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FINDING OF NO SIGNIFICANT IMPACT

Issuance of a Permit to Authorize the Culture and Harvest of a Managed Coral Reef Fish Species (*Seriola rivoliana*) in Federal Waters off the West Coast of the Island of Hawaii, State of Hawaii

July 6, 2011

Introduction

This Finding of No Significant Impact (FONSI) was prepared according to the guidelines established in National Marine Fisheries Service (NMFS) Instruction 30-124-1 (July 22, 2005) and the requirements set forth in National Oceanic and Atmospheric Administration (NOAA) Administrative Order 216-6 (NAO 216-6, May 20, 1999), concerning compliance with the National Environmental Policy Act (NEPA). This FONSI is supported by the environmental impact analysis prepared in accordance with the requirements of NEPA and documented in the attached environmental assessment (EA).

Proposed Action

NMFS's Pacific Islands Regional Office is proposing to issue a Special Coral Reef Ecosystem Fishing Permit (SCREFP) to Kona Blue Water Farms (KBWF) for one year in accordance with the Hawaii Fishery Ecosystem Plan and consistent with implementing federal regulations (50 CFR §665.224) pertaining to management of coral reef ecosystem fisheries. The permit will authorize the culture and harvest of a Hawaii coral reef ecosystem Management Unit Species (MUS) using a limited capacity (21 ft in diameter;132 m^3) untethered brass-link mesh cage (CuPod) deployed in Federal waters (generally from 3-150 nautical miles (nm) offshore) west of the Island of Hawaii. The proposed activity will allow the applicant to test the feasibility of raising marine fish species using a new gear-type (towed, floating pen) in the U.S. Exclusive Economic Zone (U.S. EEZ). Conditions of the permit are listed in section 5.1.1.

The applicant proposes to culture 2,000 juveniles obtained from a local fish hatchery that are the first generation offspring of the native Hawaii coral reef MUS, *Seriola rivoliana* (marketed as "Kona Kampachi®"). The CuPod will be deployed using a U.S. Coast Guard approved tender vessel that will maintain a controlled drift in the EEZ between 10,000 and 12,000 feet deep.

Section 1.2 of the EA describes the proposed activity in more detail.

Coordination and Public Involvement

The application for the proposed permit was coordinated with other agencies listed in section 6 of the EA. The proposed permit was also discussed by the Council at its 150th meeting in Pago Pago, American Samoa on March 7-10, 2011. Although the activities covered by the proposed permit are of limited impact and duration, in recognition of the fact that there is interest in the topic of ocean aquaculture, NMFS also solicited public comments on the draft EA from March 17-27, 2011.

NMFS received 41 unique responses (and a single response duplicated several thousand times in an email campaign) on the draft EA and, as appropriate, responded by incorporating additional information and analysis in the EA. A discussion of the comments received and responses can be found in section 7.1.3 of the EA.

Significance Analysis

NAO 216-6 contains criteria for determining the significance of the environmental impacts of a proposed action. In addition, the Council on Environmental Quality's (CEQ) regulations at 40 CFR 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant in making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?

No. The sustainability of the target species, *Seriola rivoliana* will not be affected by the proposed action because the affected resource is from hatchery stock which will be grown out in and harvested from a CuPod at sea. Therefore, no wild stock of this or any Hawaii coral reef ecosystem species would be harvested under this permit. The CuPod will be stocked at a relatively low density and because it will be in constant motion, constantly flushed with ocean water. The target stocks in the CuPod will be monitored closely by the permittee in coordination with aquatic veterinarians. Therefore, disease is not expected to affect the target stock in the pen (EA, section 4.2).

While there is the potential for fish escapes in any aquaculture project, the culture, harvesting, and transport of the *Seriola rivoliana* will be done in a manner that minimizes the risks of accidental release of the target species (EA, section 4.1). If accidental escapes occur, there is expected to be a high probability of predation from wild fish that may be attracted to the floating pen. Additionally, while *Seriola rivoliana* is a species native to Hawaii and captive stock is cultured from wild brood stock, the project will be conducted away from the near-shore reef habitat of this species and post escape survival and settlement is unlikely.

2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?

No. No large adverse effects will occur to non-target species or stock complexes. The CuPod may act as a fish aggregating device (FAD), just like any other floating object in the pelagic environment, and may attract non-target species to congregate underneath. However, the effects of the pen as a FAD are not expected to be large or adverse to the migratory habits of pelagic fishes because the pen is relatively small and the project is of limited duration. The permittee will be collecting information on any aggregations that form under the pen. Additionally, although non-target species may be attracted to unconsumed fish feed, the permittee proposes use of a specially formulated, pelletized ration that will be fed to fish until near satiation to

minimize wastage so that little uneaten feed is released into the environment (EA, section 4.9.2.4).

One concern about ocean aquaculture is the potential for concentrated net pen operations to serve as a vector for disease transmittal to wild stocks. Due to the small size of the pen, relatively low density of target species being grown out and the constant moving and flushing of the pen, disease of the pen-reared stock and transmission to other fishes is not expected to occur. However, if daily monitoring finds a disease problem, and disease treatments are required, NMFS would be notified and treatments would be done under the advice of a veterinarian and only under an approved Investigational New Animal Drug permit from the Food and Drug Administration (EA, section 4.3).

3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in Fishery Management Plans?

No portion of the proposed activity is expected to result in substantial damage to the ocean and coastal habitats or to essential fish habitat. Essential fish habitat within the U.S. EEZ waters around Hawaii is described in the EA in section 4.4.1. The use of the 132 m^3 CuPod pen to culture fish is not expected to result in damages to the ocean or coastal environments because the project is small in size and limited in duration. As deployed the pen will be submerged approximately 25 feet below the surface of the water and will not come in contact with the benthic environment or coral reefs. The towing setup for the Cupod is designed to be redundant so that failure of one part of the setup would not result in the loss of the pen. Operational protocols and practices to prevent the loss of the pen are described in section 1.3 of the EA.

Discharges from the pen are expected to consist of a relatively small amount of excess feed and animal waste. Food discharges are anticipated to be minimal as food quantities will be adjusted to the nutritional requirements of the fish in the pen. Waste products from the fish and any excess feed are expected to be diluted quickly in the open ocean environment (EA, section 4.11). If disease treatments are required, NMFS would be notified and treatments would be done under the advice of a veterinarian and only under an approved Investigational New Animal Drug permit from the Food and Drug Administration (EA, section 4.3).

4) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

No. The proposed action is not expected to adversely impact public health or safety because it is a relatively small operation, conducted in accordance with U.S. Coast Guard requirements for safety-at-sea for marine vessels and located at a distance from busy coastal areas. Lighting on the vessel and pen will be in accordance with the International Regulations for Preventing Collisions at Sea, 1972 (1972 COLREGS) and all applicable U.S. Coast Guard requirements (EA, section 1.3.2) so as to prevent collisions with all other vessels also using and transiting the action area.

5) *Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

No. There are no adverse impacts that are likely to occur involving protected resources including marine mammals, sea turtles, seabirds, and there is no evidence that the proposed pen, stocking, grow-out, harvest, and transport associated with the permit will have adverse effects on protected resources for these reasons: the pen is constructed with rigid metal chain-link enclosure panels engineered to minimize entanglements and fish escapes; the pen is not anchored and the towing bridle is short and easily monitored so there is limited potential for entanglement; the pen will be moved primarily through passive drift or limited sail or motor power at relatively slow speeds, so collisions with protected species are not expected; the pen will be maintained below sea level so it is not expected to attract seabirds; harvest of the finfish will take place inside of the pen so other marine wildlife would not be adversely affected by this fishery activity; there will be nominal vessel traffic movement associated with the operation. Vessel operations are described as being needed intermittently for restocking the tender vessel, rotating the crew, and one trip to replenish feed. Potential impacts to protected species are considered in the EA in section 4.9.

The EA contains the permittee's Marine Protected Species Monitoring and Reporting plan as Appendix D. The permit conditions require the operators to note and report any interactions with protected resources. If unanticipated interactions are reported, NMFS will coordinate with the permittee to ensure proper handling of the animal at sea and shall take action consistent with the Endangered Species Act to avoid and reduce the likelihood of future interactions. Because the proposed activity will not occur in or near designated critical habitat, the activity is not expected to affect critical habitat (EA, section 4.9.2.5).

The permit application was coordinated with the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the State of Hawaii Department of Land and Natural Resources, Division of Aquatic Resources.

6) *Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?*

The culture and harvest of the pen-cultured fish will not affect biodiversity because no other species will be directly harvested under the permit. No large or adverse impacts are anticipated in terms of reductions in water quality or impacts on other wildlife that might result in a change in biodiversity or ecosystem function. While large-scale net pen operations in near-shore waters have resulted in impacts to water and substrate quality, the permitted activity is of such minimal size, stocking density, and duration that no substantial impacts to ecosystem functions are expected. Furthermore, open ocean flushing, water currents, and extreme water depths are features of the environment that will help dilute any wastes or excess feed (EA, section 4.11).

7) *Are significant social or economic impacts interrelated with natural or physical environmental effects?*

No. The permit covers a relatively minor activity for a limited duration. The culture and harvest of finfish in a limited capacity pen maintained at sea with operations as described in the EA is not expected to have environmental effects that result in large adverse social or economic impacts. The potential economic impacts of the project were considered in the EA (section 4.8), and there were no large adverse effects to other fisheries or to markets found. This is because the project is for test purposes, the species is not currently harvested from the wild due to concerns about ciguatera, and because the project will use already established market channels to sell the harvested fish. Thus, the harvest will not compete with sales by other fishermen. The project will not develop a large number of jobs as existing company staff will be used.

8) *Are the effects on the quality of the human environment likely to be highly controversial?*

No. The potential impacts of the project were analyzed in the EA and much of the information used in evaluating these impacts was developed over many years from cage and net-pen culture projects located in coastal waters. A few of the recurring concerns are the potential impacts to water quality, buildup of waste products, disease transmission, and the use of chemicals to treat diseases and biofouling. The analysis in the EA did not reveal that any of these issues was expected with the current project. The permit covers the culture and harvest of finfish in a relatively small pen in an area located away from coastal areas. The pen will be in oceanic areas that will allow flushing of the water and any effluents in terms of fish waste products will be diluted quickly. The amount of fish proposed to be cultured under the proposed activity (approximately 8,000 lb) is significantly below the 100,000 pound limit that requires a National Pollutant Discharge Elimination System (NPDES) permit (40 CFR 122.24c). Application of feeding will be controlled to reduce waste, and the pen is not expected to require treatment for biofouling beyond occasional manual scrubbing. The low stocking density and flushing water environment are expected to reduce the potential for fish diseases and the need to treat fish. However, permit conditions require the permittee to notify NMFS PIRO in the event of a disease problem, and before any treatment is preformed. Permit conditions are contained in section 5.1.1 of the EA.

9) *Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?*

No. The activities covered by the permit do not have the potential to result in impacts to important or unique ecological areas. Vessels will transit through portions of the Hawaiian Humpback National Marine Sanctuary and a small portion of Kaloko-Honokohau National Historic Park when leaving and returning to port (EA, section 4.13), but the number of transits will be relatively small, and the vessels will not be moving at a high rate of speed. Most transits will be by smaller vessels transporting personnel and supplies. Gear loss is not expected to occur with the proposed activity and floats will allow retrieval if there were to be a separation.

10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

No. The effects on the human environment are not highly uncertain or unknown because the pen is a commercially available gear of limited capacity (2,000 fish) that has been commercially deployed in other areas. There are no large risks involved in permitting the activity with the existing level of understanding of the operations and potential impacts to the environment.

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

No. The proposed activity was considered in terms of other activities occurring in the same area, and in consideration of other fisheries and was not found to interact with other actions in a manner that will result in significant impacts. This project will not cause gear conflicts or adversely affect navigation because it is relatively small, located in offshore waters, and the pen will be under the control of the tender vehicle at all times. The project is not expected to contribute to fishery or natural mortality of any wild fish stocks.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

No. Vessels will transit through portions of the Hawaiian Humpback National Marine Sanctuary and a small portion of Kaloko-Honokohau National Historic Park when leaving and returning to port (EA, section 4.13). The proposed activity does not have the potential to cause effects to historic properties, assuming historic properties are present. The proposed activity is expected to involve a limited number of small support vessels entering and exiting Honokohau Small Boat Harbor on a weekly basis to deliver provisions and remove and land product and waste. This activity would not involve a material increase in vessel traffic or a material change in harbor operations. The vessels to be used are currently operating out of Honokohau Small Boat Harbor in support of the applicant's aquaculture facilities in state waters. In addition, the proposed activity does not involve the destruction, modification, or alteration of land, substrate, or habitat, or other properties. The towed CuPod and tender vessel would remain at least 3 nautical miles from shore when in operation and would not introduce visual, atmospheric, or audible elements that might affect the features of any historic property.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

No. The pen was constructed on land in Hawaii, the fingerling stock is from a local hatchery and is from native broodstock, and the pen will remain in waters near Hawaii so no non-indigenous organisms will be introduced to the environment.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

No. The culture of *Seriola rivoliana* in a towed CuPod at sea is a novel commercial enterprise for Hawaii but the company and others have been culturing fin fish in tanks and cages for many years. The approved Hawaii FEP and NMFS regulation specifically provide for the rare circumstance where, as here, an applicant demonstrating the requisite experience may request the use of an unapproved gear type to harvest MUS. Each such application must undergo environmental review and coordination, and approval is by no means assured. The current application is a one-time permit limited in both scope and duration (EA, section 5.1.1). There is no reason to conclude that approval of the current permit would have a cumulative effect of speeding up the approval of larger-scale projects. Each application would need to be coordinated in accordance with the permit process, and would need to comply with all applicable laws including project-specific environmental review. Approval of the proposed activity is consistent with NOAA's aquaculture policy, which seeks to encourage and foster sustainable aquaculture development in harmony with healthy, productive, and resilient marine ecosystems, compatible with other uses of the marine environment, and consistent with the National Ocean Policy. NMFS has previously issued Exempted Fishing Permits for aquaculture research activities and has helped fund off-shore aquaculture research projects.

15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

No. The permit is in compliance with requirements of Federal law and the proposal has undergone intergovernmental review to ensure that it will not threaten a violation of these environmental protection laws and requirements. A summary of compliance is included (EA, section 5.1).

16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target or non-target species?

No. The permit will allow the grow-out and harvest of a single species of indigenous *Seriola rivoliana*. The pen will contain the cultured fish. Stocking, maintenance, harvest, and transport of the fish have been considered and there are no risks of substantial adverse effects on target or non-target species. Wild fish species are not expected to be adversely affected by the culture operation taking place in accordance with the permit that is of limited capacity (2000 fingerlings) in a 132 m^3 CuPod.

Other Findings

NMFS also considered the effects of the project on climate change and climate change impacts on the feasibility of the project. Because the project will involve passive drifting and nominal use of three marine sail and motor vessels for occasional stocking, transport, and placement of the pen, the project will not result in substantial cumulative annual emissions of greenhouse gases such that additional evaluations must take place. The project will be at sea and floating so sea level change is not a factor to consider. The project is of short-term, limited duration so that the survival and growth of the fish will not be affected by other changes brought about by climate

change that have the potential to affect reproduction, survival, distribution of wild fish and prey and offspring.

The permit will not result in adverse environmental impacts that will have a large or disproportionate adverse impact on environmental justice populations.

Determination

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the Issuance of a Permit to Authorize the Culture and Harvest of a Managed Coral Reef Fish Species (*Seriola rivoliana*) in Federal Waters off the West Coast of the Island of Hawaii, State of Hawaii and dated July 6, 2011, I have determined that the proposed action will not significantly impact the quality of the human environment as described above and in the supporting EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.

Michael D. Tosatto Regional Administrator	7/6/11 Date