

**FINAL SUPPLEMENTAL INFORMATION REPORT**  
**TO THE 2009 FINAL PROGRAMMATIC ENVIRONMENTAL**  
**IMPACT STATEMENT (FISHERY MANAGEMENT PLAN**  
**FOR OFFSHORE MARINE AQUACULTURE IN THE**  
**GULF OF MEXICO)**

**July 2015**

## Table of Contents

1. Introduction .....	3
2. Background.....	3
3. Purpose and Scope of the Supplemental Information Report.....	4
4. Changes to the Action (Since 2009).....	5
5. Consideration of New Circumstances and Information .....	6
5.1 Environmental Effects.....	7
5.2 Disease and Escapes.....	9
5.3 Feeds.....	11
5.4 Socioeconomic Impacts.....	12
5.5 Other Aspects of the Affected Environment .....	12
6. Conclusions/Decision .....	16
7. Preparers and Persons Consulted.....	17
8. References .....	18

## 1. Introduction

In 2009, the National Marine Fisheries Service (NMFS) issued a Final Programmatic Environmental Impact Statement for the Fishery Management Plan for Regulating Offshore Marine Aquaculture in the Gulf of Mexico (Aquaculture FMP/FPEIS) pursuant to the National Environmental Policy Act (NEPA). In 2014, NMFS received public comment requesting that additional NEPA analysis be conducted due to the passage of time since the Aquaculture FMP/FPEIS was finalized. In response, NMFS created a draft Supplemental Information Report (SIR) to determine whether there is a need for supplemental NEPA analysis, specific to the passage of time (2009 to present), based on any changes in the proposed action, any significant new circumstances, or any significant new information that is relevant to environmental concerns which bears on the proposed action or its impacts. NMFS requested public comment on the draft SIR on August 28, 2014 (79 FR 51424). NMFS received several public comments on the draft SIR, some which stated that NMFS should complete an additional Supplement to the 2009 FMP/FPEIS, while others supported the adoption of the draft SIR and its conclusions. NMFS considered these comments and decided to move forward with completing a final SIR.

## 2. Background

In 2009, the Council submitted the Aquaculture FMP/FPEIS, and its associated rulemaking, to NMFS for agency review under procedures of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). On September 3, 2009, the Aquaculture FMP/FPEIS entered into effect by operation of law. On that same date NOAA announced that it would develop a new National Aquaculture Policy that would provide context for the Aquaculture FMP/FPEIS. On June 9, 2011, NOAA announced the release of the final Marine Aquaculture Policy and the Agency's intentions to move forward with rulemaking for the Aquaculture FMP/FPEIS. The purpose of the Aquaculture FMP/FPEIS is to establish a comprehensive permitting and regulatory framework to manage the development of an environmentally sound and economically sustainable offshore aquaculture industry in federal waters. Upon implementation, it is estimated that up to 20 offshore aquaculture operations could be permitted in the Gulf, with an estimated annual production of up to 64 million pounds.

On April 20, 2010, an explosion occurred on the Deepwater Horizon (DWH) Macondo 252 oil rig, resulting in the release of millions of barrels of oil into the Gulf. In addition, Corexit 9500A dispersant was applied as part of the effort to constrain the spill. In January 2013, NMFS published a Notice of Intent (78 FR 5403) to prepare a draft Supplement to the Aquaculture FMP/FPEIS (DSFPEIS) in order to consider new circumstances and information arising from the DWH oil spill. The DSFPEIS was made available for public comment in February 2014 (79 FR 9199).<sup>1</sup> During the public comment

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<sup>1</sup> On February 28, 2014 a second Federal Register Notice was published announcing an extension of the comment period (79 FR 11428).

period, NMFS received several comments outside of the scope of the DWH oil spill. In general, these non-DWH related comments suggested that due to the passage of time (2009-present) the information in the original Aquaculture FMP/FPEIS was outdated and that additional NEPA analysis was necessary. The following is a summary of those comments:

- The NEPA requires the agency to supplement the Aquaculture FMP/FPEIS with all of the recent environmentally significant developments in fish farming.
- The Aquaculture FMP/FPEIS is dated, and fails to include the most recent information relevant to environmental and socioeconomic concerns related to fish farming.
- New studies shed light on the environmental impacts of open water finfish farming that scientists did not fully understand when the Aquaculture FMP/FPEIS was finalized.
- An updated analysis of aquaculture's water quality and benthic effects is vital so that the public and NMFS can have the opportunity to reassess the sufficiency of the plan's limited mitigation measures.
- Aquaculture can harm surrounding wild fish populations because of the increased risk of escapes and disease.
- Traditional means for preventing overfishing of forage fish are insufficient and NMFS needs to evaluate more protective measures to protect forage fish populations such as caps on fishmeal and fish-oil use in feed for farmed fish.
- New circumstances related to the socioeconomics of offshore aquaculture, not directly related to the oil spill, should be assessed. Perhaps most notably, a discussion on the plan's impacts on fishermen in fisheries managed under Individual Fishing Quota (IFQ) programs should be included.
- Substantial new data can be used to evaluate the socioeconomic impacts from aquaculture of red snapper.

NMFS published a final Supplement to the Aquaculture FMP/FPEIS (FSFPEIS) on July 2, 2015 (80 FR 38199).

### **3. Purpose and Scope of the Supplemental Information Report**

This final SIR evaluates whether changes to the proposed action or new circumstances or information require NMFS to supplement its original Aquaculture FMP/FPEIS due to the passage of time (2009-present) in accordance with 40 CFR 1502.9(c). In making a determination on the need for additional analysis under NEPA, NMFS has considered Council on Environmental Quality (CEQ) regulations. The CEQ regulations state “[a]gencies shall prepare supplements to either draft or final environmental impact statements if:

- (i) the agency makes *substantial* changes in the proposed action that are relevant to environmental concerns; or

- (ii) there are *significant* new circumstances or information relevant to environmental concerns *and* bearing on the proposed action or its impacts.” (emphasis added) (40 C.F.R. § 1502.9(c)).

This final SIR analyzes the information contained in recent scientific literature, reports, and information available to NMFS to determine whether a new Supplemental Environmental Impact Statement (SEIS) to the original Aquaculture FMP/FPEIS should be prepared to account for the passage of time (2009-present). For consideration of new circumstances and information, NMFS consulted, among other sources, agency files, subject matter experts, technical reports and peer-reviewed publications.

The following sections discuss each of the CEQ factors that may trigger the need to prepare an SEIS: Changes to the Action, New Circumstances, and New Information.

#### **4. Changes to the Action (Since 2009)**

Since the Aquaculture FMP/FPEIS was finalized in 2009, several changes were made to the proposed regulations. In February 2013, these changes to the proposed regulations were deemed by the Gulf of Mexico Fishery Management Council (Council) as necessary and appropriate to carry out the actions in the Aquaculture FMP/FPEIS; however, none of these regulatory changes substantially modify the actions or preferred alternatives analyzed in the Aquaculture FMP/FPEIS. These changes include: specification of gear types for aquaculture operations, definitions of key terms, additional documentation required for permit applications, language that requires that the permit number be displayed on buoys, language requiring the permittee to certify that they will remove animals and systems if permit conditions are violated, language requiring the applicant to document that they have established a standby trust fund for the assurance bond requirement, and language which authorizes NMFS ‘to enter into cooperative agreements or delegate inspection authority to any State, to contract with any non- Federal Government entities, or to require permittees to contract a non-Federal Government third party approved by the Regional Administrator, if the Regional Administrator chooses to accept the third party inspection results’ in order to conduct inspections of offshore aquaculture operations as well as genetic testing of cultured animals. Language was also added which prohibits the permittee from acting as the non-Federal Government third party during annual inspections and genetic testing.

NMFS published a proposed rule to implement the Aquaculture FMP/FPEIS on August 28, 2014. After considering public comments on the proposed rule, further internal review, and consultation with the Council, NMFS is considering several changes to the proposed rule. These changes are consistent with the requirements specified in the FMP and are fully explained in the preamble of the final rule.

NMFS received several comments which asserted that the ability to use a third party to conduct inspections will ‘dramatically change the program’ since the Aquaculture FMP/FPEIS states that these inspections will be conducted by NMFS employees and authorized officers.<sup>2</sup> However, NMFS Regional Administrator must approve any third party that will conduct inspections to ensure that protocols and procedures are necessary and appropriate. Using a third party to conduct inspections is common in the aquaculture industry and will not alter any substantive requirements of the Aquaculture FMP/FPEIS. For example, the state of Maine allows permittees to hire a third party contractor to conduct site inspections of facilities, genetic fingerprinting and disease testing. NMFS considers this change, as well as the other changes to the proposed regulations to be minor and still within the scope and intent of the original Aquaculture FMP/FPEIS.

## **5. Consideration of New Circumstances and Information**

This section presents circumstances and information that are new or that have been updated since the analysis conducted in the original Aquaculture FMP/FPEIS, where those circumstances or that information are relevant to environmental concerns and bear on the proposed action or its impacts.

### New Circumstances

The April 2010 DWH oil spill represents “significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”<sup>3</sup> As mentioned in Section 2, a DSFPEIS was prepared to consider new circumstances and information arising from the DWH oil spill. The public comment on the DSFPEIS ended on April 4, 2014 and NMFS published a FSFPEIS on July 2, 2015 (80 FR 38199).

### New Information

As mentioned in Section 2, NMFS received several comments suggesting that the agency consider new environmental and socioeconomic concerns that have come to light since the original Aquaculture FMP/FPEIS was finalized. These concerns relate to environmental effects, disease and escapes, use of fishmeal and fish oil in feeds, and socioeconomic impacts. New information related to these topics is analyzed in the following sections.

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<sup>2</sup> Page 44 of the 2009 FMP/FPEIS states: ‘A permittee must provide NOAA Fisheries Service employees and authorized officers access to the aquaculture facility to conduct inspections or sampling necessary to determine compliance with the applicable regulations (e.g., sample cultured organism to determine genetic lineage) relating to aquaculture in the Gulf EEZ.’

<sup>3</sup> 40 CFR 1502.9 (c)(1)(i-ii)

## 5.1 Environmental Effects

One commenter cited several studies on the environmental effects of aquaculture, suggesting that these studies represent ‘significant new environmental information’ that has come to light (since the original Aquaculture FMP/FPEIS was finalized) and should be evaluated.

**Analysis and Conclusion:** Recently, NOAA published a technical memo entitled ‘Marine Cage Culture and the Environment: Twenty-first Century Science Informing a Sustainable Industry’ (Price and Morris 2013), which provides a comprehensive review of over 420 studies conducted from 2000-2012 regarding the predominant environmental considerations for offshore aquaculture, including water quality, benthic communities, sediment chemistry, marine life and sensitive habitats. Key findings are summarized below.

### *Water Quality*

- Within the past 20 years, improvements in feed formulation and feeding efficiency have led to decreased nutrient loading and acceptable water quality in and near farms. As a result, significant enrichment to the water column at offshore farms is generally not detected.
- When measurable effects on water quality are detected, they are typically confined to 30 meters when farms are sited in well-flushed areas.

### *Benthic Impacts*

- Excess feed and fish waste may alter the chemical processes of decomposition and nutrient assimilation. However, at well-managed farm sites benthic impacts are typically confined to within 100 meters of the cages and benthic chemical recovery is often rapid following harvest. In contrast, heavily impacted farm sites may have anaerobic conditions persisting in the sediment and extending hundreds of meters beyond the farm perimeter; however, such impacts can be avoided by placing farms in deep, well flushed areas.
- Farm discharges may be quickly absorbed as nutrients for wild marine organisms, thus minimizing any build-up in the benthos. In other locations, deposition beneath cages will have ephemeral effects but may need fallowing periods ranging from a few months to one or two years for natural processes to absorb nutrients and recover the benthos.
- Within an adaptive management framework and proper siting, a monitoring program can be used to adjust farm management to avert serious or persistent impacts to the benthos.

### *Marine Organisms*

- At appropriately-sited and well-managed farms, natural processes can be sufficient to assimilate nutrients. In nutrient limited marine environments these inputs may even fertilize marine food webs, boosting overall productivity.
- At some farm sites, a phytoplankton response to nutrient loading was reported, but generally this is a low risk and causal linkages to algal blooms are not evident.
- Under light organic enrichment, an increase in benthic species abundance and biodiversity may

be observed and can be a net benefit to the community. At moderately impacted farms, effects may extend to 100 meters beyond the farm edge. In enriched sediments, the benthic species composition and diversity shift toward tolerant generalists like capitellid polychaetes.

- The excess food and waste released from fish cages may be food for wild fish, especially benthic feeders. Cages may also provide shelter and foraging habitat for wild fish.
- At modern fish farms, impacts to predatory sharks and marine mammals are being minimized with improved net technologies and removal of dead fish from cages to prevent predation on cultured fish.
- Siting away from known aggregation sites and installing rigid predator exclusion nets are also effective at preventing negative impacts to cultured fish, farm structures and marine predators.
- Keeping lines taut and the water free of debris are effective at minimizing or eliminating conflict with marine mammals and turtles.
- If farms are located upstream of sensitive habitats, careful monitoring should be implemented for early detection of any perturbation.

### ***Chemicals and Drugs***

- Over the past 20 years, the use of antibiotics, therapeutants and antifoulants at marine fish farms has declined up to 95%, resulting in decreased potential for secondary harmful effects of these chemicals on the marine environment.
- Vaccination, improvements in fish husbandry and best management practices are proven alternatives for achieving and maintaining fish health.

Price and Morris (2013) conclude that: 1) siting of farms in well-flushed environments is key to reducing potential environmental impacts and protecting water quality; 2) beyond good site selection, fallowing and/or integrated multi-trophic aquaculture are two management tools that can be used to further reduce the potential environmental effects of marine fish farms; and, 3) decreasing environmental risk from aquaculture appears to be driven by prudent siting of operations outside of shallow, enclosed, coastal and nearshore waters lacking dispersive current regimes, coupled with use of modern feed formulations and good aquatic health and farm management practices. These observations suggest that ‘minimal or acceptable environmental effects is possible in many ecosystems’ as long as proper safeguards exist to minimize nutrient and chemical discharge and immediate and cumulative impacts are managed.

In regard to managing potential impacts, the Aquaculture FMP/FPEIS includes requirements and conditions for siting offshore aquaculture operations (Action 6) as well as various monitoring, recordkeeping and reporting requirements (Actions 2 and 8) to minimize effects on the environment, including:

- Prohibiting siting facilities in marine protected areas and marine reserves, Habitat Areas of Particular Concern, Special Management Zones, permitted artificial reef areas and coral reef areas under the Council’s authority.
- Requiring that the size of a site be twice as large as the area encompassed by all systems to allow



for rotation and fallowing.

- Evaluating the suitability of proposed sites in relation to depth, frequency of hypoxic events, proximity to marine mammal pathways and traditional fishing grounds, etc.
- Creating ‘No fishing’ restricted access zones around facilities to reduce risk of damage to facilities and subsequent escapes.
- Requiring a baseline environmental assessment for each proposed site which includes diver/video surveys, information on hydrographic conditions, sampling of benthos and water quality, etc.
- Requiring regular monitoring for entanglements, escapes, and disease.
- Compliance with EPA NPDES and Army Corps Section 10 permit requirements as well as compliance with EPA feed monitoring restrictions.
- Maintain records of feed invoices and sale of cultured organisms for inspection by NMFS personnel or authorized officers.

The environmental effects of offshore aquaculture operations were thoroughly analyzed in Section 6.0 of the Aquaculture FMP/FPEIS. As outlined above, the most recent studies reviewed in Price and Morris (2013) support the analyses and conclusions in the Aquaculture FMP/FPEIS and do not present any new information that indicates that there are any impacts that are uncertain or are different from those described in the Aquaculture FMP/FPEIS. Therefore, these more recent studies do not present significant new information relevant to environmental concerns and bearing on the proposed action or its impacts, and no further supplementation is required under the CEQ regulations.

## 5.2 Disease and Escapes

Several commenters expressed concern regarding the spread of disease from cultured to wild fish as well as the impact of cultured escapees on wild populations. One commenter specifically referenced studies related to salmon sea lice and escape issues.

***Analysis and Conclusion:*** The issue of sea lice and disease was analyzed in Section 6.1.2.1 of the Aquaculture FMP/FPEIS. The most researched species of sea lice (*Lepeophtheirus salmonis*) is a specialist parasite of salmonids<sup>4</sup> and another sea lice species (*Calagus rogercresseyi*) which impacted the Chilean salmon industry is not present in the Gulf. While it is possible that other types of ectoparasites which occur naturally in the Gulf could infect farmed fish, permittees are required to contract with an aquatic animal health expert to monitor fish health and approved treatment options are available, should infestation occur. Experience gained and tools developed for controlling sea lice by the salmon farming industry in Maine, Washington State and other countries has only improved since 2009 and are available to the Gulf should the need arise.

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<sup>4</sup> Salmonids are not managed by the Council and therefore cannot be cultured under the Aquaculture FMP/FPEIS.

The issue of disease is also a key consideration that is analyzed in the Aquaculture FMP/FPEIS. As mentioned above, permittees must contract with an approved aquatic animal health expert. Prior to stocking fish into offshore aquaculture systems, this expert must certify that cultured organisms were inspected and determined to be free of World Organization of Animal Health (OIE) reportable pathogens<sup>5</sup> or additional pathogens that are subsequently identified as reportable pathogens in the National Aquatic Animal Health Plan (Action 2). Permittees must also monitor fish in offshore systems and report any incidence of disease to NMFS within 24 hours of discovery (Action 8). NMFS (in cooperation with USDA/APHIS) may order the removal of all cultured organisms from an allowable aquaculture system upon confirmation by an approved reference laboratory that an OIE-reportable pathogen exists and it is determined that the event poses a significant risk to the health of wild or farmed aquatic organisms (Action 8). Such measures will reduce the possibility of disease incidence and transmission between cultured and wild stocks.

Several commenters also raised concerns regarding the ability of cultured fish to escape and interbreed with wild fish, possibly resulting in genetically less-fit wild fish populations. The Aquaculture FMP/FPEIS includes several important measures to reduce or eliminate the potential impacts of cultured escapees on wild populations and evaluates the potential impacts of these measures. First, only species native to the Gulf (and managed by the Council) can be cultured under the plan (Action 5). Second, all broodstock used to produce juveniles for stocking in offshore systems must be sourced from the same population or subpopulation where the facility is located (Action 2). Third, the culture of genetically modified or transgenic organisms is strictly prohibited (Action 2). Such measures are important as they aim to avoid loss of fitness arising from genetically divergent populations and NMFS is not aware of any new information that would suggest that additional or new impacts will result from implementation of these measures.

One commenter noted that a 2010 study indicates that escape of eggs spawned by fish in offshore cages is a problem and that the Aquaculture FMP/FPEIS does not address this issue. However, in 2012, NOAA published a technical report on genetic risks which explains that a reduction in the fitness of wild populations from cultured escapees depends on several factors: the number and life stage of escapees, the probability of escaped fish surviving to maturity, and the probability that mature escapees will successfully reproduce with wild individuals (Waples et al., 2012). In marine fishes, mortality rates at the egg and larval phases are high and can exceed 99.99%. In fact, it has been estimated that only 180 individuals out of 1 million larvae would be expected to survive under average conditions (Fuiman and Werner, 2003). Additionally, the broodstock limitations described in the previous paragraph require cultured fish to be genetically similar to local stocks reducing genetic differences between cultured and wild stocks. Based on this information, it is reasonable to conclude that eggs spawned from fish in offshore cages have little chance of causing an impact. Thus, NMFS has determined that the study referenced by the commenter

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<sup>5</sup> OIE-reportable pathogens are those which are not indigenous to an area, but rather have been introduced.

does not present substantial new information bearing on the proposed action or its impacts.

Based on the foregoing, NMFS concludes that there is no new information related to diseases and escapes that indicates that there are any additional impacts that are uncertain or are different from those described in the Aquaculture FMP/FPEIS. Therefore, NMFS has determined that there is no significant new information relevant to environmental concerns and bearing on the proposed action or its impacts, and no further supplementation is required under the CEQ regulations.

### **5.3 Feeds**

Several commenters stated that traditional means for preventing overfishing of forage fish are insufficient and suggested that additional measures (e.g., caps on the use of fishmeal and fish oil) be evaluated.

***Analysis and Conclusion:*** Section 6.1.7 of the Aquaculture FMP/FPEIS discusses in detail the harvest of prey (forage) species for use as ingredients in aquaculture feeds and notes that efforts are being made on a global scale to reduce dependence on fishmeal and oil sourced from wild caught forage fisheries by replacing them with ingredients such as agricultural products, algae and seafood and farm animal processing trimmings. A 2011 NOAA Technical Memo published as part of the NOAA-USDA Aquaculture Feeds Initiative also indicates that global production of fish meal and fish oil has been relatively constant for the past 20 years, even though aquaculture production has continued to rise (Rust et al. 2011). This has been made possible by the fact that there is no nutritional requirement for fish meal or fish oil by any species of fish reared in aquaculture. Feed manufacturers continue to reduce their reliance on fish meal and fish oil by increasingly using alternative ingredients and fish meal “free” feeds are now available commercially for some species (e.g., salmonids).

In the United States, Gulf and Atlantic menhaden represent the greatest source of fish meal production, followed by trimmings from fish caught for human consumption. Atlantic herrings and Californian pilchards account for a lesser amount of U.S. fishmeal and fish oil production. Currently, Gulf menhaden are not overfished and are not undergoing overfishing, while Atlantic menhaden are experiencing overfishing and its overfished status is unknown. Both species are managed by interstate compacts and stock assessments that are conducted every four to five years by NMFS, after which time management measures are reconsidered. As recognized in Sections 4.1, 6.14, 6.15, and 6.17 of the Aquaculture FMP/FPEIS, if future stock assessments indicate that the status of a U.S. forage fish species is declining, the appropriate management entities will evaluate all relevant information, which may include new management techniques, and take appropriate action to continue to manage these species sustainably.

Based on the foregoing, NMFS concludes there is no new information related to feeds that indicates that

there are any additional impacts that are uncertain or are different from those described in the Aquaculture FMP/FPEIS. Therefore, NMFS has determined that there is no significant new information relevant to environmental concerns and bearing on the proposed action or its impacts, and no further supplementation is required under the CEQ regulations.

#### 5.4 Socioeconomic Impacts

Several commenters suggested that NMFS consider new circumstances regarding socioeconomic impacts of offshore aquaculture to fishermen who fish for species managed under Individual Fishing Quota (IFQ) programs, particularly for red snapper.<sup>6</sup>

*Analysis and Conclusion:* While updated information is available for the red snapper<sup>7</sup> and grouper-tilefish<sup>8</sup> IFQ programs, the conclusions in Section 6.2 of the Aquaculture FMP/FPEIS (Environmental Consequences, Action 1) are not expected to change for several reasons. For example, the primary competition of domestic wild capture fisheries continues to be imports, not domestic aquaculture. In fact, the annual U.S. seafood deficit has increased from \$9.4 billion in 2007 to nearly \$11 billion in 2013 and continues to rise. The Aquaculture FMP/FPEIS also provides several requirements to reduce the impacts of aquaculture operations on wild populations, such as only allowing the culture of native species and non-genetically modified and non-transgenic animals (Action 5) as well as numerous monitoring, reporting and recordkeeping measures (Actions 2 and 8). It should also be noted that red drum (for which commercial harvest is prohibited in federal waters) and cobia (which has a marginal federal commercial fishery) will likely be the primary targets for offshore aquaculture operations in the Gulf since these species have a history of being cultured for food and stock enhancement purposes. In contrast, red snapper culture techniques are still being developed as issues persist regarding egg quality and larval survival. Similarly, some grouper species have been cultured in Asia but there are no major U.S. aquaculture programs for these species. No information is currently available related to the culture of tilefish.

Based on the foregoing, NMFS concludes there is no new information related to socioeconomic impacts that indicates that there are any additional impacts that are uncertain or are different from those described in the Aquaculture FMP/FPEIS. Therefore, NMFS has determined that there is no significant new information relevant to environmental concerns and bearing on the proposed action or its impacts, and no further supplementation is required under the CEQ regulations.

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<sup>6</sup> The term "individual fishing quota" means a Federal permit under a limited access system to harvest a quantity of fish, expressed by a unit or units representing a percentage of the total allowable catch of a fishery that may be received or held for exclusive use by a person. Such term does not include community development quotas as described in section 305(i) of the Magnuson-Stevens Fishery Conservation and Management Act.

<sup>7</sup> Framework Action for Red Snapper 2013 Quota Increase and Supplemental Recreational Season

<sup>8</sup> 2011 Final Reef Fish Amendment 32

## 5.5 Other Aspects of the Affected Environment

In addition to the sections above, updated information exists which is pertinent to the following sections of the original Aquaculture FMP/FPEIS:

– Section 5.2.3 Status of stocks

- Page 123: Changes since 2009 include removal of three Gulf species (gag, gray triggerfish, greater amberjack) and addition of Gulf two species (hogfish, jacks complex) to the overfishing list. Four Gulf species remain on the overfished list (gag, gray triggerfish, greater amberjack, red snapper). Further information can be found in the 2013 Status of Stocks 2013 report: [http://www.nmfs.noaa.gov/sfa/fisheries\\_eco/status\\_of\\_fisheries/archive/2013/status\\_of\\_stocks\\_2013\\_web.pdf](http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/archive/2013/status_of_stocks_2013_web.pdf)
- 5.2.3.1.1 Reef Fish
  - The 2011 Final Generic Annual Catch Limit/Accountability Measures Amendment made the following changes: 1) transferred management of selected species to State or Federal Agencies, 2) removed selected stocks from the Reef Fish Fishery Management Plan, 3) developed species groupings to reduce the risk of exceeding catch limits, 4) described the process by which Acceptable Biological Catch (ABC) was specified to account for scientific uncertainty, 5) developed initial specification of Annual Catch Limits (ACLs) procedures to address management uncertainty, 6) developed standardized framework procedures for implementing management changes, 7) established ACLs (and/or Annual Catch Targets (ACTs)) for species that did not have harvest quotas, and 8) established Accountability Measures (AMs) for each of the catch frameworks. Additional details can be found at: [http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL\\_AM\\_Amendment-September%209%202011%20v.pdf](http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf)
- 5.2.3.1.2 Coastal Migratory Pelagics
  - Updated information on dolphin and management aspects can found in Mackerel Amendments 20A (2013) and 20B (2014). Amendment 20A consists of three management actions jointly developed by the Gulf of Mexico and South Atlantic Fishery Management Councils. These Councils considered three actions in the amendment, but ultimately determined to only take action on two of them. The first action addresses the sale of bag limit caught king and Spanish mackerel. The second action addresses the elimination of latent federal commercial permits in the king mackerel fishery. The Council decided not to modify or remove latent federal permits for king mackerel at this time. The third action addresses the elimination or modification of the current income requirement for obtaining or renewing a commercial coastal migratory pelagics fishing permit. Amendment 20B to the Fishery Management Plan for the Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region also consists of six management actions jointly developed by the Gulf of Mexico and South Atlantic Fishery

Management Councils. The first two actions adjust trip limits and fishing seasons for zones and subzones of the Gulf of Mexico migratory group. The third action allows transit of vessels with king mackerel through areas closed to king mackerel fishing. The fourth action divides the ACL for Atlantic migratory group king and Spanish mackerel into zones. The fifth action is an administrative change to the framework procedure for the FMP. The sixth action addresses the results of the most recent stock assessment for cobia and divides the ACL into zones. Additional details can be found at:

<http://www.gulfcouncil.org/docs/amendments/CMP%20Amendment%2020A.pdf>

<http://www.gulfcouncil.org/docs/amendments/CMP%20Amendment%2020B.pdf>

○ 5.2.3.1.3 Stone Crab

- Stone crab is no longer managed by the Council and can be removed.

○ 5.2.3.3 Marine Mammals and Protected Species

- This section can be updated to include recent information such as the cetacean Unusual Mortality Event (UME) in the Gulf of Mexico. Additional information on the UME can be found at:

[http://www.nmfs.noaa.gov/pr/health/mmume/cetacean\\_gulfofmexico.htm](http://www.nmfs.noaa.gov/pr/health/mmume/cetacean_gulfofmexico.htm)

– Section 5.3 Description of the Economic and Social Environment - Aquaculture Fishery

○ 5.3.2.1 Past and Present Commercial Aquaculture Operations

- All of the companies that were operational at the time the Aquaculture FMP/FPEIS was published are no longer in business. Kampachi Farms (formerly known as Kona Blue Water Farms) received a one year experimental permit in 2011 to grow out and harvest 2,000 Almaco jack in federal waters. Currently, Blue Ocean Mariculture grows approximately 1 million “Hawaiian kampachi” (*Seriola rivulana*) annually in cage systems in Hawaiian state waters off of the island of Kona.

○ 5.3.4 Relevant Fisheries and Communities

- Permits and processor data can be updated with information from PIMS and NMFS S&T, respectively.
- The Aquaculture FMP/PEIS includes harvest data and community information through 2007 and 2008. Updates on this information can be found in the following actions:
  - 2011 Final Generic Annual Catch Limit/Accountability Measures Amendment: [http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL\\_AM\\_Amendment-September%209%202011%20v.pdf](http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf)
  - 2013 Gag and Shallow-Water Grouper Framework: <http://www.gulfcouncil.org/docs/amendments/2013GagRecreationalSeason.pdf>
  - 2013 Red Snapper Increase and Supplemental Recreational Season: [http://sero.nmfs.noaa.gov/sustainable\\_fisheries/gulf\\_fisheries/reef\\_fish/2013/rs\\_tac\\_framework/documents/pdfs/gulf\\_rs\\_framework\\_2013\\_quotas.pdf](http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/reef_fish/2013/rs_tac_framework/documents/pdfs/gulf_rs_framework_2013_quotas.pdf)
  - 2013 Generic Amendment Modifications to Federally-Permitted Seafood

Dealer Reporting Requirements:

<http://gulfcouncil.org/docs/amendments/Modifications%20to%20Federal%20Permitted%20Seafood%20Dealer%20Reporting%20Requirements.pdf>

- 2013 Amendment 20A Coastal Migratory Pelagics Sale and Permit Provisions:

[http://sero.nmfs.noaa.gov/sustainable\\_fisheries/gulf\\_sa/cmp/2014/am20a/documents/pdfs/cmp\\_am20a\\_ea.pdf](http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_sa/cmp/2014/am20a/documents/pdfs/cmp_am20a_ea.pdf)

- 2014 Amendment 20B Modifications to the Coastal Migratory Pelagics Zone Management:

<http://www.gulfcouncil.org/docs/amendments/CMP%20Amendment%2020B.pdf>

- 5.3.5 Seafood Trade

- Information goes through 2008 and can be updated to include new information on the U.S. seafood trade deficit. The most current information can be found at: [http://www.fishwatch.gov/farmed\\_seafood/outside\\_the\\_us.htm](http://www.fishwatch.gov/farmed_seafood/outside_the_us.htm).

- Section 5.4 Description of the Economic and Social Environment - Wild Stocks

- Permits information can be updated from 2009-present. Information on recreational fishing data and fishing communities can be updated using information from the FMPs and Amendments described above.

***Analysis and Conclusion:*** While the information above provides updates on management measures, harvest and community data, trade statistics and recent events related to protected species, it does not present significant new information relevant to environmental concerns bearing on the proposed action or its impacts, and therefore does not alter the analysis or conclusions outlined in the Aquaculture FMP/FPEIS. As the Supreme Court has explained, “an agency need not supplement an EIS every time new information comes to light after the EIS is finalized. To require otherwise would render agency decision-making intractable.”<sup>9</sup>

Based on the foregoing, NMFS concludes that the new information is within the scope of the Aquaculture FMP/FPEIS, and does not indicate that there are any impacts that are uncertain or are different from those we described in the Aquaculture FMP/FPEIS. Therefore, NMFS has determined that this new information is not significant and no further supplementation is required under the CEQ regulations.

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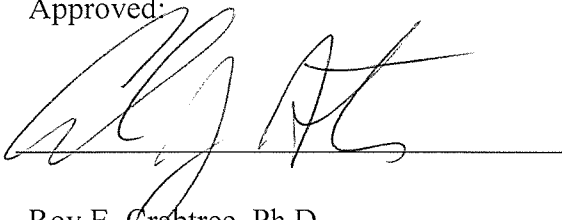
<sup>9</sup> See *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 373 (1989).

## 6. Conclusions/Decision

The NEPA requires agencies to prepare an SEIS to either a draft or a final EIS if the agency (1) makes substantial changes in the proposed action that are relevant to environmental concerns; or (2) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts (40 CFR 1502.9(c)). An agency need not supplement an EIS every time new information comes to light. Additionally, not every change requires the preparation of an SEIS; only those changes that cause effects which are significantly different from those already studied require supplementary consideration.

The information contained in this final SIR is specific to the passage of time since the original Aquaculture FMP/FPEIS was finalized in 2009. NMFS has evaluated whether any new and relevant circumstances or information raised by the commenters are “significant” pursuant to NEPA and in light of the analysis contained in the Aquaculture FMP/FPEIS. NMFS has determined that these new circumstances or information are within the scope of the Aquaculture FMP/FPEIS, and will not result in any impacts that are uncertain or are different from those described in the Aquaculture FMP/FPEIS. Therefore, NMFS concludes these new circumstances or information are not significant for purposes of the NEPA analysis required in the CEQ regulations and that no SEIS is necessary at this time.

Approved:



Date: 7/1/15

*FW*  
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## 8. References

Fuiman, L.A., and R.G. Werner (eds). 2003. Fishery Science: The Unique Contributions of Early Life Stages. Volume 11, Issue 3, pp 316-317.

Price, C.S. and J.A. Morris, Jr. 2013. Marine Cage Culture and the Environment: Twenty-first Century Science Informing a Sustainable Industry. NOAA Technical Memorandum NOS NCCOS 164. 158 pp.

[http://www.noaanews.noaa.gov/stories2013/pdfs/2013\\_PriceandMorris\\_MarineCageCultureandTheEnvironment\(5\).pdf](http://www.noaanews.noaa.gov/stories2013/pdfs/2013_PriceandMorris_MarineCageCultureandTheEnvironment(5).pdf)

Rust, M.B., F.T. Barrows, R.W. Hardy, A. Lazur, K. Naughten, and J. Silverstein. 2011. The Future of Aquafeeds: A Report of the NOAA/USDA Alternative Feeds Initiative. NOAA Technical Memorandum NMFS F/SPO-124. NOAA National Marine Fisheries Service.

[http://www.nmfs.noaa.gov/aquaculture/docs/feeds/the\\_future\\_of\\_aquafeeds\\_final.pdf](http://www.nmfs.noaa.gov/aquaculture/docs/feeds/the_future_of_aquafeeds_final.pdf)

Waples, R.S., K. Hindar, and J.J. Hard. 2012. Genetic risks associated with marine aquaculture. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-119, 149 p.

<http://www.westcoast.fisheries.noaa.gov/publications/aquaculture/geneticrisksaquaculturetm119.pdf>