



Options for Amending the Pelagics Fisheries Ecosystem Plan for an American Samoa Shallow-Set Swordfish Fishery

Introduction

The American Samoa longline fishery developed in the mid-1990s and matured at the beginning of this decade. Initially, it was primarily a nearshore coastal pelagic longline fishery dominated by small, outboard powered catamaran vessels, known locally as *alias*, using hand deployed and retrieved longline gear. From 2000 onwards, the fishery came to be dominated by conventional large mono-hulled longline vessels, 50 feet in length overall and longer, comparable in size to those in the Hawaii longline fisheries.

The advent of conventional large longline vessels meant that observers could be deployed to make observations of effort, catch, and protected species interactions in the American Samoa longline fishery. Extrapolation of observations made by NMFS observers between 2006 and 2010 suggested that an average of 33 green turtles interactions (hooked or entangled) occurred annually with the fishery, with a mortality rate estimated at 92 percent. In 2008, the Council took action to reduce this interaction rate.

The Council recommended, and NMFS implemented Amendment 5 to the Pelagics Fishery Ecosystem Plan (PFEP) that requires the fishery to modify the deployment of longline gear such that all hooks are set at least 100 m deep. Information summarized in a biological opinion (BiOp) and in PFEP Amendment 5 showed that most green sea turtle interactions occurred on the first and second hooks nearest to the float, likely in depths less than 100 m. The NMFS-issued BiOp indicated that if the fishery adopted the proposed gear modifications it would not jeopardize the continued existence of green sea turtles, or those of hawksbill, olive ridley, or leatherback turtles.

PFEP Amendment 5 prohibits any shallow-set longline fishing for swordfish, or other shallow water fishes by American Samoa longliners. Although swordfish are caught in the waters of the U.S. EEZ around American Samoa, and the proposed gear modifications would allow the retention of up to 10 swordfish, this species shows an anti-tropical distribution in terms of abundance and are often found at the confluence of cold and warm ocean currents where productivity is high. Spanish and Cook Islands longline vessels, for example, fish for swordfish predominantly in latitudes between 20 and 40 deg S, in high seas waters approximately 800 nm south of American Samoa.

Some American Samoa vessels have successfully targeted swordfish in these waters a few years ago. Unfortunately for the fishermen, transporting the fish to the lucrative U.S. East Coast swordfish market did not yield the expected financial returns. If marketing issues could be solved or become more favorable, American Samoa longliners may regain interest in targeting swordfish. However, when the PFEP gear modifications amendment takes effect, such fishing will not be allowed. Therefore, at the 150th Council Meeting, the Council directed staff to prepare a draft amendment to the PFEP that would specify regulations for an American Samoa shallow-set longline fishery, which would operate under the American Samoa longline limited entry program, to target swordfish and other pelagic species.

At the 151st Council Meeting, the Council considered different mechanisms for implementing a shallow-set longline fisheries including:

- Amending the Pelagics FEP to permit shallow-set longline fishing
- Using an Exempted Fishing Permit to allow for shallow-set swordfish fishing
- Establishing a Community Development Program (CDP) to allow American Samoa communities to be exempted from the deep-set requirements of the PFEP

At its 151st meeting the Council made the following recommendation: *regarding a potential American Samoa longline shallow-set fishery, the Council recommended staff prepare a draft FEP amendment to establish measures for an American Samoa shallow-set longline fishery.*

Purpose and need

The purpose of this paper is to consider various options to be included in an amendment to the Pelagics FEP to permit shallow-set swordfish fishing by American Samoa longline vessels. In particular, what requirements will be implemented to ensure that any American Samoa longline vessels making shallow sets will minimize the potential for interactions with sea turtles and seabirds. The need for the amendment is if the PFEP amendment requiring fishing at 100 m or deeper to reduce interactions with green sea turtles is approved, vessels will be unable to shallow-set their gear.

It should be noted that the neighboring Cook Islands is developing a shallow-set fishery for swordfish, although catches are currently modest (20-80 mt annually between 2006 and 2010). However, the Cook Islands Ministry of Marine Resources expects that this fishery will continue to develop and expand in partnership with overseas fishing companies based in China, Taiwan and Pago Pago. Moreover, Spanish longline vessels have caught annually between 730 and 4,200

mt on the high seas waters of the South Pacific, shipping this catch to Europe through French Polynesia

Options to permit the use of shallow-set longline gear in the American Samoa longline fishery.

1. No Action.

Pros	Cons
<p>Apart from some limited fishing activity in the past, a swordfish fishery has not developed in American Samoa in a minimally regulated environment. There currently appears to be little to no interest in developing such a fishery due to longstanding marketing and transportation barriers.</p> <p>If American Samoa longliners expressed interest in targeting swordfish in the future, various regulatory mechanisms exist to allow for such fishing. These were presented at the Council's 151st meeting in June 2011 and are listed above.</p> <p>Maintaining a deep-set fishery only would incur no additional monitoring and enforcement burdens, and minimize potential environmental risks.</p> <p>The PFEP Amendment 5 allows the retention of up to 10 swordfish per trip; more than is typically caught on a deep-set trip.</p>	<p>The American Samoa longline fishery would be unable to immediately target South Pacific swordfish were interest to develop in such a fishery and circumstances to change such that swordfish could be marketed and transported economically from Pago Pago.</p> <p>Foregoing the opportunity to fish for swordfish would likely not achieve optimum yield (OY) for this fishery, if interests were to develop, and marketing and transportation issues solved. Although, this also applies to other commercially marketable species currently caught by the albacore longline fishery that are under-utilized.</p>

2. Amend the PFEP to permit the use of shallow-set longline fishing to target swordfish without any sea turtle or seabird mitigation measures.

Pros	Cons
<p>Fishing for swordfish would occur at higher latitudes than is typical in the American Samoa longline fishery, which targets albacore. It is less likely that vessels would encounter green turtles at these latitudes, and this is the turtle most frequently caught by the American</p>	<p>Apart from some limited fishing activity in the past, a swordfish fishery has not developed in American Samoa in a minimally regulated environment. There appears to be little interest in developing such a fishery due to longstanding marketing and transportation</p>

Pros	Cons
<p data-bbox="219 279 516 310">Samoa longline fishery.</p> <p data-bbox="219 348 812 520">Seabird interactions are virtually unknown in the American Samoa longline fishery; a total of 73 trips and 2,180 sets at an average coverage rate of 10.9% over five years have one observed seabird interaction¹.</p> <p data-bbox="219 558 792 804">Vessels targeting swordfish at higher latitudes in the neighboring Cook islands report no seabird, sea turtles, or cetacean interactions². Vessels fishing from New Caledonia³ and EU (Spain)⁴ fishing in the same latitudes in 2010 report no turtle interactions and 4 seabird interactions (New Caledonia).</p>	<p data-bbox="831 279 938 310">barriers.</p> <p data-bbox="831 348 1421 625">Longline fishing at higher latitudes may interact with other sea turtle species. Mitigation measures in Hawaii have greatly reduced sea turtle interactions while allowing a successful swordfish fishery. The large circle hook and fish bait combination is now used in many longline fisheries world-wide as effective sea turtle mitigation measures.</p> <p data-bbox="831 663 1414 873">Although the seabird interactions have been virtually non-existent in this fishery, longline fishing for swordfish would be further south than the latitudes typically fished by American Samoa vessels and may encounter more seabirds at these higher latitudes.</p> <p data-bbox="831 911 1421 1121">The NEPA requirements for the development of a shallow-set longline fishery may entail the drafting of an Environmental Impact Statement to evaluate the impact of a shallow set fishery on sensitive species (turtles, seabirds, marine mammals, sharks).</p> <p data-bbox="831 1159 1421 1369">ESA requirements will necessitate the issuing of a biological opinion specific to a shallow set longline fishery, which is likely to be very conservative given the dearth of information on shallow-set longline fishing in the South Pacific by American Samoa longliners</p> <p data-bbox="831 1407 1356 1505">Implementing a shallow-set fishery incurs additional monitoring and enforcement burdens.</p>

¹ http://www.fpir.noaa.gov/OBS/obs_qtrly_annual_rprts.html

² Anon (2011a). Cook Islands, Annual Report to the Commission Part 1: Information on Fisheries, Research, and Statistics, WCPFC-SC7-AR/CCM-04

³ Anon (2011b). New Caledonia, Annual Report to the Commission Part 1: Information on Fisheries, Research, and Statistics, WCPFC-SC7-AR/CCM-14

⁴ Anon (2011c). European Union, Annual Report to the Commission Part 1: Information on Fisheries, Research, and Statistics, WCPFC-SC7-AR/CCM-05

3. Amend the PFEF to permit the use of shallow-set longline fishing to target swordfish employing the full suite of mitigation measures required for sea turtle in the Hawaii shallow set fishery, but without specific seabird mitigation measures.

Pros	Cons
<p>Mitigation measures in Hawaii have greatly reduced sea turtle interactions while allowing a successful swordfish fishery. The large circle hook and fish bait combination is now used in many longline fisheries world-wide as effective sea turtle mitigation measures.</p> <p>Seabird interactions are virtually unknown in the American Samoa longline fishery; a total of 73 trips and 2,180 sets at an average coverage rate of 10.9% over five years have one observed seabird interaction.</p> <p>Vessels targeting swordfish at higher latitudes in the neighboring Cook islands report no seabird, sea turtles, or cetacean interactions.</p>	<p>Apart from some limited fishing activity in the past, a swordfish fishery has not developed in American Samoa in a minimally regulated environment. There appears to be little interest in developing such a fishery due to longstanding marketing and transportation barriers.</p> <p>Although the seabird interactions have been virtually non-existent in this fishery, longline fishing for swordfish would be further south than the latitudes typically fished by American Samoa vessels and may encounter more seabirds at these higher latitudes.</p> <p>The NEPA requirements for the development of a shallow-set longline fishery may entail the drafting of an Environmental Impact Statement to evaluate the impact of a shallow set fishery on sensitive species (turtles, seabirds, marine mammals, sharks).</p> <p>ESA requirements will necessitate the issuing of a biological opinion specific to a shallow set longline fishery, which is likely to be very conservative given the dearth of information on shallow-set longline fishing in the South Pacific by American Samoa longliners</p> <p>Implementing a shallow-set fishery incurs additional monitoring and enforcement burdens.</p>

4. Amend the PFEF to permit the use of shallow set longline fishing to target swordfish employing the full suite of mitigation measures required for sea turtle mitigation and including seabird mitigation measures required in Hawaii.

Pros	Cons
<p>Mitigation measures in Hawaii have greatly reduced sea turtle interactions while allowing a successful swordfish fishery. The large circle hook and fish bait combination is now used in many longline fisheries world-wide as effective sea turtle mitigation measures.</p> <p>Although the seabird interaction rate has been virtually non-existent in this fishery, longline fishing for swordfish would be further south than the latitudes typically fished by American Samoa vessels and may encounter more seabirds at these higher latitudes.</p>	<p>Apart from some limited fishing activity in the past, a swordfish fishery has not developed in American Samoa in a minimally regulated environment. There appears to be little interest in developing such a fishery due to longstanding marketing and transportation barriers.</p> <p>Seabird interactions are virtually unknown in the American Samoa longline fishery; a total of 73 trips and 2,180 sets at an average coverage rate of 10.9% over five years have one observed seabird interaction. Vessels targeting swordfish at higher latitudes in the neighboring Cook islands report no seabird, sea turtles or cetacean interactions.</p> <p>There are no indications that the seabird mitigation measures employed by the Hawaii longline fishery will be effective with South Pacific seabird species.</p> <p>The NEPA requirements for the development of a shallow-set longline fishery may entail the drafting of an Environmental Impact Statement to evaluate the impact of a shallow set fishery on sensitive species (turtles, seabirds, marine mammals, sharks).</p> <p>ESA requirements will necessitate the issuing of a biological opinion specific to a shallow set longline fishery, which is likely to be very conservative given the dearth of information on shallow-set longline fishing in the South Pacific by American Samoa longliners</p> <p>Implementing a shallow-set fishery incur additional monitoring and enforcement burdens.</p>

5. Amend the PFEF to permit the use of shallow set longline fishing to target swordfish employing sea turtles mitigation measures and seabird mitigation measures required in Hawaii, and include spatial restrictions on shallow set fishery, e.g., exclude fishing from within the U.S. EEZ around American Samoa and permit fishing south of 20 deg South.

Pros	Cons
<p>Limiting shallow set fishing below 20 deg S may reduce interactions with green sea turtles that have primarily occurred in the EEZ around American Samoa</p> <p>Mitigation measures in Hawaii have greatly reduced sea turtle interactions while allowing a successful swordfish fishery. The large hook and fish bait combination is now widely accepted world-wide as effective sea turtle mitigation measures.</p> <p>Although the seabird interaction rate has been virtually non-existent in this fishery, longline fishing for swordfish would be further south than the latitudes typically fished by American Samoa vessels and may encounter more seabirds at these higher latitudes.</p>	<p>Apart from some limited fishing activity in the past, a swordfish fishery has not developed in American Samoa in a minimally regulated environment. There appears to be little interest in developing such a fishery due to longstanding marketing and transportation barriers.</p> <p>Spatial imitation of fishing may restrict the fishery if swordfish abundance increases seasonally within lower latitudes including the U.S. EEZ around American Samoa.</p> <p>Seabird interactions are virtually unknown in the American Samoa longline fishery; a total of 73 trips and 2,180 sets at an average coverage rate of 10.9% over five years have one observed seabird interaction. Vessels targeting swordfish at higher latitudes in the neighboring Cook islands report no seabird, sea turtles or cetacean interactions.</p> <p>There are no indications that the seabird mitigation measures employed by the Hawaii longline fishery will be effective with South Pacific seabird species.</p> <p>The NEPA requirements for the development of a shallow-set longline fishery may entail the drafting of an Environmental Impact Statement to evaluate the impact of a shallow set fishery on sensitive species (turtles, seabirds, marine mammals, sharks).</p> <p>ESA requirements will necessitate the issuing of a biological opinion specific to a shallow set longline fishery, which is likely to be very conservative given the dearth of information on shallow-set longline fishing in the South Pacific by American Samoa longliners</p>

Pros	Cons
	Implementing a shallow-set fishery only incurs additional monitoring and enforcement burdens, and minimize potential environmental risks.

Council Action

At the 152nd meeting the Council may wish to consider:

- **Whether to proceed forward with an amendment given no indication of interest of fishing form swordfish by the American Samoa fleet at this time.**
- **If the Council wishes to proceed with an amendment then it may consider a preferred alternative for a shallow-set swordfish longline fishery in American Samoa from the range presented here, or suggest other alternatives**
- **Recognizing the lack of information for the development of an amendment document, the Council may wish to encourage interested persons to apply for an Exempted Fishing Permit while the amendment is being drafted, and which could provide data inputs for the amendment document. Similarly, the Council may also wish to encourage cooperative research projects to be conducted in conjunction with EFPs to test measures such as hook and bait combinations.**