

Shifting from a Species-based to an Ecosystem-based Approach to Managing Fisheries in the American Samoa Archipelago



What Is an Ecosystem Approach?

- It is holistic, adaptive and geographically specific
- It accounts for ecosystem knowledge and uncertainties
- It considers multiple external influences
- It strives to balance diverse social objectives

How Is the Change Taking Place?

Management measures for the insular fisheries in US exclusive economic zone (EEZ) waters surrounding American Samoa have been taken from the Bottomfish, Crustaceans, Precious Coral and Coral Reef Ecosystem Fishery Management Plans for the Western Pacific Region. They are now contained in a single document—the American Samoa Archipelago Fishery Ecosystem Plan (FEP). The Western Pacific Regional Fishery Management Council approved the FEP in December 2005.

The creation of an American Samoa Archipelago Regional Ecosystem Advisory Committee (REAC) and restructuring of the Council's Advisory Panel and Standing Committees have provided enhanced local knowledge and input into the management process.

Managers are increasing their understanding of a range of social, cultural, economic, biological, ecological and other scientific issues. This ecosystem knowledge will be used to manage fisheries in the American Samoa Archipelago.

What Are Ecosystem Issues?

- Appropriate management objectives
- Biological and trophic relationships
- Effects indicators and models
- Ecological effects of non-fishing activities on the marine environment
- Cultural and social components of the environment
- Multi-stakeholder involvement in management, including people who rely on the environment for their livelihood, social and traditional customs, cultural identity and nutrition

Historical Overview of American Samoa's Fisheries

Harvesting fish has been a way of life for Samoans since they first settled in the archipelago some 3,500 years ago. Today, fisheries continue to be an important part of the economy. They include a shoreline subsistence fishery, a recreational tournament fishery and artisanal fisheries for bottomfish and pelagic species.

Samoans developed specialized techniques for catching bottomfish from canoes long before the arrival of Europeans. Some bottomfish, such as giant trevally, are socially significant and were reserved for the matai (chiefs). By the 1950s, many of the small boats in American Samoa were equipped with outboard engines. Steel hooks were used instead of ones made of pearl shell, and monofilament fishing lines had replaced hand woven sennit lines. However, fishing remained largely a subsistence practice until the early 1970s when the bottomfish fishery developed into a commercial venture.

Lobsters are more expensive than fish in American Samoa. They are often served at important meals such as weddings, village council formal meetings, church functions, funerals, Christmas and New Year's Day. Formerly, lobsters were provided at the level of the village/family. Nowadays, they are mainly bought at the market, caught by professional/regular fishermen. Spiny lobster (*Panulirus penicillatus*) is the main species. It is speared at night near the outer slope by free divers targeting finfish.

Coral reef fishes and invertebrates are harvested in subsistence and small-scale commercial fisheries by various gear types including hook and line, spear gun, gillnets and throw nets. Historically, village-based resource management included enforcing village rules and regulations and using traditional methods to harvest palolo, atule and other fish. Over time, these practices have declined as the islands experience cultural, social and economic changes that alter the Samoan way of life.

American Samoa's Fisheries Today

Bottomfish Fishery

The bottomfish fishery of American Samoa consists of part-time vessels that typically jig overnight using skipjack tuna as bait. Most vessels are aluminum alia catamarans less than 30 feet in length. Many of the boats are outfitted with wooden hand reels, which are used for both trolling and bottomfish fishing. Because few boats carry ice, they typically fish within 20 miles of shore. In recent years, a growing number of fishermen have acquired larger (> 35 ft) vessels with capacity for chilling or freezing fish and a much greater fishing range. About two dozen boats participate in the fishery, landing an estimated 30,000 lbs of bottomfish annually in the territorial and federal waters combined. There are currently no federal permitting or reporting requirements for this fishery. Data is collected through creel surveys and dealer reports. The majority of the catch consists of emperors and snappers.

Crustacean Fishery

Federal permit and logbooks are required to harvest crustaceans in federal waters around American Samoa. None have been issued to date. All harvests of crustaceans are believed to occur in territorial waters. Annual landings of more than 2,000 lbs of spiny lobster have been recorded in recent years.

Coral Reef Fishery

The reef fish catch composition in American Samoa is dominated by six families: Acanthuridae, Serranidae, Holocentridae, Lutjanidae, Mugilidae, and Scaridae. Atule (*Selar crumenophthalmus*), a coastal pelagic species, seasonally accounts for a significant portion of the coral reef catch. The majority of these catches are believed to be from territorial waters so are not managed by the FEP. However, the ecosystem approach considers the interrelationship between fisheries and stocks in near-shore territorial and offshore federal waters. Many villages participate in community-based reef fisheries management and monitoring programs, which may include time and area closures.

Precious Corals Fishery

There are currently no defined precious coral beds or active precious coral fisheries in either federal or territorial waters around American Samoa. However, a fishery could develop in the future as precious coral species are known to exist in these waters.

Non-fishing Impacts on Marine Fisheries and Resources

- Pollution caused by land-based activities
- Habitat destruction associated with development
- Nutrient loading
- Marine debris
- Aquatic invasive species
- Hurricanes
- Global warming/coral bleaching/climate change
- Population increase

To become involved, contact the Council at (808) 522-8220 or at info.wpcouncil@noaa.gov or the Council's island coordinator in American Samoa at (684) 633-5102



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Ecosystem-based Management of Fisheries in the US Pacific Islands