banning pollution and littering (particularly in Tutuila). Fishermen also mentioned the need to increase village collaboration and co-management with the government, develop size limits on fish caught, strengthen enforcement of current regulations, and promote greater community awareness. In Tutuila, the perceived need for management actions was greater than in Manu’a,
where many fishermen stated that they had managed their resources well in the past and could continue to do so in the future.

Analysis of additional topics and details of local practices and legends can be found in the full report.