CESAJ-RD 16 October 2015
Programmatic General Permit SAJ-99
SAJ-2007-03138 (JPF)
Modification #1

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Finding for Above-Numbered Permit Application

1. **Permit Considered for Modification:** The Jacksonville District, U.S. Army Corps of Engineers (District) proposes to modify Programmatic General Permit (PGP) SAJ-99, which gives general authority to the Florida Department of Agricultural and Consumer Services (DACS) to administer this permit for aquaculture of live rock and marine bivalves in the navigable waters of the U.S., which are within the jurisdiction of the State of Florida. The District issued the current PGP on 09 November 2012.

2. **Statutory Authority:** In accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

3. **Background and Modification Proposal:** The SAJ-99 authorizes the deposition of materials and other work, by non-DACS entities, for the purposes of live rock and marine bivalve aquaculture, in navigable waters of the United States which are within the jurisdiction of the State of Florida (The subject waters of the State of Florida covered under this permit are limited to the area between approximately 3 marine leagues offshore and the mean high water line on shore on the Gulf coast, and the area between approximately 3 geographical miles offshore and mean high water line on shore on the Atlantic coast). At the time of issuance, “marine bivalve aquaculture” was understood to involve the placement of materials such as mesh bags directly on the bottom only. In addition, because of concerns about potential impacts to the essential features of Gulf sturgeon critical habitat, no new leases were allowed to be placed in Gulf sturgeon designated critical habitat.

Since the time of issuance, the DACS has notified the Corps and the National Marine Fisheries Service of the advent of several different methods of oyster culture that reduce the potential of adverse effect to the essential features, and requested modification of the SAJ-99 to include these different methods of marine bivalve production that are collectively referred to as off-bottom oyster culture (floating basket, suspended basket, and off-bottom basket) in the permit, and allow the use of these off-bottom oyster culture methods within the boundaries of Gulf sturgeon and smalltooth sawfish critical habitat.

The DACS has also requested modification of the SAJ-99 to specifically authorize, under Section 10, navigation markers required by the PGP and by the U.S. Coast Guard for aquaculture areas, and to allow individuals culturing live rock to have multiple lease areas under a single SAJ-99 authorization.

4. **Location, Existing Site Conditions, Project Description:**

a. **Location:** The PGP would be available for use within navigable waters of the United States which are within the jurisdiction of the State of Florida. The subject waters of the State of Florida covered under this permit are limited to the area between approximately three marine leagues offshore and the mean high water line on shore on the Gulf coast, and the area between approximately three geographical miles offshore and mean high water line on shore on the Atlantic coast. As part of the application notification process for individual projects, as well as required annual reporting by the DACS on the use of the SAJ-99, the DACS provides specific information about locations where the PGP is authorized.

b. **Existing Site Conditions:** DACS considers the existing site conditions when evaluating an application to use the SAJ-99. The PGP includes special conditions prohibiting its use in sensitive aquatic habitats such as seagrass beds, mangrove areas, coral and hardbottom areas, or in areas such as river mouths, ocean passes/cuts, and navigation channels. A report on site conditions is included in the application notification process for individual projects.

c. **Project Description (Types of Work Proposed):** The deposition of materials and other work, by non-DACS entities, for the purposes of live rock and marine bivalve aquaculture, including off-bottom aquaculture methodologies, and including navigation markers for aquaculture leases.

5. **Project Purpose:** To modify the SAJ-99 which eliminates the need for individual approval from the Corps for certain types of aquaculture activities located in waters of the United States within the jurisdiction of the State of Florida, thereby implementing a more efficient regulatory program for the public by reducing duplicative efforts in permitting.

6. **Other Federal, State, and Local Authorizations Obtained or Required and Pending:**

a. **State permit/water quality certification (WQC):** By letter dated 5 November 2012, the Florida Department of Environmental Protection (FDEP) granted a conditional water quality certification for SAJ-99. This is conditioned upon the applicant receiving applicable authorization or waiver under Part IV of Chapter 373, *Florida Statutes (F.S.),* from the DACS, as well as any authorizations required for the use of sovereignty submerged lands under Chapters 253 and 258, *F.S.*

b. **Coastal Zone Management (CZM) consistency/permit:** By letter dated 5 November 2012, the FDEP concurred with the CZMA determination that SAJ 99 is consistent with the enforceable policies included in the Florida Coastal Management Program. The approval was conditioned upon the Corps adding State of Florida Aquatic Preserves to the list under special condition 21, which prohibits the permit being used in certain areas until the authorities responsible for the areas management have been contacted by the DACS and offered the opportunity to express their views. The proposed modification does not affect this condition.

7. **Date of Public Notice and Summary of Comments:**

a. **Important dates:** A public notice for the modification was published on 03 March 2014, describing the additional activities as described in Section 3 of this decision document.

b. All comments received on this application have been reviewed and are summarized below:

(1) **Environmental Protection Agency (EPA):** The EPA did not respond to the Public Notice.

(2) **U.S. Fish and Wildlife Service (FWS):** The FWS did not respond the Public Notice.

(3) **National Marine Fisheries Service (NMFS):**

(a) Protected Resources Division (NMFS-PRD): NMFS PRD requested additional information on 04 September 2014. The Corps and DACS provided a response on 05 September 2014. On 18 September 2014, the Corps, DACS, and NMFS-PRD participated in a webinar with the Auburn University Shellfish lab to discuss the proposed aquaculture methodologies. Based on the information provided about the off-bottom basket methodology, the modification request was changed to eliminate this methodology in Gulf sturgeon critical habitat.

Further information was requested from the USACE and DACS to comply with annual reporting requirements and project-specific reviews in a conference call on 28 January2015. The information was received that same day.

In addition, NMFS-PRD listed five new species of coral as threatened on 10 September 10 2014 (79 FR 53852), and critical habitat for loggerhead sea turtles was designated

within the action area (July 10, 2014; 79 FR 39855). Therefore, NMFS-PRD modified their consultation to consider the newly listed species and critical habitat.

NMFS-PRD provided a final programmatic consultation letter for the proposed modification on 29 September 2015.

(b) **Habitat Conservation Division (NMFS-HCD):** By letter dated 03 April 2014, the NMFS-HCD stated that they did not object to the modification and that they did not have any essential fish habitat recommendations.

(4) **Florida Department of Environmental Protection:** The FDEP did not respond the Public Notice.

(5) **State Historic Preservation Officer (SHPO):** The SHPO did not respond to the Public Notice.

(6) **United States Coast Guard (USCG):** By electronic mail dated 12 June 2014, the USCG expressed concern that the proposed changes to the SAJ-99 concerning navigation markers did not clarify that the Corps was authorizing only the structure used to support the aid to navigation, not the actual aid to navigation itself.

No other comments on the public notice were received from any other Federal or State agency, or from any other organization or individual.

c. **Corps analysis of comments and responses:** Full consideration was given to all comments received during the public notice. The Corps has the following responses to the comments received from the public notice:

(1) **NMFS:**

(a.) NMFS-PRD: The following revisions were requested by NMFS-PRD and are included in the conditions of the permit:

- Harvested live rock must be visually inspected for all listed coral species. No rock may be harvested if any listed coral species have attached.
- Live rock lease sites are limited to one acre in size.
- The off-bottom basket methodology is prohibited on new leases in Gulf sturgeon habitat.
- Floating and suspended methodologies must be set perpendicular to nesting

beaches with loggerhead sea turtle critical habitat, and the linear footage parallel to the beach may not be more than 10% of the linear footage of a nesting beach.

- The newly-listed corals were added to the 'no adverse impacts' list of species and habitats in the PGP.
- A new condition was added clarifying the information to be submitted to the Corps and NMFS-PRD for new leases or new methodologies.
- A new condition was added requiring navigation markers for lease areas.

(b.) NMFS-HCD: No response necessary.

(2) USCG: A new condition was added that specifies that the PGP provides Section 10 authorization for the navigation aid piling or structure only, and that a separate aids to navigation (AToN) permit is needed from the USCG.

8. **Alternatives**

a. **Avoidance:** The no action alternative would not allow for modification of the PGP. The current status of permitting for off-bottom aquaculture methodologies would continue, in which applicants would separately apply for a DACS authorization and a Department of the Army permit. No additional environmental protection would result from this double permitting. Endangered species informal consultation for the Gulf sturgeon, Gulf sturgeon critical habitat, smalltooth sawfish, smalltooth sawfish critical habitat, swimming sea turtles, and loggerhead sea turtle critical habitat would likely be required because the Corps does not have a programmatic consultation for these species. The absence of a modified PGP SAJ-99 would preclude the improved efficiency of the Corps's regulatory program.

b. **Minimization:** There are essentially two types of minimization which may occur under PGP SAJ-99 – impacts to navigation and to resources. The proposed modification to specifically authorize, under Section 10, aids to navigation associated with aquaculture leases minimizes impacts to navigation. There is also existing language in the PGP to protect navigation, including the language prohibiting its use in river mouths, ocean passes/cuts, and navigation channels. The standard manatee, sawfish, and sea turtle construction precautions are already included as special conditions of SAJ-99 to minimize impacts to federally-listed threatened and endangered species. There is also existing language in the PGP to protect resources. Additional special conditions clarify reporting requirements to allow for better monitoring of the use of the SAJ-99.

c. **Mitigation:** Because of the minor nature of these projects, compensatory

mitigation is not considered necessary as a part of the PGP SAJ-99 itself. Projects resulting in impacts to special aquatic sites are not authorized under SAJ-99.

9. **Evaluation of the 404(b)(1) Guidelines:**

a. Factual Determinations:

(1) Physical Substrata: SAJ-99 will minimally adversely affect physical substrata within waters of the United States. Live rock will placed on the surface of the substrata and will cover a portion. Marine bivalves will either attach to existing surfaces or will be placed into the substrata or in bags or racks on the surface. Disturbance of the substrata will occur during harvest and relocation but it will be minor, restricted to the upper 6"-9" inches and recolonization by micro- and macrofaunal species will occur rapidly.

(2) Water circulation, fluctuation, and salinity: The permit will not allow structures that impede water circulation or fluctuation, or alter salinity because it does not allow any activity other than placement and harvest of live rock and bivalve mollusks, and cultch, and structures for bivalve culture that are either floating, suspended, or raised off the bottom. SAJ-99 does not allow filling of wetlands or construction of appurtenant structures, such as docks.

(3) Suspended particulates/turbidity: The works authorized by SAJ-99 will not result in unacceptable impacts to waters of the United States through suspended particulates and/or turbidity. Much of the deposited material will consist of live bivalve mollusks. The size of the inert materials deposited is relatively large and does not contain any silt/clay component. Additionally, all projects will have to receive WQC from the DACS and will have to comply with the state water quality standards.

(4) Contaminant availability: SAJ-99 requires suitable material, free from toxic pollutants.

(5) Aquatic ecosystem effects: It is anticipated that activities authorized by SAJ-99 will not cause any adverse impacts to the structure of the aquatic ecosystem, recreational or commercial fisheries, or any threatened or endangered species. Material deposition will be restricted to areas with no submerged aquatic vegetation or corals.

(6) Proposed disposal sites: SAJ-99 does not allow for any disposal of material other than that used for culture of live rock and marine bivalves.

b. Restrictions on discharges: The work authorized by SAJ-99 must be located in waters of the United States. However, it does not have to be located in special aquatic sites to fulfill its basic purpose, and it has been demonstrated that no other less damaging alternatives exist. The activities authorized by SAJ-99 will not violate State water quality standards nor jeopardize the continued existence of Federally listed threatened or endangered species.

Appropriate and practicable steps have been taken to minimize potential adverse impacts from any backfill discharge on the aquatic ecosystem.

c. Findings: The discharges to be authorized by SAJ-99 for deposition of materials for live rock and marine bivalve aquacultural activities comply with the Section 404(b)(l) Guidelines.

10. **Public Interest Review**: All public interest factors have been reviewed. The following public interest review factors are considered relevant to this proposal. Both cumulative and secondary impacts on the public interest were considered:

(1) Conservation: These activities will have negligible adverse effect on natural resources due to special conditions that were made a part of the general permit. Conversely, they may benefit the natural areas as they will decrease fishing pressure and destruction of the natural reef and SAV areas where native bivalve mollusks occur.

(2) Economics: Applicant and review costs should be lower as a result of this general permit. Conversely, service industries which specialize in the design and permitting of projects may experience reduced revenues as individual applicants may be able to acquire permits for their live rock and marine bivalve areas without having to resort to professional assistance. The live rock industry should also be kept in operation as natural live rock harvest is prohibited.

(3) Aesthetics: None.

(4) General Environmental Concerns: Minimal impact is expected to occur as a result of these activities. Special conditions are made part of the general permit to ensure adequate protection. All applicants are required to obtain WQC and CZM from the State of Florida.

(5) Wetlands: None

(6) Historic Properties: No adverse impacts are expected, however, special conditions are included to provide that the permittee notify the SHPO of the presence of artifacts, so that the SHPO may review the sites or require surveys for the presence of cultural resources prior to further deposition.

(7) Fish and Wildlife Values: No adverse impacts are expected; however, special conditions are included to provide adequate protection to the naturally occurring reef, ledge and vegetated areas. DACS will be required to utilize the Manatee Key in their project evaluation and only those projects which key out to "no effect" or "may affect not likely to adversely affect" will receive authorization. Additionally, all permittees will be required to utilize the "Standard Manatee Conditions for In-Water Work, 2011" and the "Sea Turtle and Smalltooth Sawfish Construction Conditions March 23, 2006." Furthermore, SAJ-99 cannot be used to authorize new leases within the boundaries of Gulf sturgeon designated critical habitat using the off-bottom culture methodology.

(8) Flood Hazards: None.

(9) Floodplain Values: None.

(10) Land Use: The proposed activities are in keeping with submerged land use policies in the territorial sea of Florida.

(11) Navigation: No adverse impacts are expected; however, special conditions have been included to ensure that the deposited rocks and bivalve operations are not a hazard to safe navigation or a hinderance to vessel traffic; and that they avoid traditional fishing operations, or other public access.

(12) Shore Erosion and Accretion: None.

(13) Recreation: By continuing the live rock industry, individuals will be able to have aquaria that contain reef invertebrates. Many individuals watch aquaria as a form of recreation.

(14) Water Supply and Conservation: None.

(15) Water Quality: None. Authorization by the DACS will ensure that the projects are in compliance with state water quality standards.

(16) Energy Needs: None.

(17) Safety: No adverse impacts are expected.

(18) Food and Fiber Production: None.

(19) Mineral Needs: None.

(20) Considerations of Property Ownership: This is not an issue as property leased from the state in state waters is not owned by individuals.

c. Describe the relative extent of the public and private need for the proposed structure or work: Activities authorized under this general permit will allow the public to continue purchase of reef invertebrates for their aquaria; The demand for these items is high and this general permit will help to fill a public need. Bivalves, primarily oyster and hard clams, are in great demand in wholesale, retail and restaurant markets.

d. Describe the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed work where there are unresolved conflicts as to resource use: Provided the work is not done in any of the prohibited areas or community types specified in the special conditions, there are no unresolved conflicts regarding resource use.

e. Describe the extent and permanence of the beneficial and/or detrimental effects which the proposed work is likely to have on the public and private uses to which the area is suited: Public benefits accruing to the individual applicants include decreased permit time and complexity, resulting in a noted savings oftime and individual resources. In addition, processing of the permits will require fewer Federal resources.

Private benefits are of an entrepreneurial nature for the live rock and marine bivalve supplier and of a readily available supply of live rock and marine bivalves for the purchaser. These benefits are expected to be permanent. Potential detrimental impacts could occur to fish and wildlife, especially those in close proximity to the aquaculture sites. Special conditions have been added to the general permit to minimize these potential impacts. Because of the nature and location of the various aquaculture operations, impacts are expected to be temporary and of relatively low impact.

f. Threatened or Endangered Species: With the inclusion of Special Conditions, the proposed general permit will not jeopardize the continued existence, or adversely affect the critical habitat, of any threatened or endangered species.

g. Cumulative and Secondary Impacts: There should be no adverse cumulative or

secondary impacts caused by the activities.

10. Determinations:

a. Finding of No Significant Impact (FONSI). Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

b. Compliance with 404(b)(1) Guidelines: Having completed the evaluation in paragraph 8 above, I have determined that the proposed discharge complies with the 404(b)(1) guidelines.

c. Public Interest Determination: I find that issuance of a Department of the Army permit is not contrary to the public interest.

d. Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps's continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

PREPARED BY:

John Fellows
Project Manager

REVIEWED BY:

DONALD W. KINARD
Chief, Regulatory Division

APPROVED BY:

JASON A. KIRK, P.E.
Colonel, U.S. Army
District Commander

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

F/SER31: JR
SER-2014-13378

AUG 13 2015

John Fellows
Regulatory Division
U.S. Army Corps of Engineers
10117 Princess Palm Avenue, Suite 120
Tampa, Florida 32232-0019

Portia Sapp
Director, Division of Aquaculture
Florida Department of Agriculture and Consumer Services
1203 Governor's Square Boulevard, 5th Floor
Tallahassee, Florida 32301

Ref.: Reinitiation of Consultation on Programmatic General Permit SAJ-99

Dear Mr. Fellows and Ms. Sapp:

This responds to the U.S. Army Corps of Engineers (USACE) Jacksonville District's request dated March 4, 2014, for reinitiation of interagency consultation under Section 7 of the Endangered Species Act (ESA) for a modification of the USACE Jacksonville District's Programmatic General Permit (PGP) South Atlantic Jacksonville (SAJ)-99 for live rock and marine shellfish aquaculture in jurisdictional waters of the state of Florida. The original ESA consultation was completed on August 29, 2012. The USACE determined that the proposed modification to PGP SAJ-99 may affect but is not likely to adversely affect listed species and designated critical habitat under our purview, and requested (National Marine Fisheries Service's [NMFS's]) concurrence.

Your effects determinations for listed species and critical habitat are summarized in Tables 1 and 2. NMFS's determinations on the project's potential effects are based on the project description in this response. Our rationale for these determinations is described in the following sections and summarized in Table 1 and Table 2. Our determinations regarding the effects of the proposed action are based on the description of the action in this programmatic consultation. You are reminded that any changes to the proposed action may negate the findings of the present consultation and may require reinitiation of consultation with NMFS.

Table 1. Species Effects Determination(s)

Common Name	Scientific Name	ESA Listing Status	USACE Effect Determination	NMFS Effect Determination
Turtles				
Green	*Chelonia mydas*[1]	E/T	NLAA	NLAA
Kemp's ridley	*Lepidochelys kempii*	E	NLAA	NLAA
Leatherback	*Dermochelys coriacea*	E	NLAA	NLAA
Loggerhead	*Caretta caretta*[2]	T	NLAA	NLAA
Hawksbill	*Eretmochelys imbricata*	E	NLAA	NLAA
Fish				
Smalltooth sawfish	*Pristis pectinata*[3]	E	NLAA	NLAA
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T	NLAA	NLAA
Invertebrates and Marine Plants				
Elkhorn coral	*Acropora palmata*	T	ND	NLAA
Staghorn coral	*Acropora cervicornis*	T	ND	NLAA
Boulder star coral	*Orbicella franksi*	T	ND	NE
Mountainous star coral	*Orbicella faveolata*	T	ND	NE
Lobed star coral	*Orbicella annularis*	T	ND	NE
Rough cactus coral	*Mycetophyllia ferox*	T	ND	NE
Pillar coral	*Dendrogyra cylindrus*	T	ND	NE
Johnson's seagrass	*Halophila johnsonii*	T	ND	NE
E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; ND not determined; NE = no effect				

Table 2. Critical Habitat Designated in the Action Area

Species	Unit	USACE Effect Determination	NMFS Effect Determination
Smalltooth sawfish	Charlotte Harbor Estuary; Ten Thousand Islands/Everglades	NE	NE
Gulf sturgeon	Estuarine and Marine (NMFS) – Units 9, 10, 11, 12, 13, 14	NLAA	NLAA

[1] Currently, green sea turtles in U.S. waters are listed as threatened except for the Florida breeding population, which is listed as endangered. On March 23, 2015, NMFS published a proposed rule (80 FR 15271) listing 11 DPSs for green sea turtles; the proposed North Atlantic DPS for green sea turtles is listed as threatened.
[2] Northwest Atlantic Ocean (NWA) distinct population segment (DPS)
[3] The U.S. DPS

Species	Unit	USACE Effect Determination	NMFS Effect Determination
Loggerhead sea turtle for the NWA DPS	Units LOGG-N-14 through LOGG-N-33 for Nearshore Reproductive Habitat, Breeding Habitat, and/or Migratory Habitat	ND	NLAA
Staghorn and elkhorn coral	Florida Area	ND	NE
Johnson's seagrass	All Units A-J	ND	NE
NLAA = may affect, not likely to adversely affect; NE = no effect; ND = not determined			

PGP SAJ-99 will be administered by the Florida Department of Agriculture and Consumer Services (FDACS) through an operating agreement between the USACE and FDACS that gives general authority to FDACS to administer PGP SAJ-99 for the purposes of live rock and marine bivalve aquaculture, in navigable waters of the United States which are within the jurisdiction of the State of Florida. FDACS is entrusted and held accountable by the Governor and Cabinet, acting in their capacity as the Board of Trustees for the Internal Public Improvement Trust Fund (Board), to manage natural resources on behalf of the citizens of Florida, including those related to sovereign submerged lands (SSL). This responsibility includes: (1) abiding by and enforcing state and federal laws and rules including species and habitat protections promulgated by state and federal agencies, and (2) acting upon comments provided by state agencies (i.e., Florida Fish and Wildlife Conservation Commission, Department of Environmental Protection) and the public when applications for SSL leases are presented to the Board.

Consultation History

Consultation on PGP SAJ-99 was first initiated on June 4, 2007. Consultation was reinitiated on April 12, 2012, at the request of the USACE. The consultation was completed on August 29, 2012, and the permit was issued by the USACE on November 9, 2012.

Since the original consultation, several new methods of marine bivalve off-bottom culture have been developed. Therefore, FDACS requested modification of the permit on March 4, 2014, to include three different methods of marine bivalve aquaculture in SAJ-99 and to allow the use of these methods within Gulf sturgeon critical habitat. On September 4, 2014, a request for additional information was sent to the USACE; a response was received from the USACE and the applicant on September 5, 2014. On September 18, 2014, a webinar was held so that Bill Walton of the Auburn University Shellfish lab could provide a detailed presentation on the newly proposed methodologies. The webinar raised some concerns about the use of the off-bottom basket methodology in Gulf sturgeon critical habitat. The off-bottom basket methodology systems are only one foot off the bottom and would impede foraging opportunities and movement within Gulf sturgeon critical habitat. After discussing this concern with Kal Knickerbocker and Portia Sapp of FDACS, it was agreed to not allow this methodology in Gulf sturgeon critical habitat, though the other 2 systems may be used.

Further information was requested from the USACE/FDACS to comply with annual reporting requirement and the project-specific review in a conference call January 28, 2015. The information was received that same day. In addition, we listed five new species of coral as threatened on September 10, 2014 (79 FR 53852), and critical habitat for loggerhead sea turtles has been designated within the action area (July 10, 2014; 79 FR 39855). Therefore, this consultation will consider the new methods and newly listed species and critical habitat.

Programmatic Consultations

NMFS and the U.S. Fish and Wildlife Service (USFWS) have developed a range of techniques to streamline the procedures and time involved in consultations for broad agency programs or numerous similar activities with predictable effects on listed species and critical habitat. Some of the more common of these techniques and the requirements for ensuring that streamlined consultation procedures comply with Section 7 of the ESA and its implementing regulations are discussed in the October 2002 joint Services memorandum, *Alternative Approaches for Streamlining Section 7 Consultation on Hazardous Fuels Treatment Projects* (http://www.fws.gov/endangered/pdfs/MemosLetters/streamlining.pdf; see also, 68 FR 1628 [January 13, 2003]).

Programmatic consultations can be used to evaluate the expected effects of groups of related agency actions expected to be implemented in the future, where specifics of individual projects such as project location are not definitively known. A programmatic consultation must identify project design criteria (PDCs) or standards that will be applicable to all future projects implemented under the program. PDCs serve to prevent adverse effects to listed species, or to limit adverse effects to predictable levels that will not jeopardize the continued existence of listed species or destroy or adversely modify critical habitat, at the individual project level or in the aggregate from all projects implemented under the programmatic consultation. Programmatic consultations allow for streamlined project-specific consultations because much of the effects analysis is completed up front. At the project-specific consultation stage, a proposed project is reviewed to determine if it can be implemented according to the PDCs, to evaluate the specific amount of any adverse effects including take expected from the specific project, and to evaluate or tally the aggregate effects or take that will have resulted by implementing projects under the programmatic consultation to date, including the proposed project. The following elements should be included in a programmatic consultation to ensure its consistency with ESA Section 7 and its implementing regulations:

1. PDCs to prevent or limit future adverse effects on listed species and critical habitat;

2. Description of the manner in which projects to be implemented under the programmatic consultation may adversely affect listed species and critical habitat and evaluation of expected level of adverse effects from covered projects;

3. Process for evaluating and tracking expected and actual aggregate (net) additive effects of all projects expected to be implemented under the programmatic consultation. The programmatic consultation document must demonstrate that when the PDCs are applied to each project, the aggregate effect of all projects will not jeopardize listed species or destroy or adversely modify critical habitat;

4. Procedures for streamlined project-specific consultation. As discussed above, if an approved programmatic consultation document is sufficiently detailed, project-specific consultations ideally will consist of certifications and concurrences between action agency biologists and consulting agency biologists. An action agency biologist or team will provide a description of a proposed project and a certification that it will be implemented in accordance with the PDCs. The action agency also provides a description of anticipated project-specific effects and a tallying of net effects to date resulting from projects implemented under the program, and certification that these effects are consistent with those anticipated in the programmatic consultation. The consulting agency biologist reviews the submission and provides concurrence, or adjustments to the project necessary to bring it into compliance with the programmatic consultation. The project-specific consultation process must also identify any effects that were not considered in the programmatic consultation. Finally, the project-specific consultation procedures must provide contingencies for proposed projects that cannot be implemented in accordance with the PDCs; full stand-alone consultations may be performed on these projects if they are too dissimilar in nature or in expected effects from those projected in the programmatic consultation document;

5. Procedures for monitoring projects and validating effects predictions; and

6. Comprehensive review of the program, generally conducted annually.

Where a programmatic consultation anticipates take will result from individual projects, the Programmatic Opinion must evaluate whether the total maximum take that could result from the program, given implementation of the PDCs, will jeopardize listed species. Take is not authorized until project-specific consultations are completed, and the project-specific take is determined and certified to be consistent with the projections of the programmatic consultation. A Programmatic Biological Opinion may identify reasonable and prudent measures (RPMs) to reduce the impact of take resulting from future projects, and additional RPMs may be identified during project-specific consultations.

The on-going consultation process described in this consultation on PGP SAJ-99, which for the purposes of authorizing live rock and shellfish aquaculture in the jurisdictional waters of the State of Florida, includes elements that ensure consistency with the requirements of ESA Section 7, as described above. As discussed below, because the likelihood of the take of listed species or the destruction/adverse modification of critical habitat that may result from this program is discountable or insignificant, no project-specific incidental take statements or RPMs will be issued.

Description of the Proposed Action

The USACE proposes to modify PGP SAJ-99, a programmatic general permit that will authorize live rock and shellfish aquaculture within the jurisdictional waters of the State of Florida including (1) deposition of materials for live rock; (2) discharges of dredged or fill material (e.g., shell hash, bags seeded with clams, rock) necessary for shellfish such as seeding, rearing,

cultivating, relaying, transplanting, and harvesting activities; and (3) the use of suspended and off-bottom shellfish culture methodologies.

PGP SAJ-99 will continue to be administered by FDACS. The State of Florida issues leases for the temporary (10 years) use of SSL where the lease holder may deposit materials and substrate for the purpose of live rock and marine bivalve aquaculture. All materials and substrate deposited under PGP SAJ-99 are subject to permit and lease conditions (see page 14, Project Design Criteria section) which are non-discretionary requirements that prevent or reduce the potential effects of activities on listed species and their critical habitat. Projects that do not meet these requirements will not be permitted under PGP SAJ-99 and the application will be referred to the USACE who will request the appropriate Service (USFWS and/or NMFS) to initiate Section 7 consultation. Proposed activities that do not meet the PDCs cannot be authorized under PGP SAJ-99 until ESA consultation is complete. Pursuant to Rule 5L-3 Florida Administrative Code (F.A.C.), all aquaculture activities authorized by FDACS must be performed in accordance with the State of Florida's *Aquaculture Best Management Practices* (BMP) dated April 2007 (Appendix 1). BMPs are intended to preserve environmental integrity while eliminating cumbersome, duplicative, and confusing environmental permitting and licensing requirements. Aquaculturists following these practices meet the minimum standard necessary for protecting and maintaining off-site water quality and wildlife habitat. These practices represent a mutually beneficial relationship between commercial aquaculture production and natural resource protection. The State of Florida's Aquaculture BMPs are incorporated as PDC 3 of PGP SAJ-99 as related to specific activities identified in the following sections.

Action Area

State of Florida marine waters encompass 4,460 square miles of estuaries and 6,758 square miles of coastal waters totaling approximately 7,179,520 acres (ac). FDACS currently manages 1,454,180 ac, or 20% of the total, for the harvest of shellfish for human consumption. Within that managed acreage, the State of Florida has leased 4,490 ac, or 0.06% of the total, to shellfish farmers. During FDACS' 2012 fiscal year, operations reported 255.8 million total clam seed planted with a 59.1% survival rate. FDACS has planted oyster culture off of the coasts of Escambia, Bay, Franklin, Levy, Santa Rosa, and Walton Counties.

The State of Florida has been managing and maintaining oyster reefs (i.e., collecting, storing, handling, and planting oyster and clam cultch, fossilized shell, or limestone rock) and leasing SSL for aquaculture purposes since 1913. From 1881 until 1969, leases were granted in perpetuity. Subsequently, the State began granting shellfish aquaculture leases with 10-year terms in designated Aquaculture Use Zones (AUZs) that are subdivided into lease managed areas. Whenever possible, in-perpetuity leases have been converted to term leases when these leases are proposed for transfer from one entity to another.

In 2013-2014, FDACS, acting on behalf of the Board of Trustees of the Internal Improvement Trust Fund, administered 640 aquaculture leases containing approximately 1,742 ac. In response to its statutory mandate, FDACS identifies tracts of submerged lands throughout the state that are suitable for aquaculture development. FDACS has designated 20 high-density lease areas as AUZs in 9 coastal counties, including Brevard, Charlotte, Collier, Dixie, Franklin, Indian River,

Levy, Lee, and Volusia (Figure 1). Applicants for an aquaculture lease may request a lease parcel in 1 of these AUZs or at a location of their selection. The advantage to using an AUZ includes the site already being approved though a resource survey process while an individually identified parcel chosen by an applicant is subject to such survey and the costs associated with the survey. Average increases in leased areas outside of AUZs are approximately 1-2 ac per year over the history of the program. Since 2010, 14 new leases totaling 61 acres by 12 applicants have been approved (P. Sapp, FDACS, pers. Comm. To J. Rueter, NMFS, July 27, 2015). If new areas were to be allowed for aquaculture use, all provisions and conditions of PGP SAJ-99 required in the AUZs would also be implemented for those new leases.

Table 3 below provides a list of the current AUZs located within ESA-designated critical habitat. These are also shown in Figure 1 below. As discussed above, not all leases occur within these AUZs. For example, live rock is hand placed in southern Florida in areas that support coral growth. The hand placement of live rock must follow the PDCs of PGP SAJ-99. Shellfish aquaculture activities may occur in any State waters as long as the activity does not violate any of the PDCs of PGP SAJ-99.

Table 3. AUZ's located in Gulf sturgeon, smalltooth sawfish, and the NWA DPS Loggerhead critical habitat.

AUZ	Critical Habitat Unit	Acres
Cape Romano	Smalltooth sawfish 10,000 Islands	32
Whitehorse Key	Smalltooth sawfish 10,000 Islands; NWA DPS loggerhead nearshore reproductive	32
North Pine Island	Smalltooth sawfish Charlotte Harbor Estuary	32
South Pine Island	Smalltooth sawfish Charlotte Harbor Estuary	80
Gasparilla Sound	Smalltooth sawfish Charlotte Harbor Estuary	102
Derrick's	Gulf sturgeon Unit 14	144
Pelican Reef	Gulf sturgeon Unit 14	182
Gulf Jackson	Gulf sturgeon Unit 14	220
TOTALS		
Critical Habitat Unit	Critical Habitat Unit Size (Ac)	Acres Occupied by AUZ (Percent)
Smalltooth sawfish 10,000 Islands	619,013	64 (0.01%)
Smalltooth sawfish Charlotte Harbor Estuary	221,459	214 (0.01%)
Gulf sturgeon Unit 14	135,040	546 (0.4%)
NWA DPS loggerhead nearshore reproductive	5,732	32 (0.5%)

Figure 1. Locations of AUZs in Florida

Activities

Activities permitted under PGP SAJ-99 authorize the following categories of live rock and shellfish aquaculture activities within the jurisdictional waters of the State of Florida.

I. Live Rock Aquaculture – Aquaculturists produce an inert calcareous rock colonized by sessile marine organisms (e.g., coral, anemones, sea fans) that is sold in the marine aquarium trade. Live rock aquaculture consists of placing rock acquired from a terrestrial source, such as a quarry, on the sea floor for several years. In that time frame, sessile marine organisms colonize the rock, which is later harvested for sale. All materials for live rock aquaculture must be placed on the site by hand, or lowered completely to the bottom by crane; deposited materials shall not be allowed to "free fall" to the bottom. Rocks may not be placed over naturally-occurring reef outcrops, limestone ledges, coral reefs, or vegetated areas. A minimum setback of 50 feet (ft) must be maintained from naturally vegetated or hard bottom habitats. Harvest of live rock shall be in accordance with Chapter 597, Florida Statutes (F.S.), and the BMPs adopted therein.

State of Florida's *Aquaculture Best Management Practices* for live rock aquaculture include (PDC 3):

i. Natural rock used for a substrate must be geologically distinguishable from naturally occurring rock in the area of the lease;

ii. Substrate materials, natural or artificial rock must be approved by the FDACS, Division of Aquaculture, prior to deposition on submerged lands or in an upland facility;

iii. A geologist's lithographic description of the substrate material must be retained until the time of sale and must be made available for inspection by the FDACS, Division of Aquaculture upon request;

iv. Substrate material should be sufficiently free of sediment and fines so that the deployment does not result in turbidity violations inside or outside of the lease boundary;

v. Substrate deployment should be conducted in a manner that minimizes turbidity and does not result in adverse impacts to natural fishery habitats or other benthic resources. Use of native live rock is prohibited;

vi. Substrate materials should be handled and stored in a manner that minimizes on-site and off-site impacts;

vii. Substrate containing marine life species not native to Florida waters can only be cultured in upland facilities which sterilize any discharge water or are managed as closed systems having no off-site discharge.

FDACS has currently authorized 15 live rock leases totaling approximately 20 ac. Ten of these leases are located within the designated boundaries of *Acropora* spp. critical habitat. These ten leases total 7.7 ac in *Acropora* spp. critical habitat. All of these leases are required to maintain a minimum setback distance of 50 ft from any hard bottom habitat in order to avoid impacts to listed coral species and *Acropora* critical habitat and its essential features. Additionally, any material deposited for live rock culture must be inspected prior to removal and left in place if it becomes colonized by any listed coral species. No new leases have been issued since completion of the consultation in 2012, and no additional leases are expected in the next five years.

II. Shellfish Culture – Shellfish culture, including hard clams, mussels, scallops, and oysters occur on SSL leased from the State of Florida. We consider effects from three types of shellfish culture based on methodology below. In addition to inspecting farms for compliance with the aquaculture BMPs, FDACS accepts applications for SSLs and regulates and inspects shellfish processing plants for compliance with shellfish handling, labeling, and food safety protection requirements.

FDACS reports that the availability of suitable aquaculture leases is very limited. Very few areas represent favorable environments for aquaculture, based on resource management, land

use, and public health policies. In locations where leases might be available, water quality and biological conditions are often not favorable for production; this is particularly true regarding shellfish aquaculture. Currently, there are waiting lists for applicants wishing to obtain leases in most of the designated aquaculture use areas. Only a small number of aquaculture leases are cancelled and returned to the state; typically, leases are transferred by the leaseholder directly to another party. Applicants with the highest likelihood of obtaining a new aquaculture lease usually reside or work in the county or region where a new aquaculture use zone is designated, since most aquaculture use zones are designated in response to local economic development needs.

For those aquaculturists participating in shellfish culture, the following State of Florida's BMPs apply (PDC 3):

i. Aquaculturists culturing shellfish on SSL shall obtain an aquaculture lease or other SSL authorization and remain current with annual fees and conditions of that authorization agreement;

ii. Follow all the terms and conditions of the sovereign submerged land aquaculture lease, and be fully compliant with provisions of Chapters 253, 258, Part II, 597, F.S., Chapters 5L-1, 5L-3, F.A.C.;

iii. Aquaculturists culturing shellfish on privately-held SSL shall provide a development plan for culture operations and must have an aquaculture certificate from the FDACS;

iv. Prior to commencement of the aquaculture activities on the approved grow-out site, properly post the grow-out boundaries to delineate the corners and perimeters, as per the lease agreement. Markers should be sufficient to warn mariners passing in the vicinity of the lease of the potential hazards to navigation;

v. Authorized activities on the grow-out site are those activities allowed in the lease agreement or development plan for culture operations;

vi. No vessel of any description shall be moored on or adjacent to the grow-out premises for a period exceeding 24 hours, regardless of whether the vessel is periodically moved;

vii. Mechanical harvesting is prohibited on aquaculture grow-out areas unless specified in the lease agreement or development plan for culture operations;

viii. Culture materials (cultch) placed on the grow-out area must be a suitable substrate for attachment of oyster larvae such as natural molluscan shells; fossilized shell, coral, and other aquatic organisms; lithic materials such as crushed and graded limestone, granite, and gravel which contain lithic fractions and calcium carbonate, including crushed and graded concrete. Exceptions to this list of generally accepted cultch materials must be specifically approved and identified within the aquaculture lease agreement;

ix. Non-natural materials placed in the water or on submerged lands shall be anchored to the bottom. This includes any protective netting used to cover the bags;

x. Bags, cover nets, and/or trays used in the culture operation shall be removed from the water during all mechanical cleaning, maintenance and repair operations. During harvest, culture bags and cover nets shall be rinsed/cleaned over the grow-out area to allow sediments to remain in the lease area. Mechanical or hydraulic devices shall not be used below the water for cleaning of the submerged structures. Use hand tools for cleaning shellfish, bags, and other structures under water;

xi. All culture materials, cover nets, bags, or other designated markers placed on or in the water shall be clean and free of pollutants including petroleum-based products such as creosote, oils and greases, or other pollutants. Compounds used as preservatives must be used in accordance with the product label;

xii. The aquaculturist is responsible for collection and proper disposal of all bags, cover netting, or other materials used in the culture of shellfish on SSL or when such materials are removed during harvesting or become dislodged during storm events;

xiii. Producers must maintain records of all seed purchases and seed sales for a period of 2 years. These records must be available pursuant to the annual lease audit requirement of the Sovereignty Submerged Land Aquaculture Lease.

A. Hard Clam Aquaculture – Hard clam farmers plant their crops on submerged state lands. Hard clams are filter feeders that take advantage of Florida's coastal waters that are rich in phytoplankton. Phytoplankton is a natural and abundant food source for clams, oysters, mussels, and scallops. Hard clam farmers utilize 2 different grow-out methods. The most widely utilized method consists of hatchery and nursery produced clam seed that are placed in polyester mesh bags that are secured to the bottom. The bags conveniently containerize the clams for ease of handling and protect them from a variety of predators. Sediments naturally filter through the mesh and the clams dig down into the bottom for protection. To feed, clams push their siphon up through the mesh to filter out phytoplankton, dissolved organic matter, and organic particles. To enhance predator protection and reduce wear and tear, some farmers treat the clam nursery and grow out bags with various coatings to stiffen the fabric. Skates, rays, black drum, and blue crab are efficient clam predators that can cut through untreated, exposed netting or crush clams inside the bags and consume the soft meats. Untreated polyester mesh is also weakened through physical scouring by wave and current-driven sediments. The second method consists of broadcast planting of clam seed on the bottom which is then covered with protective netting that is staked to the bottom. Harvest of this bottom-planted seed is accomplished using equipment common to wild harvesters (i.e., bull rakes).

BMPs specific to nets and net coatings require that all culture materials, cover nets, and bags placed in the water shall be clean and free of pollutants, including petroleum based products such as creosote, oils, and greases, or other pollutants. Net coatings must be used in accordance with the product label.

Producing hard clams on submerged lands is the largest marine aquaculture business in Florida. The latest data available from the Florida Agricultural Statistics Service indicated that 137 farms voluntarily reported farm-gate sales of clams totaling $11.6 million in 2012, which yields a total commercial impact of $50 million to the State of Florida. Still, clam farming, as with other forms of aquaculture, is a very high-risk enterprise and is subject to catastrophic production declines and economic losses when market environmental and climatic conditions are not favorable.

FDACS has authorized hard clam farming within 20 AUZ in the following coastal counties: Dixie, Levy, Charlotte, Lee, Indian River, Brevard, Volusia, Franklin and most recently, Collier (See FDACS Report, RGP099-10Oct2014). Currently, 3 of these AUZ are located within the designated boundaries of Gulf sturgeon critical habitat unit 14 (Suwannee Sound; Table 3). In order to be consistent with the PDCs of PGP SAJ-99, the State of Florida and FDACS will not issue any new leases within Gulf sturgeon critical habitat under this programmatic general permit. New leases in Gulf sturgeon critical habitat would require a separate individual permit from the USACE and consultation with NMFS. Those current clam farmers within the Gulf sturgeon critical habitat must comply with provisions of their SSL lease and follow all BMPs. Additionally, FDACS has authorized 5 AUZs within the designated boundaries of smalltooth sawfish critical habitat (Table 3). All AUZs are located away from any red mangroves, and in waters deeper than 36 inches (in) mean lower low water (MLLW), so as to avoid any impacts to the essential features (i.e., shallow, euryhaline waters and red mangroves) of smalltooth sawfish critical habitat (S. Wilhelm, FDACS, pers. comm. to N. Silverman, NMFS, April 15, 2010). Clam leases are not expected to affect sea turtle hatchling egress to the open water environment or the transit of nesting female sea turtles to and from the beach due to the relative small size of the leases and the abundant adjacent open water areas.

B. Oyster Aquaculture – Shell or "cultch" planting, as well as oyster transplanting, are important for maintaining and enhancing productive oyster habitat. The State of Florida has maintained an effective shell planting program since 1913. Since 1999, FDACS has maintained a shell planting level of 250,000 bushels of shucked shell every year. To ensure the continued productivity of public oyster reefs in Florida, FDACS has deposited large amounts of cultch material to provide an excellent base for oyster larvae - commonly called "spat"- to attach to. In Florida, significant acreage of productive oyster reefs is located in waters where harvesting for direct-to-market sale is prohibited due to public health problems associated with actual or potential pollution. Transplanting takes advantage of the oyster’s ability to depurate (cleanse itself of contaminates) and offers a practical means to use a previously debilitated resource, making these oysters safe for human consumption. Additionally, there are abundant stocks of juvenile oysters that grow on intertidal oyster bars. These intertidal oyster reefs are exposed at low tides and the oysters often do not grow to legal size. Oysters which are transplanted from the poor-growing intertidal areas are able to take advantage of less stressful growing conditions and grow to a legal and marketable quality size in a short time period. When seed oysters are transplanted in the summer, harvesting may begin the following season and continue for several years as oysters grow to market size. Transplanting activities are often conducted as cooperative management programs between FDACS and local oystermen's associations. Over the past 20

years, more than 4 million bushels of juvenile and adult oysters have been transplanted within 4 coastal counties (Franklin, Dixie, Levy, and Wakulla).

FDACS plants oyster shells on SSL, but this program does not involve any leases. Shucked shell and transplanted oysters are placed on existing oyster reefs that are open to the public. The harvesting of these oysters is open to anyone possessing the required license from Florida Fish and Wildlife Conservation Commission, and there are bag limits and specific collection methods imposed. No mechanical harvesting of oysters is allowed on oyster reefs associated with FDACS's oyster aquaculture program unless specified in the lease agreement or development plan for culture operations. FDACS only places shucked shell and transplanted oysters onto existing shell substrate; they do not establish new reefs in areas that are vegetated or bare substrate (S. Wilhelm, FDACS, pers. comm. to N. Silverman, NMFS, May 13, 2010). FDACS's oyster aquaculture program does occur within the designated boundaries of Gulf sturgeon critical habitat, but shell material and transplanted oysters are only placed onto existing shell substrate (i.e., oyster reefs), which will prevent and avoid any effects to the essential features of critical habitat.

C. Off-bottom Aquaculture - The FDACS has proposed to add 3 new types of off-bottom culture methods. FDACS anticipates that these new activities will add 83 new participants with leases totaling 377 ac in the Alligator Harbor AUZ (Franklin County), Dog Island AUZ (Levy County), Pelican Reef AUZ (Levy County), Long Bar AUZ (Dixie County), Horseshoe Reef AUZ (Dixie County), Oyster Bay AUZ (Wakulla County), and West Bay AUZ (Bay County). The first method is the floating basket system (Figure 2). Floating baskets are tethered together by two 150-ft lines strung in series. These lines are anchored at each end to the bottom using 5-in x 30-in screw-in tie-downs. Installation methods for the screw-in tie-downs will vary by site and aquaculture operator. However, we analyze the effects of impact hammer driving below as a worst-case scenario. The estimated bottom footprint created by 5 runs anchored by 10 screw-in anchors is 4.4 in^2 (0.31 ft^2; 0.000007% of an acre). The main lines are constructed of PolyDac™ (polyester/polyethylene blend) line or 6-millimeter (mm) monofilament encased by an 11-mm outer poly casing (or similar strength materials), pulled taut (20% line stretch) between the anchors. The baskets are attached to these main lines by 3/8-in lead line, 6-mm monofilament line encased by an 11-mm outer poly casing, or by clips 9 to10.8 mm long (or similar strength materials). The baskets then float via integrated buoys.

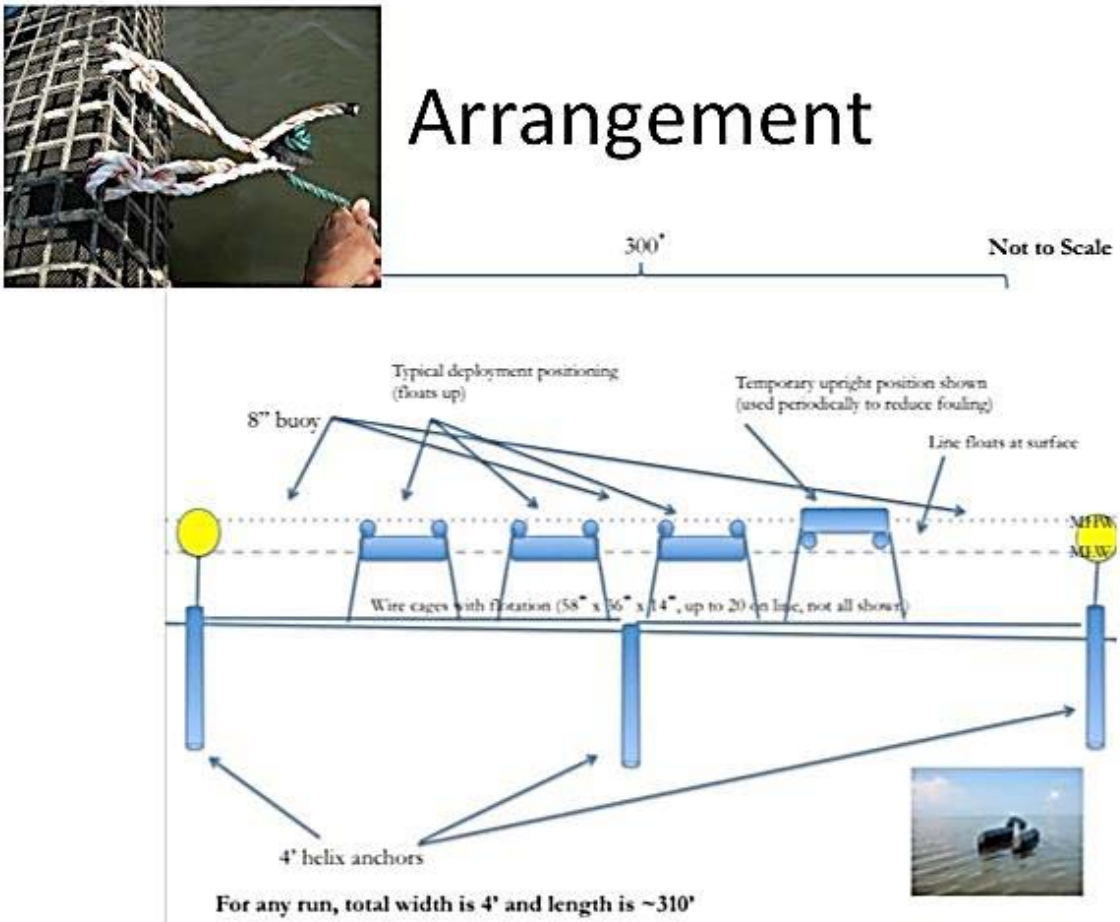

Figure 2. Diagram of a floating basket, off-bottom aquaculture design (diagram courtesy of W. Walton, Auburn University). The 3 baskets on the left are submerged in grow-out mode, while the basket on the right is emergent in dessication mode to remove biofouling.

The second method being proposed is the suspended basket or longline system (Figure 3). Baskets are suspended from a tightly strung line that is clipped to posts that hold the line parallel to the bottom. Each end of the line is anchored with posts. The installation methods for these posts will vary by site and aquaculture operator. However, we analyze the effects of impact hammer driving below as a worst-case scenario. These lines are adjustable with numerous positions ranging from above the high tide mark to below the low tide mark. The adjustability of these lines allows the baskets to be dried to control for biofouling and to adjust in-water depths to maximize feeding and growth. The main line is constructed of PolyDac™ line or 6-mm monofilament encased by an 11-mm outer poly casing (or similar strength materials), pulled taut (20% line stretch) between the posts. The estimated footprint created by 8 runs of 560 with 560 2-in diameter PVC pipes and 16 8-inch wooden posts is 2,562. 72 in² (17.8 ft^2; 0.0041% of an acre).

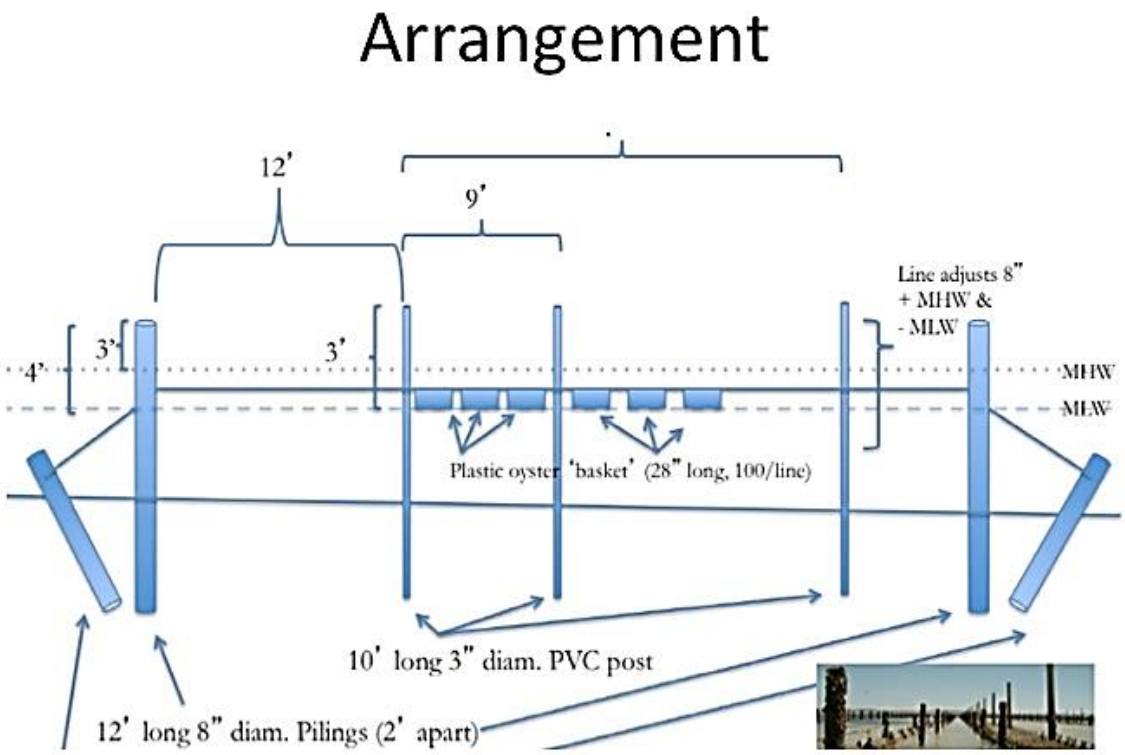

Figure 3. Diagram of a suspended basket or longline, off-bottom aquaculture design (diagram courtesy of W. Walton, Auburn University).

The third methodology proposed is the off-bottom basket (Figure 4). There are a variety of off-bottom basket designs, but most utilize PVC-coated wire to form a rectangular container approximately 3 by 4 ft with various heights depending on the number of levels, or "stacks," that hold oysters in stiff plastic mesh bags. The mesh size of the bag varies depending on grow-out stage of the oysters. These baskets are connected in "runs" of 40-45 that are connected to a 200-ft line that is anchored at each end. The baskets are 1 ft off the sea bottom on legs formed from the wire. These baskets are anchored to the bottom by 8-in diameter wooden posts at each end. The installation methods of these posts will vary by site and aquaculture operator. However, we analyze the effects of impact hammer driving below as a worst-case scenario. A riser, which is a 2-in PVC pipe, is then driven into the bottom at an interval of 10 ft. The estimated bottom footprint created by 8 runs of 560 2-in diameter PVC pipes and 16 8-in wooden posts is 2,562.72 in^2 or 17.8 ft^2 that represents 0.0041% of a 1-ac area.

Figure 4. Example of an off-bottom basket culture system (photo courtesy of Chesapeake Bay Oyster Company)

Authorities under Which the Proposed Action will be Conducted

Implementing regulations for USACE permits, including PGPs, are detailed at 33 CFR 320-331. The process for issuing permits under PGP SAJ-99 is a joint process between the USACE and FDACS. FDACS authorizes live rock and marine bivalve aquaculture activities within SSL leases issued by the Board of Trustees for Internal Public Improvement Trust Fund. All applications to utilize SSL must be reviewed and approved by the Board which is made up of the Governor and his or her cabinet. Pursuant to the Clean Water Act (CWA) (33 U.S.C. 1344) and Section 10 of the Rivers and Harbors Act of 1899 (RHA) (33 U.S.C. 403), the USACE has the authority to issue general permits (regional, programmatic, and nationwide) for any category of projects that are substantially similar in nature, and result in no more than minimal adverse effects on the environment, either individually or cumulatively.

PGPs are a type of general permit[4] issued by the USACE that authorize, for the purposes of Section 10 of the RHA, and Section 404 of the CWA, certain activities that are also regulated by another federal, tribal, state, or local regulatory authority. The purpose of PGPs is to improve the regulatory process for applicants, enhance environmental protection, reduce unnecessary duplicative procedures and evaluations, and make more efficient use of limited resources. PGPs are valid for a maximum of 5 years (33 CFR 325.2(e)(2)), and must be re-evaluated prior to reissuance.

[4] The term "general permit" is defined at 33 CFR 322.2(f) and 33 CFR 323.2(h). PGPs are a type of general permit, and are defined at 33 CFR 325.5(c)(3).

The USACE retains the authority to modify, suspend, or revoke a PGP when the USACE believes that appropriate protection is not being afforded to the environment or any other aspect of the public interest, or when the USACE concludes that adverse environmental effects are more than minimal, either individually or cumulatively. Additionally, the USACE always retains its authority to require an individual USACE permit in any given case for any particular project, even if the project meets all the requirements of the PGP. Last, the USACE retains the full range of its enforcement authority and options where it believes that a project does not comply with the requirements or conditions of a PGP, regardless of whether the project has been permitted by the federal, tribal, state, or local regulatory authority. These options and authorities are described in Appendix 2 to this consultation.

Project Design Criteria

Based on past permitting practices of the USACE and ESA Section 7 consultations on similar aquaculture activities, PDCs applied to permitted aquaculture activities limit the environmental effects to those that are insignificant, discountable, or beneficial and never result in take or adverse effects to designated critical habitat. The nature of the aquaculture activities involved in the individual lease dictate which of the PDCs will be applicable to that particular future action covered by this consultation. The PDCs listed below are non-discretionary requirements of PGP SAJ-99 and therefore, of leases authorized through FDACS.

1. The work authorized herein includes the deposition of materials and other work in the waters of the State of Florida as described above for the purposes of live rock and marine shellfish aquaculture.

2. This programmatic general permit does not authorize the placement of materials for the construction and/or renourishment of artificial reefs, the construction of impoundments and/or semi-impoundments of waters of the United States, or structures such as but not limited to aquaculture docks, circulating systems including inflow and outfall structures, platforms, etc. Furthermore, this permit does not authorize the deployment of offshore and/or nearshore cages for the culture or holding of motile species or the placement of materials for lobster harvesting (such as lobster casitas).

3. Individuals conducting marine aquaculture must possess an Aquaculture Certificate of Registration issued pursuant to Section 597.004, F.S., and be compliant with Rule 5L-3 Florida Administrative Code (F.A.C.), all aquaculture activities authorized by FDACS must be performed in accordance with the State of Florida's *Aquaculture Best Management Practices*.

4. Individuals conducting marine aquaculture must have a current SSL lease issued by the Board of Trustees of the Internal Improvement Trust Fund and not be in violation of its terms and conditions.

5. As part of the lease approval process, a site evaluation report will be completed. The report, which may include, but not be limited to, videotapes of underwater surveys, photographs of underwater surveys, and/or written assessments of underwater surveys, shall be prepared by FDACS or a source acceptable to the Department and shall demonstrate that the proposed site:

a) Is not a hazard to safe navigation or a hindrance to vessel traffic.
b) Avoids traditional fishing operations, or other public access.
c) Avoids impacts to naturally occurring hard bottom habitat and submerged aquatic vegetation and mangrove (minimum 50 ft setback from the preceding).
d) Avoids impacts to other aquaculture activities.
e) Contains natural underlying substratum that is primarily hard packed sand, hard shell hash, or soft sediment.
f) Avoids river mouths, ocean passes/cuts, and navigation channels.

6. The applicant's lease application with the State shall identify the site on a nautical chart in sufficient detail to allow for site inspection, and shall provide accurate latitude and longitude coordinates so that the site can be located by Differential Global Positioning System (GPS) equipment.

7. For the deposition of material for live rock aquaculture only, each permittee shall be limited to a single acre of SSL leased by the State of Florida. Deposition of material may occur in 1 location or in several locations.

8. Sites shall be inspected by FDACS to confirm compliance with the PDCs in this permit.

9. Materials deposited or used on the aquaculture site must be approved by FDACS. Materials for live rock or marine shellfish aquaculture activities must be deployed so as to remain in place during storm events and not damage adjacent submerged aquatic vegetation (SAV) or natural hard bottom communities.

10. All materials placed on the site must be in accordance with the state lease (e.g., requirement for the use of aid-to-navigation) and FDACS' BMPs. Disposition of materials outside of a State lease or in violation of FDACS' BMPs is prohibited without a separate permit from the USACE.

11. All materials used in aquaculture operations must be non-toxic and be free of contaminants and non-indigenous flora and/or fauna.

12. All materials for live rock aquaculture must be placed on the site by hand, or lowered completely to the bottom by crane. Deposited materials shall not be allowed to free fall to the bottom, and all deposition shall occur while the vessel is at anchor. Rocks may not be placed over naturally-occurring reef outcrops, limestone ledges, coral reefs, or vegetated areas. A minimum setback of 50 ft must be maintained from naturally vegetated or hard bottom habitats. The live rock aquaculture operation may not occupy more than 25% of the water column. The permittee shall be required to submit "as-built" (post-activity) reports to FDACS. The reports shall depict the project site subsequent to each deposition activity. The actual configurations and locations of the deposited materials and the distance from existing naturally occurring hard bottom habitat and SAV shall be clearly depicted.

13. Harvest of aquacultured species and live rock shall be in accordance with Chapter 597, F.S., and the BMPs adopted therein. No drilling or blasting is authorized under this general permit.

Each rock must be visually inspected for the presence of listed coral species prior to harvesting and no rock may be harvested if any listed coral species have attached. FDACS has stated they will continue to provide an informational pamphlet about listed coral species to aid in the identification of any colonies that may settle on aquacultured live rock.

14. For projects in waters accessible to sea turtles, smalltooth sawfish, or Gulf sturgeon, the Department/permittee will utilize NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions* (see http://www.saj.usace.army.mil/Divisions/Regulatory/ sourcebook.htm) and other requirements as listed in the PDCs in this consultation for each specific aquaculture activity. Note: These conditions may be subject to revision at any time. It is the USACE's intention that the most recent version of these conditions will be utilized during the evaluation of the permit application.

15. Aquaculture activities are limited in ESA-designated critical habitats as described below:

- *Acropora* critical habitat: Leases are allowed in the geographic limit of critical habitat; however, they must meet the criteria in Conditions 12 and 13 above.
- Gulf sturgeon critical habitat: Within the boundaries of Gulf sturgeon designated critical habitat, cultch materials for FDACS's oyster planting program shall only be allowed to be deposited on existing shell substrata. Additionally, the off-bottom basket methodology is prohibited within Gulf sturgeon designated critical habitat, but the floating basket and suspended basket or longline methodologies are allowed for shellfish aquaculture.
- Johnson's seagrass critical habitat: Aquaculture lease permits are prohibited in Johnson's seagrass critical habitat under PGP SAJ-99.
- Loggerhead critical habitat: Only one AUZ (Whitehorse Key) is located in loggerhead critical habitat. New AUZs or leases are allowed within loggerhead critical habitat under PGP SAJ-99 provided the aquaculture systems are set perpendicular to the nesting beach to reduce effects on hatchling egress to the open water and the transit of nesting females to and from the beach. Additionally, the linear footage of the part of the aquaculture system that is parallel to the beach may not be more than 10% of the linear footage of the critical habitat unit's nesting beach.
- North Atlantic right whale critical habitat: No AUZ's or leases exist in North Atlantic right whale critical habitat and no new AUZs or leases are allowed within North Atlantic right whale critical habitat under PGP SAJ-99.
- Smalltooth sawfish critical habitat: Within the boundaries of smalltooth sawfish critical habitat, leases will be located away from any red mangroves, and in waters deeper than 36 in MLLW, so as to avoid any impacts to the essential features (i.e., shallow, euryhaline waters and red mangroves) of smalltooth sawfish critical habitat.

16. This programmatic general permit has undergone consultation with USFWS and NMFS on the listed species and any designated critical habitat listed on Tables 1 and 2. If an individual proposed activity does not conform to the PDCs of PGP SAJ-99 concerning listed species or critical habitat, the application shall be referred to the USACE, which will request the appropriate Service to initiate additional Section 7 consultation. Until consultation is concluded, the proposed activity cannot be authorized under PGP SAJ-99.

17. No work shall be authorized by PGP SAJ-99 that may adversely impact wetlands, hard or soft corals, including listed coral species: elkhorn (*Acropora palmata*), staghorn (*Acropora cervicornis*), pillar (*Dendrogyra cylindrus*), rough cactus (*Mycetophyllia ferox*), lobed star (*Orbicella annularis*), mountainous star (*O. faveolata*), and boulder star (*O. franksi*) corals, estuarine emergent, marine emergent, mangrove, and/or the following species of submerged aquatic vegetation: shoal grass (*Halodule wrightii*), paddle grass (*Halophila decipiens*), star grass (*Halophila engelmannii*), Johnson's seagrass (*Halophila johnsonii*), sago pondweed (*Potamogeton pectinatus*), clasping-leaved pondweed (*Potamogeton perfoliatus*), widgeon grass (*Ruppia maritima*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testudinum*), tapegrass (*Vallisneria americana*), horned pondweed (*Zannichellia palustris*), and eel grass (*Zostera marina*). Indirect effects include secondary and cumulative effects. In addition, the project cannot have adverse impacts on any other essential fish habitat identified under the Magnuson-Stevens Fishery Management Act.

18. PGP SAJ-99 is not authorized within the boundaries of the following managed areas until the authorities responsible for their management have been contacted by FDACS and offered an opportunity to express their views on projects proposed in their respective areas of responsibility. All responses shall be included in the FDACS permit file.

a) Florida State Parks: All Florida State parks

b) National Marine Sanctuaries: Florida Keys National Marine Sanctuary

c) National Estuarine Research Reserves: All National Estuarine Research Reserves

19. Additional federal permits may be required for aquaculture operations in waters of the State of Florida which are under the jurisdiction of other federal authorities, such as the U.S. Environmental Protection Agency, U.S. Coast Guard, or NMFS.

20. The USACE District Commander reserves the right to require that any request for authorization under this programmatic general permit be processed as an individual permit, including any concurrent consultations, as applicable.

21. This programmatic general permit will be valid for a period of 5 years from the date of issuance of this programmatic consultation unless suspended or revoked by the District Commander prior to that date. If PGP SAJ-99 expires or is revoked prior to completion of the authorized work, authorization of activities that have commenced or are under contract to commence in reliance on PGP SAJ-99 will remain in effect provided the activity is completed within 12 months of the date PGP SAJ-99 expired or was revoked; and that such activities are conducted in compliance with PGP SAJ-99 and any lease agreement terms or conditions.

Project-Specific Review and Consultation Process for the Proposed Action

Prior to authorizing any new type of aquaculture activity that is not currently being conducted on SSL within an approved lease issued under PGP SAJ-99, FDACS will certify compliance with the PDCs of PGP SAJ-99 for each individual aquaculture lease. FDACS will submit this certification along with the resource report for each individual aquaculture lease to the USACE

and to NMFS Protected Resources Division, Southeast Regional Office, via email (nmfs.ser.SAJ99@noaa.gov). In addition to or as part of the information reports and surveys required by the BMPs and PDCs discussed above, the resource report will include the following information:

Provide all information as an excel spreadsheet using the formatting requirements below. Each number below shall be a column in the spreadsheet.

1. Date Sent to NMFS: This is the date the email was provided to NMFS.
2. FDACS Number: This is the file number associated with Aquaculture Lease Applications.
3. Project Address: This is the address of the lease holder. Any formatting is fine in this category.
4. Latitude: This shall be formatted in decimal degrees to 5 places as shown in the examples.
5. Longitude: This shall be formatted in decimal degrees to 5 places as shown in the examples. Please provide a negative symbol before the longitude to denote the western hemisphere.
6. Critical Habitat Unit: This shall be provided in the following acronym style with no spaces or hyphens, as shown in the examples. This allows for accurate sorting in Excel. Projects occurring in critical habitat and proposed critical habitat are only authorized if they do not impact the essential features of said critical habitat.
    - A CH (*Acropora* critical habitat).
    - LHST CH (loggerhead critical habitat)
    - GS CH Unit # (Gulf sturgeon critical habitat, unit # = 9-14)
    - STSF CH CHEU (Smalltooth sawfish critical habitat Charlotte Harbor Estuary Unit)
    - STSF CH TTIU (Smalltooth sawfish critical habitat Ten Thousand Islands/Everglades Unit)
    - N/A (not applicable because the project is not located within a critical habitat unit)
7. Whether any of the essential features of critical habitat are located within or adjacent to the approved lease site. If yes, list the essential features present.
8. Acreage and types of activities/facilities authorized under PGP SAJ-99.
9. Description of any resources present within and adjacent to the approved lease site.
10. Report marine mammal interactions per the Marine Mammal Authorization Program.
11. All PDCs Met: Are all of the applicable PDCs defined in this document being met by the proposed project? Answer “yes” or “no.”

NMFS Protected Resources Division will receive a copy of the resource report via email and will have the opportunity to assess the individual proposed project’s compliance with the PDCs (PDCs) identified above, and to ensure that additive effects of aquaculture activities permitted under PGP SAJ-99 do not result in adverse effects to protected species. Since the previous consultation, we have received 22 of these reports; all of which have met the conditions of SAJ-99. NMFS Protected Resources will have the opportunity to review the resource report for each individual activity proposed to be authorized under PGP SAJ-99 to ensure consistency with the PDCs of the PGP. If NMFS Protected Resources does not concur with FDACS’s or the

USACE's certification of compliance and consistency with this programmatic consultation, including the terms and requirements of PGP SAJ-99, they will notify FDACS and the USACE via email that the individual activity proposed will require further review and consultation under Section 7 of the ESA. If no notice is given by NMFS Protected Resources after 30 days, compliance is implied.

Further Consultation Required

If the individual proposed activity submitted to NMFS Protected Resources (nmfs.ser.SAJ99@noaa.gov) does not comply with the PDCs established in this programmatic consultation, and/or introduces potential effects not previously considered, and/or is likely to result in adverse effects to listed species or designated critical habitat, then, the individual proposed activity will not qualify for authorization under PGP SAJ-99. FDACS and the USACE may seek to authorize the activity under an individual permit which will likely require further review and consultation under Section 7 of the ESA.

Biennial Comprehensive Review

The USACE, FDACS, and NMFS will conduct a biennial review of the operation of PGP SAJ-99. This review will evaluate, among other things, whether the scope of the activity is consistent with the description of the proposed activities; whether the nature and scale of the effects predicted (see below) continue to be valid; whether the PDCs are being complied with and continue to be appropriate (see above); and whether the project-specific consultation procedures are being complied with and are effective. To assist in this biennial review, FDACS will submit annual reports in the format provided above under the "***Project-Specific Review and Consultation Process for the Proposed Action***" to the USACE and NMFS. We did not receive a report in 2013 due to communication coordination with USACE, but we did receive the 2014 report as required by the previous consultation.

Potential Effects of the Proposed Action

We considered the potential effects of the proposed action on listed species and designated critical habitat under our purview. Five species of sea turtles (loggerhead, green, hawksbill, Kemp's ridley, and leatherback), smalltooth sawfish, Gulf sturgeon, and listed coral species, protected by the ESA, can be found in or near the action area and may be affected by the project. Designated critical habitat for Gulf sturgeon, smalltooth sawfish, Johnson's seagrass, loggerhead sea turtles, and elkhorn and staghorn corals is located in or near the action area (i.e., Florida coastal waters).

Although Johnson's seagrass may be found in the action area, the PDC's prevent any effect to the species because no activities are authorized on any SSL containing submerged aquatic vegetation and leasing is prohibited in Johnson's seagrass critical habitat. Therefore, we believe the activities proposed under PGP SAJ-99 will have no effect to Johnson's seagrass and its critical habitat.

Listed coral species may be found in the action area; however, the PDC's prohibit impacts to listed coral species other than live rock activities that may encounter newly settled corals. Potential impacts to listed corals from live rock activities are discussed below. We believe there will be no effect to listed corals from any other activities authorized under PGP SAJ-99.

Additionally, while leases are allowed in the boundaries of critical habitat for elkhorn and staghorn coral, there is a minimum setback of 50 ft from any hard-bottom structure, so there are no potential impacts to the essential features, and there are no other potential routes of effects to designated critical habitat.

No AUZ's or leases have been created in North Atlantic right whale critical habitat, they are not allowed per PDC 15, and there are no potential routes of effects to designated critical habitat.

The essential features of smalltooth sawfish critical habitat (i.e., shallow, euryhaline waters and red mangroves) will not be affected by the proposed aquaculture activities. Two PDCs (15 and 17) have been listed that will protect these essential features: Condition 15 prohibits leases in waters shallower than 36 in MLLW, and Condition 17 prohibits any work which impacts red mangroves. Therefore, there is no effect to the essential features of smalltooth sawfish critical habitat.

Potential effects to listed species and their designated critical habitat are addressed below for each specific type of aquaculture activity authorized by PGP SAJ-99.

I. Live Rock Aquaculture – the production of an inert calcareous rock colonized by sessile marine organisms (i.e., coral, anemones, sea fans) that is sold in the marine aquarium trade.

Potential Effects on Listed Species
Sea turtles, Gulf sturgeon, smalltooth sawfish, and listed coral species, can be found in or near areas where live rock aquaculture leases have been and might be authorized. Sea turtles, Gulf sturgeon, and smalltooth sawfish might be affected if they were to come into contact with live rock aquaculture related vessels or equipment. Vessels and equipment utilized in live rock aquaculture operations typically transport large volumes of material by barge in order for their business to be profitable. As such, barge vessels and towing equipment are not typically operating at high speeds. Sea turtles, Gulf sturgeon, and smalltooth sawfish are mobile animals and will likely avoid any interactions with vessels and equipment utilized in the live rock aquaculture industry. Due to the vessel characteristics and the natural avoidance behavior of these species, we believe these effects are discountable. Sea turtles and smalltooth sawfish may be affected by being temporarily unable to use a site for shelter habitat due to potential avoidance of areas in or near an AUZ because of aquaculture activities and related noise; but these effects will be insignificant, given the limited area an AUZ encompasses and the short duration of activity at aquaculture sites (≤24 hours).

Sea turtles, Gulf sturgeon, and smalltooth sawfish might be affected if they were to be struck by a rock or related equipment while leaseholders are depositing or harvesting rock within their lease. As a precaution, PGP SAJ-99 PDC 12 and the live rock BMPs require that all rock must be placed on the site by hand, or lowered completely to the bottom by crane. Deposited materials shall not be allowed to free fall to the bottom, and all deposition shall occur while the vessel is at anchor. Sea turtles, Gulf sturgeon, and smalltooth sawfish are highly motile species and will likely avoid areas while lease holders are actively placing or harvesting live rock. Furthermore, according to PDC 14, in waters accessible to sea turtles, Gulf sturgeon, and smalltooth sawfish, permittees are required to utilize NMFS's *Sea Turtle and Smalltooth Sawfish*

Construction Conditions. Therefore, NMFS considers any effects to sea turtles, Gulf sturgeon, or smalltooth sawfish from placing or harvesting live rock to be discountable.

While sea turtles could be affected if live rock activities were to take place in areas that contain foraging resources such as seagrass and hard bottom habitats, PDCs 9, 12, and 17 restrict deposition of material in these areas. Further, resource surveys have already been conducted in AUZ's to ensure there are no impacts to vegetated or hard-bottom areas. Additionally, the State of Florida will not grant SSL leases where work conducted on those leases might adversely affect seagrasses or hard bottom habitats. Therefore, the potential routes of effects to sea turtles due to impacts on foraging are considered discountable.

Gulf sturgeon foraging and refuge habitat will not be affected by live rock aquaculture activities because those activities do not take place in the range of Gulf sturgeon. Smalltooth sawfish foraging and refuge habitat will not be affected because the PDC's prevent impacts to mangroves.

Listed coral species might be affected if hard bottom habitats were to be impacted by live rock aquaculture operations that could thereby diminish the amount of potential habitat suitable for colonization by these species. Because PDC 12 requires a minimum setback of 50 ft from all hard bottom habitats; we believe the likelihood of listed coral species' being affected by impacts to hard bottom is discountable.

Listed coral species might be affected if they were to colonize rock placed for the purpose of cultivating live rock and then subsequently be harvested. However, PDC 13 requires that all rock must be visually inspected for the presence of listed coral species prior to harvesting, and that if any listed coral species are present, then the harvesting of that rock is prohibited (i.e., it must be left in place). FDACS has stated they will continue to provide an informational pamphlet about listed coral species to aid in the identification of any colonies that may settle on aquacultured live rock. FDACS has stated they will also provide written notice to permit holders and a general public notice regarding the prohibition of the harvest of aquacultured live rock with ESA-listed coral species growing on it. Therefore, we conclude the potential effect to listed corals by inadvertent harvesting of a live rock that has coral attached and subsequently returning that live rock/coral to the water will be insignificant.

Potential Effects on Designated Critical Habitat (See Appendix 3 for critical habitat essential features)

Gulf sturgeon critical habitat: No effects to Gulf sturgeon critical habitat are expected. Live rock aquaculture does not occur within the area designated as Gulf sturgeon critical habitat. The water temperatures in the northern Gulf of Mexico do not support growth of benthic organisms desired by live rock aquaculture producers.

Loggerhead critical habitat: Loggerhead critical habitat located in Whitehorse Key may be affected by live rock aquaculture activities; however, the depth and turbidity of this AUZ are not conducive for live rock culture activities. Further, FDACS restricts water column usage of live rock sites to 25% of the water column; thereby maintaining ample room for movement of sea

turtles. Therefore, live rock is not likely to be cultured in this area and the effects to loggerhead critical habitat are discountable.

II. Shellfish Culture

A. ***Hard Clam Aquaculture*** – Hard clam farmers plant their crops on SSL leased from the State of Florida.

Potential Effects on Listed Species

Sea turtles, Gulf sturgeon, smalltooth sawfish, and listed coral species can be found in or near areas where hard clam aquaculture leases have been and might be authorized. Sea turtles, Gulf sturgeon, and smalltooth sawfish might be affected if they were to come into contact with hard clam aquaculture related vessels or equipment. Vessels and equipment utilized in hard clam aquaculture operations typically transport their material and products within very shallow intertidal areas, and therefore operate at slow speeds in and around hard clam aquaculture areas. Sea turtles, Gulf sturgeon, and smalltooth sawfish are mobile animals and will likely avoid any interactions with vessels and equipment utilized in the hard clam aquaculture industry. Due to the safe operating speeds for hard clam aquaculture vessels and the natural avoidance behavior of these species, we believe these effects are insignificant. Sea turtles, Gulf sturgeon, and smalltooth sawfish may be affected by being temporarily unable to use the site for shelter habitat due to potential avoidance of aquaculture activities and related noise; but these effects will be insignificant, given the short duration of activity allowed at aquaculture sites (≤24hours).

Sea turtles, Gulf sturgeon, and smalltooth sawfish might be affected if hard clam aquaculture activities were to increase turbidity levels to such an extent that it excluded them from the area or resulted in injury. Hard clam aquaculture activities are designated in estuarine environments that are naturally highly turbid. Any increases in turbidity levels from the placement or harvesting of hard clams are expected to be localized and temporary, and therefore insignificant.

Sea turtles, Gulf sturgeon, and smalltooth sawfish might be affected if they were to become entangled in the net mesh bags utilized for hard clam aquaculture. Yet, hard clam aquaculture utilizes net bags with a very small mesh size (~1/4-in stretch mesh) and there have been no reported entanglements with this gear since shellfish aquaculture began in 1995[5]. Furthermore, all hard clam farmers are required to comply with the State of Florida's aquaculture BMPs, which require that all of the net bags be properly secured to the benthos. Therefore, the likelihood of a Gulf sturgeon or a smalltooth sawfish becoming entangled in a net mesh bag is considered discountable.

Sea turtle, Gulf sturgeon, and smalltooth sawfish foraging and refuge habitat will not be affected by hard clam aquaculture activities because Gulf sturgeon are opportunistic foragers that will utilize the ample area adjacent to lease sites. Additionally, no new hard clam lease sites will be authorized in Gulf sturgeon critical habitat. Smalltooth sawfish nursery foraging and refuge habitat will not be affected because the PDC's prevent impacts to mangroves and shallow, euryhaline waters. Adult foraging habitat will not be affected due to the small size of lease sites and the ample foraging areas adjacent to lease sites.

[5] Wilhelm, III. S. Director, FDACS, Division of Aquaculture, Personal communication to N. Silverman, May 13, 2010.

Sea turtles, Gulf sturgeon, and smalltooth sawfish might be affected if the placement of bags seeded with hard clams, within AUZ or individual leases, were to reduce prey availability/abundance. However, marine bivalve reefs are known to promote macrobenthic secondary production of foods for primary predators,[6] such as sea turtles, Gulf sturgeon, and smalltooth sawfish. Therefore, the potential effect to sea turtles, Gulf sturgeon, and smalltooth sawfish prey availability/abundance is considered to be insignificant or beneficial.

Potential Effects on Designated Critical Habitat
Designated critical habitats for Gulf sturgeon and loggerhead sea turtles have the potential to be affected by individual hard clam aquaculture activities permitted under PGP SAJ-99 because of the location where these activities might occur in relation to the nearshore coastal environment within Florida waters.

Gulf sturgeon critical habitat: Gulf sturgeon designated critical habitat will not be affected by the proposed aquaculture activities because PGP SAJ-99 PDC 15 prohibits new, hard clam aquaculture within the designated boundaries of Gulf sturgeon critical habitat, except for the newly proposed floating or suspended methods, which are discussed below. Existing leases in Gulf sturgeon critical habitat will have no effect on the essential features because hard clam aquaculture activities occur on hard-bottom substrate and thus the essential features do not exist within existing lease sites.

Loggerhead nearshore reproductive critical habitat: Loggerhead critical habitat may be affected if aquaculture activities impede egress by hatchlings to the open water or the movement of nesting females to and from the beach by affecting the nearshore reproductive or migratory corridor essential features. However, hard clam operations occur on the bottom, so there would be no interference with a turtle's swimming behavior or ability to access nesting beaches. Given the relatively small size of leases and the ample adjacent open water within and surrounding lease sites, effects to loggerhead critical habitat are discountable.

B. *Oyster Aquaculture* – Shell or "cultch" planting, as well as, oyster relaying and transplanting are important for maintaining and enhancing productive oyster habitat.

Potential Effects on Listed Species
Sea turtles, Gulf sturgeon, and smalltooth sawfish, can be found in or near areas where oyster aquaculture leases have been and might be authorized. Sea turtles, Gulf sturgeon, and smalltooth sawfish might be affected if they were to come into contact with oyster aquaculture related vessels or equipment. Oyster reefs utilized for aquaculture are typically found in shallow intertidal estuaries, and collection/transplant activities typically occur during low tide while the oysters are exposed. Vessels utilized for oyster aquaculture have to transit across very shallow intertidal areas, and therefore operate at slow speeds in around oyster aquaculture areas. In addition, no mechanized harvest of oysters is authorized under SAJ-99. Sea turtles, Gulf sturgeon, and smalltooth sawfish are mobile animals and will likely avoid any interactions with vessels and equipment utilized in the oyster aquaculture industry. Due to the vessel operating

[6] Peterson et al. 2007. Estuarine habitat productivity ratios at multiple trophic levels. NOAA Final Report, Office of Response and Restoration. 62 pp.

speeds in the intertidal areas around oyster reefs and the natural avoidance behavior of these species, we believe these effects are insignificant.

Sea turtles, Gulf sturgeon, and smalltooth sawfish may be affected by being temporarily unable to use the site for shelter habitat due to potential avoidance of oyster aquaculture activities and related noise; but these effects will be insignificant, given the short duration of activity allowed at aquaculture sites (i.e. ≤24 hours).

Sea turtles, Gulf sturgeon, and smalltooth sawfish may be affected if shell material or transplanted oysters were to affect the availability/abundance of sea turtle, Gulf sturgeon, and smalltooth sawfish prey items. However, oyster aquaculture activities only take place on existing oyster reefs. SAJ-99 prohibits new oyster aquaculture activities in areas not already containing healthy oyster reefs. In addition, NMFS has determined based on the best scientific and commercial data available that the availability/abundance of prey items tends to be increased by the presence of healthy oyster reefs.[7] Therefore, the potential effect to the availability/abundance of prey items is considered beneficial.

Foraging opportunities for sea turtles, Gulf sturgeon, and smalltooth sawfish may be affected by increases in turbidity. However, oyster aquaculture activities are designated in intertidal estuarine environments that are naturally highly turbid. SAJ-99 prohibits new oyster aquaculture activities in areas not already containing healthy oyster reefs, so no cultch or shell material is to be placed on bare sand or mud; further reducing the amount of turbidity likely to be caused by oyster aquaculture activities. Any increases in turbidity levels from the placement or harvesting of oysters are expected to be localized and temporary, and therefore insignificant.

Potential Effects on Designated Critical Habitat

Gulf sturgeon critical habitat: Designated critical habitat for Gulf sturgeon has the potential to be affected by oyster aquaculture activities. NMFS has identified the following physical and biological features essential (i.e., essential features) to the conservation of Gulf sturgeon: abundant prey items, water quality, sediment quality, and safe and unobstructed migratory pathways (for a full description of the essential features see Appendix 2). Abundant prey could be affected by oyster aquaculture if the shell material and transplanted oysters are placed on sandy substrates. However, PDC 15 requires materials to be placed on existing shell substrate, which does not contain accessible prey items. Nonetheless, NMFS has determined, based on the best scientific and commercial data available, that the availability/abundance of prey items is increased by the presence of healthy oyster reefs;[8] therefore, it is likely that Gulf sturgeon prey species (such as amphipods, lancelets, polychaetes, gastropods, ghost shrimp, isopods, mollusks, and crustaceans) would benefit from the creation of healthy oyster reef areas. While some of this enhanced prey abundance will remain in the oyster reefs and not be available to Gulf sturgeon for foraging, we believe that directly (through spillover) or indirectly (through trophic movement), prey abundance will be increased in areas accessible to foraging Gulf sturgeon. Therefore, any effect to the abundant prey items essential feature is beneficial. Water quality

[7] Bourdeaux et al. 2006. Biodiversity of sessile and motile macrofauna on intertidal oyster reefs in Mosquito Lagoon, Florida. Journal of Shellfish Research. Vol. 25, No. 3: 1079-1089.

[8] Bilkovic, D.M. and M.M. Roggero. 2008. Effects of coastal development on nearshore estuarine nekton communities. Marine Ecology Progress Series 358: 27-29.

and sediment quality essential features may be affected if turbidity was increased or sediments were disturbed or altered by the placement of shell material or transplanted oysters. However, PDC 15 and the State of Florida limit the placement of cultch material for FDACS's oyster aquaculture program to existing shell substrate (i.e., oyster reefs). Thus, while this may disturb surrounding sediments and increase turbidity, we believe these effects will be localized and temporary. Therefore, any effect to the water quality or sediment quality essential features from increased turbidity or disturbances and alterations to sediments is considered insignificant. The migratory pathway essential feature might be affected if FDACS were to place shell material or transplanted oysters in river mouths, ocean passes or cuts, and navigation channels. PGP SAJ-99 PDC 5(f) prohibits aquaculture activities in river mouths, ocean passes or cuts, and navigation channels, and FDACS does not plant cultch in these locations for practical reasons (i.e., bottom scour, vessel traffic, or depth). Placement of cultch material in other SSL sites outside of these river mouths, ocean passes or cuts, and navigation channels is not expected to affect migration as AUZ's are located in open water where fish can move around the lease sites. Therefore, the potential effect to the migratory pathway essential feature is considered discountable.

Loggerhead critical habitat: Loggerhead critical habitat may be affected if aquaculture activities impede egress by hatchlings to the open water or the movement of nesting females to and from the beach by affecting the nearshore reproductive or migratory corridor essential features. However, oyster operations occur on the bottom, so there would be no interference with a turtles swimming behavior. Given the relatively small size of leases and the ample adjacent open water within and surrounding lease sites, effects to loggerhead critical habitat are discountable.

C. *Off-bottom Aquaculture* – New methods of oyster and hard clam aquaculture designed to increase productivity and quality of product.

Potential Effects on Listed Species

Sea turtles, Gulf sturgeon, and smalltooth sawfish, can be found in or near areas where off-bottom aquaculture leases might be authorized. Sea turtles, Gulf sturgeon, and smalltooth sawfish might be affected if they were to come into contact with off-bottom aquaculture related vessels or equipment. Vessels and equipment utilized in off-bottom aquaculture operations typically transport their material and products within very shallow intertidal areas, and therefore operate at slow speeds in around aquaculture areas. Sea turtles, Gulf sturgeon, and smalltooth sawfish are mobile animals and will likely avoid any interactions with vessels and equipment utilized in the aquaculture industry. Due to the vessel characteristics and the natural avoidance behavior of these species, we believe these effects are insignificant. Sea turtles, Gulf sturgeon, and smalltooth sawfish may be affected by being temporarily unable to use the site for shelter habitat due to potential avoidance of aquaculture activities and related noise; but these effects will be insignificant, given the short duration of activity allowed at aquaculture sites.

Sea turtles, Gulf sturgeon, and smalltooth sawfish may be affected if they were to become entangled by in-water equipment, including baskets, lines, poles, and anchors. The materials used in these methodologies and the construction standards require all poles and anchors to be secured into the benthos and that all lines and baskets are taut with 20% line stretch to ensure no slack in the line and minimize the risk of entanglement. Because of the construction methods used in off-bottom aquaculture, and the tautness of the lines, we find these effects discountable.

Additionally, installation of poles and anchors may increase turbidity. However, increases in turbidity levels from pile installation are expected to be localized and temporary, and therefore insignificant.

Effects to listed species as a result of noise created by pile driving activities during initial construction can physically injure animals or change animal behavior in the affected areas. Injurious effects can occur in two ways. First, effects can result from a single noise event exceeding the threshold for direct physical injury to animals, and these constitute an immediate adverse effect on these animals. Second, effects can result from prolonged exposure to noise levels that exceed the daily cumulative exposure threshold for the animals, and these can constitute adverse effects, if animals are exposed to the noise levels for sufficient periods. Behavioral effects can be adverse if such effects prevent animals from migrating, feeding, resting, or reproducing, for example. Our evaluation of effects to listed species as a result of noise created by construction activities is based on the analysis prepared in support of the Opinion for SAJ-82.[9]

Based on our noise calculations, the use of a water jet to create pilot holes or install piles will not result in injurious noise effects or behavioral noise effects. A worse-case scenario would involve the use of an impact hammer to drive in piles during initial construction. Based on our noise calculations, the installation of wood piles by impact hammer will not cause single strike or peak pressure injury to sea turtles or ESA-listed fish. The daily cumulative sound exposure level (cSEL) of multiple pile strikes over the course of a day may cause injury to ESA-listed fishes and sea turtles at a radius of up to 30 ft (9 m). Due to the mobility of sea turtles and ESA-listed fish species, we expect them to move away from noise disturbances. Because we anticipate the animal will move away, we believe that an animal suffering physical injury from noise is extremely unlikely to occur. Even in the unlikely event an animal does not vacate the daily cumulative injurious impact zone, the radius of that area is smaller than the 50-ft radius that aquaculture lessees or their agents will be visually monitoring for listed species and they will cease construction activities if an animal is sighted per NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*. Thus, we believe the likelihood of any injurious cSEL effects occurring is discountable. An animal's movement away from the injurious impact zone is a behavioral response, with the same effects discussed below.

Based on our noise calculations, impact hammer pile installation could also cause behavioral effects at radii of 151 ft (46 m) for sea turtles and 705 ft (215 m) for ESA-listed fishes. Due to the mobility of sea turtles and ESA-listed fish species, we expect them to move away from noise disturbances. Because these aquaculture sites are located in open water and there is similar habitat nearby, we believe behavioral effects will be insignificant. If an individual chooses to remain within the behavioral response zone it could be exposed to behavioral noise impacts during pile installation. Because installation will occur only during the day, these species will be able to resume normal activities during quiet periods between pile installations and at night. Therefore, we anticipate any effects will be insignificant.

[9] NMFS 2014. Regional General Permit SAJ-82 (SAJ-2007-1590), Florida Keys, Monroe County, Florida

Potential Effects on Designated Critical Habitat

Gulf sturgeon critical habitat: Designated critical habitat for Gulf sturgeon has the potential to be affected by off-bottom oyster aquaculture activities. NMFS has identified the following physical and biological features essential (i.e., essential features) to the conservation of Gulf sturgeon that might be affected by FDACS's off-bottom oyster aquaculture program: abundant prey items, water quality, sediment quality, and safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats. The abundant prey item essential feature might be affected by FDACS's off-bottom oyster aquaculture program if the placement of poles and anchors were to diminish the availability/abundance of prey items. However, the total footprint of these off-bottom methodologies is miniscule. A standard floating basket system footprint is 0.031 ft^2 (0.000007% of an acre) and a suspended basket system footprint is 17.8 ft^2 (0.0041% of an acre). This minor loss of area and associated prey items will not likely have an impact on the overall abundance of prey items available to Gulf sturgeon. There are ample foraging habitats and prey items available in adjacent areas that are readily accessible by Gulf sturgeon. Therefore, any effect to the abundant prey items essential feature is insignificant. The water quality and sediment quality essential features may be affected if turbidity was increased or sediments were disturbed by the placement of poles and anchors. Poles and anchors will be installed only during the initial construction phase. Sediments may be disturbed or turbidity increased from the placement of poles and anchors by jetting, but these effects will be temporary and the sediment composition is not expected to change after these temporary effects abate; therefore, the effect to sediment quality from increased turbidity or disturbances to sediments is considered insignificant. Water quality may be affected by increased turbidity from the placement of poles and anchors by jetting, but these effects will be temporary and localized; therefore, the effect to water quality is considered insignificant. The safe and unobstructed migratory pathway essential feature might be affected if FDACS were to allow off-bottom aquaculture systems to be placed in river mouths, ocean passes or cuts, navigation channels, and other pathways used for feeding and inter-riverine movements. PGP SAJ-99 PDC 5(f) prohibits aquaculture activities in river mouths, ocean passes or cuts, and navigation channels, and FDACS does not allow aquaculture activities in these locations for practical reasons (i.e., bottom scour, vessel traffic, or depth). Placement of off-bottom aquaculture systems in other SSL sites outside of these river mouths, ocean passes or cuts, and navigation channels is not expected to affect migration as fish will be able to easily move around these aquaculture sites in adjacent open-water areas. Therefore, the potential effect to the migratory pathway essential feature is considered discountable.

Loggerhead critical habitat: Loggerhead critical habitat may be affected if aquaculture activities impede egress by hatchlings to the open water or the movement of nesting females to and from the beach by affecting the nearshore reproductive or migratory corridor essential features. However, off-bottom aquaculture operations provide ample room between anchors or pilings (figure 2 and figure 3) for sea turtles to pass through lease sites unimpeded, so there would be no interference with a turtles swimming behavior. The off-bottom basket culture is carried out near the benthos (figure 4), therefore, it would not affect sea turtle swimming behavior. Additionally, PDC 15 requires aquaculture systems to be set perpendicular to the nesting beach to reduce effects on hatchling egress to the open water and the transit of nesting females to and from the beach. Additionally, the linear footage of the part of the aquaculture system that is parallel to the beach may not be more than 10% of the linear footage of the critical habitat unit's nesting beach.

Given the requirement to set the aquaculture systems perpendicular and the relatively small size of the linear footprint compared to the linear footprint of the nesting beach the ample adjacent open water within and surrounding lease sites, effects to loggerhead critical habitat are discountable.

Summary of Effects of Individual Lease Activities

Vessel movement associated with aquaculture activities may affect Gulf sturgeon, sea turtles, and smalltooth sawfish if they were struck by these vessels; however, these species are highly mobile and the vessels operate at low speeds. Therefore effects of vessel strikes are considered discountable.

The placement and removal of aquaculture products may affect Gulf sturgeon, smalltooth sawfish, sea turtles, and listed coral species. Live rock operations require rock to be placed on the site by hand, or lowered completely to the bottom by crane. Deposited materials shall not be allowed to free fall to the bottom, and all deposition shall occur while the vessel is at anchor. Sea turtles, Gulf sturgeon, and smalltooth sawfish are highly motile species and will likely avoid areas while lease holders are actively placing or harvesting aquaculture materials. Listed coral species will not be affected by the placement of aquaculture products, because all operations must have a setback of 50 ft from any hard bottom areas.

Effects to Gulf sturgeon, smalltooth sawfish, and sea turtles as a result of noise created by pile driving activities during initial construction of off-bottom systems can physically injure animals or change animal behavior in the affected areas. Because these aquaculture sites are located in open water and there is similar habitat nearby, we believe behavioral effects will be insignificant. If an individual chooses to remain within the behavioral response zone it could be exposed to behavioral noise impacts during pile installation. Because installation will occur only during the day, these species will be able to resume normal activities during quiet periods between pile installations and at night. Further, we analyzed the worst-case scenario for pile installation (impact hammer) and found the effects to be insignificant; therefore, we anticipate any effects from pile installation will be insignificant.

Designated critical habitats for Gulf sturgeon (Units 9-14) and Loggerhead sea turtles (Units 14-33) all have the potential to be affected by individual aquaculture activities permitted under PGP SAJ-99 because of the locations where these activities might occur in relation to the nearshore coastal environment within Florida waters. However, we found these effects to be discountable or insignificant due to the implementation of the PDCs which are designed to protect the essential features of the various critical habitats, including exclusion of aquaculture activities from critical habitat or from locations where the essential features exist.

Additive Effects

Only a small amount of Florida coastline has been designated suitable for shellfish propagation or harvesting (62-302.500 and 62-302.503 F.A.C.). Current aquaculture encompasses a small area in Florida waters (2,208 ac), results in only small increases in acreage annually for new sites (approximately 1-2 ac per year), and has not expanded in the last 5 years. When completed according to the PDCs of this programmatic consultation, State of Florida laws, rules and

policies, federal laws, and as described in PGP SAJ-99 PDCs 1 through 21, the aquaculture activities authorized under PGP SAJ-99 individually are not likely to adversely affect sea turtles, Gulf sturgeon, smalltooth sawfish, coral species (live rock aquaculture activities), or designated critical habitat for Gulf sturgeon and Loggerhead sea turtles, found in Florida's coastal waters. We now must determine if, when considered additively over the next 5 years, the aquaculture activities authorized under PGP SAJ-99 are likely to adversely affect the above-mentioned species and their designated critical habitat. We analyzed only those routes of effects that have the potential to be additive due to chronic stress or cumulative effects.

Vessels

Sea turtles, Gulf sturgeon, and smalltooth sawfish could be adversely affected by localized increases in vessel traffic associated with the additive effects of aquaculture activities. The majority of vessel traffic associated with aquaculture activities will occur in nearshore coastal waters, where vessels are not likely to operate at high speed due to shallow water depths with aquaculture resources in the area. Smalltooth sawfish, Gulf sturgeon, and sea turtles may be affected by an increase in vessel traffic associated with aquaculture activities if it resulted in an increased likelihood of being struck; however, smalltooth sawfish and Gulf sturgeon are demersal (bottom-dwelling) species and are unlikely to be struck by vessels at the surface. These species are highly mobile and likely would avoid the areas while aquaculture activities are being conducted. A very conservative estimate by a NMFS fisheries biologist states that an activity would have to introduce more than 300 new vessels into an area used by sea turtles to potentially result in a single take of a sea turtle in any year.[10] Given that aquaculture activities are not likely to increase vessel traffic in any single area to this level, a similar conclusion can be drawn regarding risk of vessel strikes of sea turtles by aquaculture vessel activity. Given the low likelihood of a vessel strike, the risk of injury or death to sawfish, Gulf sturgeon, and sea turtles from interactions with vessel traffic from aquaculture activities is discountable. We believe that the effects will be limited to temporary avoidance of an area while vessels are in use; therefore, the potential additive effect of vessel activities is considered discountable.

Listed Corals

NMFS believes that activities authorized under PGP SAJ-99 and conducted in compliance with the PDCs of this programmatic consultation, State of Florida laws, rules, and policies, federal laws, and the PDCs of PGP SAJ-99 will not result in additive adverse effects to listed corals. Activities that may result in take of corals are not authorized under PGP SAJ-99. Substrate placed within some coastal waters of Florida for the purposes of live rock aquaculture does have the potential to support larval coral settlement. However, PGP SAJ-99 PDC 13 prohibits the harvesting of any rock with listed coral species attached, and requires that each rock be visually inspected for its presence. Live-rock farmers will be required to leave in place any rocks which have listed coral species attached. Although NMFS believes the instances of listed corals settling on aquacultured live rock to be rare, the additive effects if settlement were to occur would result in multiple rock pieces with listed coral species attached left in place.

[10] Barnette, M. 2013. NMFS Memorandum dated April 18, 2013, Threats and Effects Analysis for Protected Resources on Vessel Traffic Associated with Dock and Marina Construction, Southeast Regional Office, St. Petersburg, Florida.

Individual/Annual Review of Aquaculture Program
FDACS personnel review each individual aquaculture application to ensure that the proposed activity complies with all of the applicable state and federal regulations, including compliance with all of the PDCs of this programmatic consultation and of PGP SAJ-99. FDACS will review each individual aquaculture application to ensure that the proposed activities have no effects to species listed and critical habitat designated under the ESA and are otherwise wholly consistent with this programmatic consultation. FDACS may recommend modifications to the proposed lease boundaries or special lease conditions to eliminate adverse environmental impacts or to reduce conflicts with other water and upland uses and users.

NMFS Protected Resources Division will review each individual new activity proposed for authorization under PGP SAJ-99. The USACE and FDACS will review the aquaculture program on an annual basis and will participate in a biennial review of the program with NMFS. Given the low level of activity covered by this permit and this consultation, this level of review will ensure that the potential effects analyzed in this consultation document, and the activities proposed for authorization under PGP SAJ-99, will not adversely affect ESA-listed species or ESA-designated critical habitat under our purview. Should an individual proposed action identified by FDACS, the USACE, or NMFS as having the potential to adversely affect listed species or designated critical habitat be submitted, then NMFS Protected Resources Division will request further consultation in order to identify/analyze any effects not previously considered, and/or recommend additional PDCs.

Conclusion

We believe the aquaculture activities proposed for authorization under the USACE Jacksonville District's PGP SAJ-99 are not likely to adversely affect sea turtles, Gulf sturgeon, smalltooth sawfish, or listed coral species found in waters of the State of Florida. We also believe that the proposed activities are not likely to adversely affect any designated critical habitat for these species. Existing Florida laws, rules, and policies, federal laws, typical farming practices, the PDCs of this programmatic consultation and of PGP SAJ-99, and FDACS's oversight of the application of those PDCs, will prevent the authorization of aquaculture activities that may adversely affect listed species or designated critical habitat.

Please be advised of the project-specific review requirements and the annual comprehensive review requirement for activities authorized under PGP SAJ-99 as found on pages 13-14. Further, aquaculture is considered a commercial fishery under the Marine Mammal Protection Act (MMPA). As such, it will be designated on the MMPA's List of Fisheries (LOF) per section 118 of the MMPA. The Marine Mammal Authorization Program (MMAP) allows commercial fishing entities designated on the LOF to lawfully incidentally take marine mammals in a commercial fishery in certain cases: (1) a fishery classified as a Category I or II registers for and maintains a valid MMAP certificate from NOAA Fisheries (50 CFR 229.4); (2) an observer is accommodated upon request (50 CFR 229.7); and (3) any incidental marine mammal mortality or injury occurring in a Category I, II, or III fishery is reported within 48 hours of the occurrence (50 CFR 229.6). Additional information on the MMAP and how to report an incidental marine mammal take may be found here: http://www.nmfs.noaa.gov/pr/interactions/mmap/.

This concludes your consultation responsibilities under the ESA for species and critical habitats under NMFS's purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action.

We have enclosed other relevant information for your review. If you have any questions, please contact Jason Rueter, Consultation Biologist, at (727) 824-5312 or by email at Jason.Rueter@noaa.gov. Thank you for your continued cooperation in the conservation of listed species and critical habitat.

Sincerely,

Roy E. Crabtree, Ph.D.
for Regional Administrator

Enclosure

File: 1514-22. F.4
Ref: SER-2014-13378

Appendix 1. State of Florida's *Aquaculture Best Management Practices* dated April 2007

The Best Management Practices (BMPs) reiterated here are only those that must be implemented by shellfish or live rock aquaculturists when conducting culture activities upon sovereign submerged leases. Chapter 5L-3, Aquaculture Best Management Practices, Florida Administrative Code, contains the BMPs. Shellfish and live rock aquaculturists implement all or part of eleven BMP chapters. The current Aquaculture Best Management Manual can be accessed via the Internet at http://www.floridaaquaculture.com/publications/P-01499-booklet-07_BMP_RULE.pdf.

The BMPs are a Florida Administrative Code which is not a static document and can be amended through the state rulemaking process when new information, laws, and/or technologies warrant. State of Florida rulemaking process requires an open and transparent process affording all interested stakeholders the opportunity to comment.

II. COMPLIANCE MONITORING

The Best Management Practices (BMPs) in this manual are intended for implementation by all holders of Aquaculture Certificates of Registration. Anyone conducting aquacultural activities not in compliance with this manual and/or not certified by the FDACS is in violation of Florida Law, and is subject to the penalties described below and required to obtain any and all permits required by the appropriate state regulatory agencies (i.e., FDEP, WMD, FWC).

Pursuant to Sections 597.004(2)(c) & (d), Florida Statutes (F.S.),

Notwithstanding any provision of law, the Florida Department of Environmental Protection (FDEP) is not authorized to institute proceedings against any person certified under this section to recover any costs or damages associated with contamination of groundwater or surface water, or the evaluation, assessment, or remediation of contamination of groundwater or surface water, including sampling, analysis, and restoration of potable water supplies, where the contamination of groundwater or surface water is determined to be the result of aquaculture practices, provided the holder of an aquaculture certificate of registration:

1. Provides the department with a notice of intent to implement applicable best management practices adopted by the department;

2. Implements applicable best-management practices as soon as practicable according to rules adopted by the department; and

3. Implements practicable interim measures identified and adopted by the department which can be implemented immediately, or according to rules adopted by the department.

There is a presumption of compliance with state groundwater and surface water standards if the holder of an aquaculture certificate of registration implements best-management practices

that have been verified by the FDEP to be effective at representative sites and complies with the following:

1. Provides the department with a notice of intent to implement applicable best management practices adopted by the department;

2. Implements applicable best-management practices as soon as practicable according to rules adopted by the department; and

3. Implements practicable interim measures identified and adopted by the department which can be implemented immediately, or according to rules adopted by the department.

Pursuant to Chapter 597, F.S., certified aquaculturists must fully implement all applicable BMPs described in this manual. The BMPs must be implemented upon initiation of operation and maintained for the duration of that phase of operation by the holder of an Aquaculture certificate of registration and followed for the term of the certificate. As such, FDACS authorized representatives will periodically visit the site to inspect the facility and records as required herein.

In order to remain in good standing with the Department's Aquaculture Certification Program, the following compliance requirements are minimum expectations and should be fully understood and adhered to:

A. COMPLIANCE REQUIREMENTS

1. All applicable BMPs must be implemented immediately and followed for the full term of the certificate.

2. Upon signature and submission of an application for Aquaculture Certification, the applicant has filed a notice of intent that he or she will comply with the BMPs described in this manual.

3. Representatives of the Department will periodically conduct an unannounced physical inspection of the farm and a review of records (where required), to ascertain compliance with BMPs.

4. Operators of aquaculture facilities that are unable or unwilling to comply with the BMPs or whose proposed activities are not covered by the BMPs will be directed to the appropriate regulatory agencies to obtain applicable permits. When an operator chooses the permit option, failure to comply with the permit conditions will subject the operator with the enforcement action of the permitting agency and enforcement by FDACS pursuant to Rule 5L-3.007, Florida Administrative Code (F.A.C.).

B. INSPECTION PROTOCOL

The Department will conduct unannounced on site inspections at least once during each year and reinspections as needed.

The certified facility must maintain and provide access to copies of pertinent records as required by subsequent sections in this manual.

C. PENALTIES

Any person who violates any provision of Chapter 597, F.S., or Chapter 5L-3, F.A.C., commits a misdemeanor of the first degree, and is subject to a suspension or revocation of his or her certificate of registration. Pursuant to section 597.0041(2)(a), Florida Statutes, "The department may, in lieu of, or in addition to the suspension or revocation, impose on the violator an administrative fine in an amount not to exceed $1,000 per violation per day." Please see Rule 5L-3.007, FAC for specific administrative fine criteria, generally described as follows:

(1) First time offenders will receive written notice of the BMP deficiencies and will be given 60 days to comply.

(2) Failure to comply after 60 days may result in an administrative fine of up to $1,000 per day per occurrence until compliance is obtained.

(3) Continued failure to comply will result in the suspension/revocation of the producers Aquaculture Certificate and an administrative fine of up to $1,000 per day per occurrence until compliance is obtained.

(4) Repeat offenders will be subject to suspension/revocation of the producers Aquaculture certificate and an administrative fine of up to $1,000 per day per occurrence until compliance is obtained and the Department will request that legal measures be initiated to impose misdemeanor charges.

(5) Any person who violates the above Statutes, rules or these BMPs is not afforded protection from costs for evaluation assessment, and/or remediation of contamination of groundwater or surface waters determined to be a result of non-compliance with these BMPs. Please see Sections 597.004(2)(c) and (d), Florida Statutes.

III. FEDERAL PERMITTING

WETLANDS PROTECTION PROGRAMS

The United States Army Corps of Engineers (ACOE) regulatory program is one of the oldest in the Federal Government and includes the Rivers and Harbors Act of 1899 which establishes permit requirements to prevent unauthorized obstruction or alteration of any navigable water of the United States. This navigable water's jurisdiction includes all navigable

fresh waters and ocean waters out to a distance of 200 nautical miles. Section 10 of this act covers construction, excavation, or deposition of materials in, over, or under such waters which could affect the course, location, condition, or capacity of those waters. Section 9 of this act typically applies to dams and dikes.

The Federal Water Pollution Control Act as amended in 1977 and commonly referred to as the Clean Water Act (CWA), includes Section 404 authorizing the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into waters of the United States. While the ACOE acts as the lead permitting agency, the Environmental Protection Agency has veto powers and may invoke this authority at any time.

The basic form of authorization used by the ACOE is the Individual Permit. Another form of authorization is the General Permit that typically covers activities the ACOE has identified as substantially similar in nature and causing only minimal environmental impacts. Nationwide General Permits may be applicable to some aquaculturists contemplating activities in the defined waters.

The Coastal Zone Management Act of 1972 (Section 307) requires applicants to certify that projects are in compliance with an approved State Coastal Zone Management Program and that the State concurs with the applicant's certification prior to issuance of an ACOE permit. Pursuant to Section 380.205, F.S., Coastal Zone means “an area of land and water from the territorial limits to the most inland extent of marine influences.” Florida Coastal Zone provisions generally apply only in the geographical area encompassed by 35 Florida coastal counties listed in the Final Environmental Impact Statement for the Florida Coastal Management Program. Moreover, an aquaculturist proposing works on any state sovereign lands would also be required to contact the FDACS, Division of Aquaculture to obtain a state sovereign land’s authorization.

The federal definition for agriculture does not include aquaculture. Therefore, regarding wetlands protection, the ACOE is the lead federal agency. As such, many of the conventions developed by the NRCS pursuant to the Food Security Act (Swamp buster provisions) do not apply; thus, wetland determinations (i.e., prior converted) should not be taken for granted and you must receive all required Corps approvals/permits before construction activities commence. **IF THERE IS ANY DOUBT WHETHER THE PROPOSED ACTIVITIES WILL IMPACT WETLANDS,** contact either the FDACS, Water Management Districts, or DEP and the ACOE for assistance, as the state and federal wetland delineation methodology and extent of jurisdiction are not the same.

IV. WATER RESOURCES

A. WATER SUPPLY CONSIDERATIONS

Most aquaculture facility operators will require a water source to either augment existing water supplies or provide makeup water lost to evaporation or percolation. This water source can exist as groundwater, surface water, or seawater. Regulations and permitted water use criteria varies among the five water management districts. Typically before a user can receive a

water use/consumptive use permit, the applicant must establish that the proposed water use satisfies a three-prong test found in section 373.223, F.S. New applicants must demonstrate that the proposed use is reasonable and beneficial and, will not interfere with any existing legal use of water. The use must also be consistent with the public interest test.

The Water or Consumptive Use Permit allows a user to withdraw a specified amount of water from either a groundwater well or from an allowable surface water source. These permits are categorized as either Individual Permits (requiring Governing Board approval) or General Permits (staff level approval). They typically require an application fee and are issued for 10 to 20 years. Some water management districts have declared certain groundwater basins as severely stressed and have designated "Water Use Caution Areas" which may have more stringent permit issuance criteria and require well metering to track the amounts withdrawn. Water management districts (in some cases the delegated local county government) also issue Well Construction Permits which are generally required if the aquaculturalist either plans to have a new well constructed, or needs to repair or plug an existing well. ***Please note that the aquaculture BMP manual is not designed to replace the need for water use or well drilling permits; therefore, it is imperative for all water use situations that operators contact their local water management district Water Use Permitting Department to determine permitting requirements.***

Best Management Practices:

- Contact the water management district and/or the FDACS, Division of Aquaculture staff before constructing a well or withdrawing water from an unpermitted regulated well.

B. WATER CONSERVATION AND RE-USE

The thoughtful use and management of water resources can improve productivity and profitability, and provide measurable returns to Florida's environment.

Best Management Practices:

- Use water conservation practices where appropriate and feasible to minimize water use. Water conservation and re-use practices may include:

  -Recirculation systems
  -Maintaining proper free board levels
  -Maintaining perimeter ditches
  -Retaining production water on site
  -Water re-use practices
  -Reclaimed water
  -Alternate water sources

C. SALTWATER SOURCES

There may be circumstances where aquaculture operations will need saline water to culture certain organisms, especially those which require a marine environment during a portion of their life cycle (i.e., shrimp or clam hatcheries). There are two environmental issues which may arise: (1) potential permitting issues associated with withdrawal of saline water. If you are using saline water, check with your WMD to determine if the quality of your water requires a permit and, (2) potential impacts to freshwater systems from saline water discharge.

Best Management Practices:

- Saline water shall not be discharged to freshwater environments.

- When utilizing a near shore saline water source, the intake and discharge pipes should be located so as not to interfere with navigation.

- Facilities should be designed and installed to avoid or minimize impacts to resources, including scouring caused by discharge pipes.

V. CONSTRUCTION

A. NEW CONSTRUCTION

Individuals and/or companies constructing new facilities on new farms must follow this section as well as all other applicable best management practices. A certificate holder following this section is provided a mechanism that identifies a new aquaculture operation as an agriculture enterprise that is in the development phase which has the final objective of commercial aquaculture production. When a first time applicant is applying for certification under this section, the interim certification is not to exceed 12 consecutive months. Failure to meet the development expectations of the construction plan and timeline will result in non-issuance of the aquaculture certification and subsequent referral to all other appropriate regulatory agencies. Upon receiving the interim certificate, the applicant can commence work on the facility.

Best Management Practices:

- A new farm or facility application for a certificate of registration shall contain the following information:

  (a) Applicant's name/title.
  (b) Company name.
  (c) Complete mailing address.
  (d) Legal property description for aquaculture facility.
  (e) Actual physical street address for aquaculture facility.
  (f) Description of production facilities, which shall include a construction plan and associated timeline.

(g) Species production plan and associated timeline.
(h) Description detailing implementation of appropriate BMPs.
(i) Fifty dollar annual registration fee.

- Construction must adhere to the requirements of Section V of the Aquaculture Best Management Practices Manual.

- As provided in Section V, subsection C, Aquaculture Best Management Practices, wetlands shall not be impacted.

- Supporting documentation to substantiate the above requirements must be maintained by the applicant and available for review upon request by the department.

- During the construction phase a certificate holder will be subject to unannounced inspections, one of which will be prior to the issuance of an aquaculture certification, to confirm compliance with all applicable best management practices and completion of construction/production timelines.
- The department may grant an extension provided the applicant requests, in writing, an extension with sufficient and plausible detail explaining circumstances necessitating an extension.

- Any new construction/facilities not located on land zoned "agriculture/agriculture use" must comply with local construction and zoning regulations or obtain a variance.

C. WETLANDS PROTECTION

Wetlands are important components of Florida's water resources. They provide spawning areas and nurseries for many species of fish and wildlife, storage of flood waters, uptake of nutrients in runoff water, habitat for plant and animal biodiversity, and recreational opportunities for the public. Wetlands are complex transitional ecosystems between aquatic and terrestrial environments. Prior to development, Florida's wetlands (including open waters and seasonally flooded areas) covered about half of the state's area. That area has been greatly reduced primarily due to early water management efforts focused on draining wetlands to facilitate development interests and augmentation of agricultural lands. Today, landowners may qualify for various USDA-NRCS incentive programs designed to encourage wetland restoration. Contact the FDACS, Division of Aquaculture or USDA for additional information.

D. ELIMINATION/REDUCTION OF WETLAND IMPACTS

Wetlands may exist as isolated features in the landscape or may be connected to other surface waterbodies such as rivers, streams, lakes and often have no discernable shoreline. A goal of this manual is to protect them from adverse impacts associated with dredging, filling, hydro-period alteration, expansion or reduction of watersheds, or degradation of water quality. **DO NOT CONDUCT DREDGE OR FILL ACTIVITIES IN WETLANDS OR WETLAND BUFFERS**. If plans include the construction of sea walls, bulkheads, beach armoring or similar

structures, the following wetland BMPs do not apply. Please contact the Florida Department of Environmental Protection for authorization to construct these structures. It is the intent of this manual to employ BMPs which do not adversely affect onsite (project area) or offsite wetlands. As such, all proposed aquacultural operation designs must first consider elimination and/or reduction of wetland impacts through practicable design alternatives or modifications. Except as otherwise addressed in this BMP manual, aquacultural operations unable or unwilling to follow this wetland impact BMP must obtain applicable permits under Part IV of Chapter 373, F.S.

Note: Wetlands constructed (man-made) for water treatment purposes are not included in this Wetland Impact BMP.

Best Management Practices:

- Contact the FDACS, Division of Aquaculture to confirm the presence or absence of onsite and adjacent wetlands prior to initiating any aquaculture construction activities.

- All new pond construction must maintain a minimum 50 foot upland buffer from the boundary of all wetlands and or natural water bodies.

- If production exceeds 10,000 pounds/year, do not discharge any untreated effluents into wetlands.

Prior to construction of any land-based effluent treatment system (i.e., filter strip) ultimately discharging to surface waters, the determination of the landward extent of any receiving water must be made or verified by FDACS. This determination is necessary to prevent the location or inclusion of water treatment facilities in wetlands or other surface waters pursuant to Rule 62-340, F.A.C. or waters of the U.S.

X. SHELLFISH CULTURE

Shellfish culture, hard clams, mussels, scallops, and oysters, occurs on sovereignty submerged lands leased from the State of Florida. In addition to inspecting farms for compliance with the aquaculture BMPs, the Division accepts applications for sovereignty submerged state lands and regulates and inspects shellfish processing plants for compliance with shellfish handling, labeling and food safety protection requirements.

A. UPLAND FACILITY OPERATIONS

Best Management Practices:

- Sovereign submerged lands authorizations must be obtained for structures located on or above state-owned submerged lands. Contact the FDACS, Division of Aquaculture for information.

- The facility must be located so that it minimizes environmental impacts and minimizes risks to public health

- Facilities located on lands not zoned agricultural must comply with local construction and zoning regulations.

- Land-based facilities must be designed and operated in a manner which minimizes adverse impacts to the receiving waters, adjacent wetlands, and uplands.

- Pumping, intake and discharge systems must be designed in a manner which does not create currents which increase sedimentation, scouring, turbidity, or in anyway damage the surrounding habitat.

- Sediment removal and disposal must be conducted in a manner that eliminates or minimizes adverse impacts to the receiving waters.

- Shell stock shall not be used to fill wetlands or placed on sovereign submerged lands. Shell stock may be disposed of in appropriate upland areas, landfills, or designated shell recycling areas.

- Hatchery operators must maintain records of all brood stock purchases and seed sales for a period of two years. These records must be available for inspection by the Division upon request.

- Florida based clam hatcheries selling seed must be certified as a clam hatchery facility. Clam seed sold/transferred from these certified facilities must be accompanied with an aquaculture certification number attached to all product containers and associated sales documentation.

B. SUBMERGED LANDS - GROW-OUT

Best Management Practices:

- Aquaculturists culturing shellfish on Sovereign Submerged Lands (state-owned) shall obtain an aquaculture lease or other SSL authorization and remain current with annual fees and conditions of that authorization agreement.

- Follow all the terms and conditions of the Sovereignty Submerged Land Aquaculture Lease, and be fully compliant with provisions of Chapters 253, 258, Part II, 597, F. S., Chapters 5L-1, 5L-3, F.A.C.

- Aquaculturists culturing shellfish on privately held submerged lands shall provide a development plan for culture operations and must have an aquaculture certificate from the FDACS, Division of Aquaculture.

- Prior to commencement of the aquaculture activities on the approved grow-out site, properly post the grow-out boundaries to delineate the corners and perimeters, as per the

lease agreement. Markers should be sufficient to warn mariners passing in the vicinity of the lease of the potential hazards to navigation.

- Authorized activities on the grow-out site are those activities allowed in the lease agreement or development plan for culture operations. For example: planting shellfish cultivated from eggs, transplanting and relaying live stocks, placement of cultch material, harvesting clams, the installation and removal of nets, bags, or other devices, and the placement of markers that designate the corners and perimeters of the culture area.

- No vessel of any description shall be moored on or adjacent to the grow-out premises for a period exceeding twenty-four hours, regardless of whether the vessel is periodically moved.

- Mechanical harvesting is prohibited on aquaculture grow-out areas unless specified in the lease agreement or development plan for culture operations.

- Culture materials (cultch) placed on the grow-out area must be a suitable substrate for attachment of oyster larvae: such as natural molluscan shells; fossilized shell; coral, and other aquatic organisms; lithic materials such as crushed and graded limestone, granite, and gravel which contain calcium carbonate and/or fossilized organisms; or recycled materials which contain lithic fractions and calcium carbonate, including crushed and graded concrete. Exceptions to this list of generally accepted cultch materials must be specifically approved and identified within the aquaculture lease agreement.

- Non-natural materials placed in the water or on submerged lands shall be anchored to the bottom. This includes any protective netting used to cover the bags.

- Bags, cover nets, and/or trays used in the culture operation shall be removed from the water during all mechanical cleaning, maintenance and repair operations. During harvest, culture bags and cover nets shall be rinsed/cleaned over the grow-out area to allow sediments to remain in the lease area. Mechanical or hydraulic devices shall not be used below the water for the cleaning of the submerged structures. Use hand tools for cleaning shellfish, bags, and other structures under water.

- All culture materials, cover nets, bags or other designated markers placed on or in the water shall be clean and free of pollutants including petroleum based products such as creosote, oils and greases, or other pollutants. Compounds used as preservatives must be used in accordance with the product label.

- The aquaculturist is responsible for collection and proper disposal of all bags, cover netting or other materials used in the culture of shellfish on submerged lands or when such materials are removed during harvesting or become dislodged during storm events.

- Producers must maintain records of all seed purchases and seed sales for a period of two years. These records must be available pursuant to the annual lease audit requirement of the Sovereignty Submerged Land Aquaculture Lease.

C. PUBLIC HEALTH PROTECTION

Best Management Practices:

Shellfish grown by the aquaculturist shall comply with provisions of Chapters 5L-1, 5L-3, F.A.C., and Chapter 597, F.S.

- Shellfish harvested by the aquaculturist to be sold in any market, other than seedstock shall comply with provisions of Chapter 5L-1, F.A.C.

- Follow all National Shellfish Sanitation Program criteria when consistent with Florida's Comprehensive Shellfish Control Code. (U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration, "Model Ordinance 1999" of the National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish)

- Direct sales of aquaculture products from the farmer to the retailer or consumer are prohibited: sale for market must be to a facility possessing a valid shellfish processing plant certification.

- Seed clams (*Mercenaria spp.*) must be relocated from harvest waters classified as restricted or prohibited to an approved classified water location for grow-out prior to reaching 16mm in shell length.

- Seed oysters (*Crassostrea virginica*) must be relocated from harvest waters classified as restricted or prohibited to an approved classified water location for grow-out prior to reaching 25mm in shell length.

- Obtain authorization from the Division prior to conducting activities associated with transplanting and relaying of wild shellfish stocks.

- Obtain authorization from the Division to relay market-size shellfish stocks to or from leases that are temporarily or permanently closed to direct-to-market sale.

- Relaying must comply with the provisions of subsection 5L-1.009, F.A.C.

- Transport, harvest or sale of shellfish, other than seedstock as defined in this section, from a grow-out facility (lease) which is closed for public health purposes to another growout facility is prohibited without a valid special activity license for relaying.

- Grading of clams must be performed by the aquaculturists over his lease (approved waters) or at a certified shellfish processor.

- Washing of clams may be performed by the aquaculturist over his lease (approved waters) or at a land-based facility which possesses an Aquaculture Certification and is

specifically identified as a clam washing facility or at a certified shellfish processing facility.

D. GENETIC PROTECTION

Best Management Practices:

- Aquaculturists who intend to sell or use hard clam seed stocks for further grow-out in the State of Florida must use broodstock which originated from Florida waters in their genetic selection program. Documentation of brood stock origin must be obtained by the hatcheries.

- Aquaculturists located on Atlantic coast waters, who intend to sell or use oyster seed stocks for further grow out in the State of Florida must use broodstock which originated from Florida Atlantic coast waters in their genetic selection program. Aquaculturists located on Gulf Coast waters, who intend to sell or use oyster seed stocks for further grow-out in the State of Florida, must use broodstock which originated from Florida waters of the Gulf of Mexico in their genetic selection program.

- Aquaculturists culturing shellfish, other than oysters and hard clams, located on Atlantic coast waters, who intend to sell or use seed stocks for further grow out in the State of Florida must use broodstock which originated from Florida Atlantic coast waters in their genetic selection program. Aquaculturists located on Gulf Coast waters, who intend to sell or use seed stocks for further grow-out in the State of Florida must use broodstock which originated from Florida waters of the Gulf of Mexico in their genetic selection program.

- All shellfish must be transported or shipped in distinct containers identified by the producer's Aquaculture Certificate Number.

- If producers buy clam seed stocks from an out-of-state source, the hatchery must utilize Florida broodstock in their genetic selection program. Documentation of brood stock origin must be obtained from the hatchery.

- If producers buy oyster seed stocks from an out-of-state source, the hatchery must utilize brood stock from the Florida waters of the Gulf of Mexico in their genetic selection program. Documentation of brood stock origin must be obtained from the hatchery.

- Only the cultivation of indigenous, or hybrids of indigenous shellfish should be placed on submerged lands. Each certificate holder shall notify the Division of the species of shellfish being cultured in Florida waters.

E. DISEASE PREVENTION

The following best management practices are to protect endemic shellfish populations from the potential introduction and transfer of diseases. They should be employed during all production

and transport phases to provide responsible resource management, and reduce or eliminate the risk of disease introduction or transfer.

Best Management Practices:

- Shellfish imported from out-of-state sources for aquacultural purposes must be accompanied by documentation from a licensed veterinarian certifying that the stock does not show clinical signs of any disease pathogen which may pose a threat to natural shellfish populations.

- Stock must currently be free of the following pathogens: Quahog Parasite Unknown (QPX) in clams; *Haplosporidium nelsoni* (MSX), and *Perkinsus marinus* (Dermo) in oysters.

- Because of the known threat of introduction of MSX from oyster stocks grown in the waters of the Atlantic Ocean or drainages into the Atlantic Ocean; the sale of oyster stocks from Atlantic Coast waters is prohibited for use in Florida Gulf Coast waters.

- Florida Gulf Coast hatcheries and nurseries can only provide oyster seed for grow-out in Florida Gulf Coast waters.

- Florida Atlantic Coast hatcheries and nurseries can only provide oyster seed for grow-out in Florida Atlantic Coast waters.

- The producer's Aquaculture Certification Number must accompany bivalves being transported from a hatchery or nursery and to or from growout areas.

- All bivalve facility operators will notify the Florida Department of Agriculture and Consumer Services, Division of Animal Industry, State Veterinarian's Office, 2700 N. John Young Parkway, Kissimmee, FL 32741, phone 407/846-5200 Ext. 226, within 24 hours of any suspected disease outbreaks, (specifically, MSX and Dermo in oysters and QPX in clams).

F. RESOURCE PROTECTION

Perform all aquaculture activities in such a manner so that there will not be an adverse impact on significant resource habitats such as seagrass communities, naturally occurring oyster and clam beds, corals, attached sponges or attached macro marine algae beds or endangered species such as manatees and sea turtles.

XI. LIVE ROCK CULTURE

Live rock consists of geologically distinct substrate placed on the ocean bottom to attract colonizing plant and invertebrate species. The rock is collected after several years of culture and sold into the marine aquaria trade. The use of sovereign submerged state lands for Aquaculture requires that the operator obtain a submerged land's Aquaculture lease. Persons interested in

conducting Aquaculture activities on or above state lands should contact the FDACS, Division of Aquaculture for assistance.

Best Management Practices:

- Natural rock used for a substrate must be geologically distinguishable from naturally occurring rock in the area of the lease.

- Substrate materials, natural or artificial rock must be approved by the FDACS, Division of Aquaculture, prior to deposition on submerged lands or in an upland facility.

- A geologist's lithographic description of the substrate material must be retained until the time of sale and must be made available for inspection by the FDACS, Division of Aquaculture upon request.

- Substrate material should be sufficiently free of sediment and fines so that the deployment does not result in turbidity violations inside or outside of the lease boundary.

- Substrate deployment should be conducted in a manner that minimizes turbidity and does not result in adverse impacts to natural fishery habitats or other benthic resources. Use of native live rock is prohibited.

- Substrate materials should be handled and stored in a manner that minimizes on-site and off-site impacts.

- Substrate containing marine life species not native to Florida waters can only be cultured in upland facilities which sterilize any discharge water or are managed as closed systems having no offsite discharge.

XIII. HEALTH MANAGEMENT

Good aquatic animal health practices are necessary for the success of any aquaculture production facility. Animals are naturally healthy. A sound management and sanitation program will greatly minimize pathogens and disease in your facility. *Knowing the health status of aquatic animals, followed by early diagnosis or prevention of disease is critical to successful production.* Disease prevention is based on good animal husbandry practices, including the reduction of animal stress, minimization of pathogens in the culture environment, and quarantine of unhealthy animals. The FDACS strongly encourages aquaculturists to develop a written aquatic animal health management plan for their facility. The following BMPs, when used in consultation with an aquatic animal health professional or the Florida State Veterinarian Office, are intended to provide the basic components of an aquatic health management plan.

A. HEALTH BMPs FOR ALL SPECIES

- Contact your aquatic animal health professional or the Florida State Veterinarian's Office in the event of any unusual or abnormal occurrences of disease or pests affecting your aquatic species.

- Written authorization may be required from the State Veterinarian prior to importing non-native aquatic species from outside the U.S. Additional authorizations may be required prior to the importation of non-native aquatic species. Please contact, USDA, USFWS, and FWC for more information regarding any requirements they may impose.

- All health records must be retained for at least two years by certified aquaculturists. These records, at a minimum, shall include:

  Aquaculture Certification Number
  Name and Address of consignor
  Name and Address of consignee
  Date of Shipment
  Date of entry/receipt
  Species
  Total number of aquatic animals by species
  Any pertinent recent test results performed to the group of aquatic animals

- Follow accepted animal husbandry practices to maintain a favorable growing environment, such as but not limited to, the following:

  Avoid over crowding
  Maintain proper nutritional programs
  Promptly remove uneaten or undigested food
  Promptly remove dead animals
  Maintain high quality water and oxygen levels
  Minimize stress such as high light intensity, handling, and extreme or rapidly changing temperatures

- Aquatic animals affected by an abnormal occurrence of disease and an undetermined disease should be sent to a diagnostic laboratory for analysis.

- Use medications and remedial agents consistent with the label instructions or as directed by a licensed veterinarian.

- Institute effective biosecurity measures consistent with BMPs found herein.

- Educate personnel on the normal behavioral patterns of aquatic species, to easily distinguish abnormal behavior patterns as a means for early recognition of stress or disease.

- When necessary, establish adequate quarantine practices and procedures.

- Establish a parasite diagnosis and control program.

E. HEALTH BMPs FOR MARINE BIVALVES:

- Bivalves imported from out-of-state for aquacultural purposes must be accompanied by documentation from a licensed veterinarian certifying that the stock is free of the following pathogens: Quahog Parasite Unknown (QPX) in clams; *Haplosporidium nelsoni* (MSX), and *Perkinsus marinus* (Dermo) in oysters. If future additional pathogens are identified as posing a threat to natural stocks, this list may be updated.

- Hatchery operators will maintain records of all brood stock purchases and seed sales for a period of two years. These records will be made available for inspection by the FDACS, Division of Aquaculture upon request.

- The producer's Aquaculture Certification Number must identify bivalves being transported from a hatchery or nursery.

- All bivalve facility operators will notify the Florida Department of Agriculture and Consumer Services, Division of Animal Industry, State Veterinarian's Office, 2700 N. John Young Parkway, Kissimmee, FL 32741, phone 407/846-5200 Ext. 226, within 24 hours of any confirmed disease outbreaks, (specifically, MSX and Dermo in oysters and QPX in clams).

XIV. MORTALITY REMOVAL

A. DISPOSAL OF DEAD ANIMALS

Mortalities and culls removed from production must be handled using the following BMPs.

Best Management Practices:

- Pursuant to Chapter 5C-25, F.A.C., only humane methods may be used for the euthanasia of aquaculture species.

- Sanitize or disinfect and then dispose of organisms(s) in a sanitary and humane fashion in accordance with applicable local and state regulations.

- Contact the FDACS, Division of Aquaculture for additional information.

XVI. SHIPMENT, TRANSPORTATION AND SALE

During shipment and transportation, care must be taken so that potential for escape of aquacultural products is minimized, and state laws are met in the identification of products. The following BMPs will apply to all certified aquaculturists.

Best Management Practices:

- Aquaculture products must be identified with an Aquaculture Certificate number, while possessed, transported or sold from harvest to point of sale. The receipt, bills of sale, bills of lading, or other such manifest must show the certificate number and where the product originated. And if the product is sold to a Florida grow-out facility, the Aquaculture Certificate number of the buyer must also be included. Sale records must contain at least the following information:

    Date of Sale
    Name and address of Seller
    Seller's Aquaculture Certificate number
    Name and address of the Purchaser
    Purchaser's Aquaculture Certificate number (if a Florida Certified Aquaculture Facility)
    Quantity and species identification of aquaculture product sold

- Aquaculture products must be transported in containers that separate aquaculture products pursuant to Chapter 597, F.S., from wild stocks, and such containers must be identified by tags or labels which are securely attached and clearly displayed.

- Records of all live purchases and/or all live sales of restricted species as listed in Rule 68A-23.008, F.A.C., sturgeon, marine shrimp and marine bivalves must include the date of shipment, name, address, and Aquaculture Certification Number(s) of the supplier and the recipient if purchased or sold in Florida. Records must be retained by the hatchery or farm and available for inspection for at least two years. Invoices or bills of lading containing the above information is sufficient to meet this BMP requirement.

XVII. AQUACULTURE CHEMICAL AND DRUG HANDLING

Florida's water resources are particularly susceptible to contamination because of the State's unique geology and hydrology. Groundwater supply often lies at or near the surface, and users of agrichemicals and drugs need to consider the soil's susceptibility to leaching, distance to the water table, slope of the land, and distance to surface water which could provide a direct pathway to ground water. Clay or muck soils are capable of binding certain pesticides with repeated applications. Proper handling, application and disposal practice through the use of BMPs can prevent the contamination of soil, surface waters, and ground water.

A. CHEMICAL USAGE AND HANDLING

Best Management Practices:

- Follow all product label directions for use, storage and disposal.
- Use in accordance with all applicable Federal and State guidelines and laws.

B. SPILL MANAGEMENT

Best Management Practices:

- Immediately contain and dispose of spilled or leaking materials by utilizing barriers and/or absorbent material such as activated charcoal, cat litter, dry sand, or soil in accordance with manufacturers' recommendations and/or State and Federal laws.
- No spills or leaks shall be left unattended.

For additional information about chemical usage, copies of additional chemical data or if you are interested in becoming a licensed chemical applicator, please contact the FDACS, Division of Aquaculture at 850/488-4033.

C. DRUG USAGE AND HANDLING

Best Management Practices:

- All drugs, therapeutic substances, and antibiotics must be used, applied, stored, or disposed only as directed by an FDA approved product label or as prescribed by a Florida licensed veterinarian.
- Drugs may not be used or prescribed for extra-label use when the drug label prohibits extra-label use.

XVIII. AQUATIC ANIMAL WELFARE

Successful aquatic animal husbandry demands that animals be held in healthy environments and fed a healthy diet. Farm raised aquatic animals must be raised under optimal conditions using humane practices. Aquatic animals for slaughter shall be quickly prepared for rapid processing. Aquatic animals reared for stocking in public waters shall be transported under good environmental conditions if the fish are to survive.

Best Management Practices:

- Follow the provisions of Section 828.12, F.S., Cruelty to Animals.
- Comply with Aquaculture Best Management Practices, section XIV. Mortality Removal

- Comply with Aquaculture Best Management Practices, section XV. Preventing Wildlife Depredation.

- Comply with Aquaculture Best Management Practices, section XVI. Shipment, Transportation, and Sale.

- Comply with Aquaculture Best Management Practices, section XVII. Aquaculture Chemical and Drug Handling.

Compliance with these BMPs will ensure aquatic animals are being handled humanely.

Appendix 2. Authorities under Which the Proposed Action will be Conducted

33 CFR 326.4

(a) *Inspections.* District engineers will, at their discretion, take reasonable measures to inspect permitted activities, as required, to ensure that these activities comply with specified terms and conditions. To supplement inspections by their enforcement personnel, district engineers should encourage their other personnel; members of the public; and interested state, local, and other Federal agency representatives to report suspected violations of Corps permits. To facilitate inspections, district engineers will, in appropriate cases, require that copies of ENG Form 4336 be posted conspicuously at the sites of authorized activities and will make available to all interested persons information on the terms and conditions of issued permits. The U.S. Coast Guard will inspect permitted ocean dumping activities pursuant to section 107(c) of the Marine Protection, Research and Sanctuaries Act of 1972, as amended.

(b) *Inspection limitations.* Section 326.4 does not establish a non-discretionary duty to inspect permitted activities for safety, sound engineering practices, or interference with other permitted or unpermitted structures or uses in the area. Further, the regulations implementing the Corps regulatory program do not establish a non-discretionary duty to inspect permitted activities for any other purpose.

(c) *Inspection expenses.* The expenses incurred in connection with the inspection of permitted activities will normally be paid by the Federal Government unless daily supervision or other unusual expenses are involved. In such unusual cases, the district engineer may condition permits to require permittees to pay inspection expenses pursuant to the authority contained in section 9701 of Pub L. 97–258 (33 U.S.C. 9701). The collection and disposition of inspection expense funds obtained from applicants will be administered in accordance with the relevant Corps regulations governing such funds.

(d) *Non-compliance.* If a district engineer determines that a permittee has violated the terms or conditions of the permit and that the violation is sufficiently serious to require an enforcement action, then he should, unless at his discretion he deems it inappropriate: (1) First contact the permittee; (2) Request corrected plans reflecting actual work, if needed; and (3) Attempt to resolve the violation. Resolution of the violation may take the form of the permitted project being voluntarily brought into compliance or of a permit modification (33 CFR 325.7(b)). If a mutually agreeable solution cannot be reached, a written order requiring compliance should normally be issued and delivered by personal service. Issuance of an order is not, however, a prerequisite to legal action. If an order is issued, it will specify a time period of not more than 30 days for bringing the permitted project into compliance, and a copy will be sent to the appropriate state official pursuant to section 404(s)(2) of the Clean Water Act. If the permittee fails to comply with the order within the specified period of time, the district engineer may consider using the suspension/revocation procedures in 33 CFR 325.7(c) and/or he may recommend legal action in accordance with §326.5.

Implementing regulations for permits issued by the COE can be found at 33 CFR 320-331.

Chapter 253 F.S. provides the authority and conditions for leasing sovereign submerged lands and the water column for the purpose of aquaculture. Subject to the limitations contained in sections 253.67-253.75, F.S., the Board of Trustees for the Internal Public Improvement Trust Fund may lease submerged lands to which it has title for the conduct of aquaculture activities and grant exclusive use of the bottom and the water column to the extent required by those activities:

253.68

Authority to lease or use submerged lands and water column for aquaculture activities.

—

(1)

To the extent that it is not contrary to the public interest, and subject to limitations contained in ss. 253.67-253.75, the board of trustees may lease or authorize the use of submerged lands to which it has title for the conduct of aquaculture activities and grant exclusive use of the bottom and the water column to the extent required by such activities. "Aquaculture activities" means any activities, as determined by board rule, related to the production of aquacultural products, including, but not limited to, producing, storing, handling, grading, sorting, transporting, harvesting, and aquaculture support docking. Such leases or authorizations may permit use of the submerged land and water column for either commercial or experimental purposes. However, a resolution of objection adopted by a majority of the county commission of a county within whose boundaries the proposed leased area would lie, if the boundaries were extended to the extent of the interest of the state, may be filed with the board of trustees within 30 days of the date of the first publication of notice as required by s. 253.70. Prior to the granting of any such leases or authorizations, the board shall by rule establish and publish guidelines to be followed when considering applications for lease or authorization. Such guidelines shall be designed to protect the public's interest in submerged lands and the publicly owned water column.

(2)(a)

The Legislature finds that the state's ability to supply fresh seafood and other aquaculture products has been diminished by a combination of factors, including a diminution of the resources and restrictions on the harvest of certain marine species. The Legislature declares that it is in the state's economic, resource enhancement, and food production interests to promote aquaculture production of food and nonfood aquatic species by facilitating the review and approval processes for authorizing the use of sovereignty submerged land or the water column; simplifying environmental permitting; supporting educational, research, and demonstration programs; and assisting certain local governments to develop aquaculture as a means to promote economic development. The Legislature declares that aquaculture shall be recognized as a practicable resource management alternative to produce marine aquaculture products, to protect and conserve natural resources, to reduce competition for natural stocks, and to augment and restore natural populations. Therefore, for the purpose of this section, the Legislature declares that aquaculture is in the public interest.

(b)

It shall be the policy of the state to foster aquaculture development when the aquaculture activity is consistent with state resource management goals, environmental protection, proprietary interests, and the state aquaculture plan.

Section 253.69, F.S., requires that any individual or company that wishes to conduct aquaculture activities on sovereign submerged lands shall file a written application that contains the following information:

(1) the name and address of the applicant;
(2) a description of the location and amount of submerged lands desired;
(3) a description of the proposed aquaculture activity; and
(4) other information required by the Board.

Aquaculture lease application guidelines have been developed pursuant to Section 253.68, F.S., to assist applicants in understanding the procedures to be followed when applying for an aquaculture lease. The aquaculture lease application guidelines are summarized below and are provided as part of the lease application package.

The first step is usually an information transfer process that is initiated when an applicant contacts FDACS' Division of Aquaculture and requests information regarding the aquaculture leasing program. In response to this initial request, staff sends an aquaculture information package to perspective applicants, which provides information about the application process. The applicant selects an area and makes application for a specific parcel, or the applicant may apply for a lease parcel in special AUZ tracts that have been identified by FDACS.

Next, the applicant submits an application which describes the proposed aquaculture activity in sufficient detail to allow staff to evaluate the application and determine the suitability of the proposed site for the proposed aquaculture activity. The applicant must also describe the harvest method that will be used. Applicants are required to develop a business plan to be submitted as part of the application that demonstrates the amount of acreage that will be required to meet their proposed production levels. The business plan must also project the amount of time that will be required to bring the lease into full cultivation and meet the effective cultivation requirements.

The applicants must also submit the following information:
1. Certified list of the names and addresses of all riparian upland property owners who live within 500 ft of the nominated area. This is done by copying the latest records of the county tax assessor and asking an official in that office to attach a certification to it, stating that the names and addresses were taken from the latest tax rolls. If the proposed lease is located less than 1,000 ft off shore, then the applicant must be the riparian upland property owner, or obtain a notarized letter from the affected property owner or owners stating that the applicant has their permission to establish a lease there for at least 10 years.
2. A statement describing the general site characteristics and an explanation of any changes to the area that would result from the proposed aquaculture activity, (e.g., soft bottom will require the placement of approximately 100 cubic yards of cultch for oyster growth). The applicant should also include a navigation chart to show the water depths, and sketch in any/all existing and proposed fixed structures, navigation channels, and the distance from shore.
3. The location of the site on a map in sufficient detail to allow a site inspection by FDACS field staff who may be unfamiliar with the area. Applicants are encouraged to provide a USGS topographic map or a navigation chart, the latitude and longitude coordinates, and the boundaries for the total acreage requested.
4. A research plan must be submitted for an experimental lease which documents the research organization and describes the proposed research activity.
5. A $200 nonrefundable application processing fee must be submitted to FDACS.

Once an application is received and reviewed, the applicant is informed as to the status of the application, if it is complete or incomplete, and if additional information is required. If additional information is required from the applicant, then the applicant has 90 days either to request a waiver of time or submit the required additional information. This process will continue until the application is complete or the application is deactivated. Failure on the applicant's part to respond will cause the application to be deactivated and the application fee will not be refunded. Applications remain on file with FDACS' Division of Aquaculture, and may be modified at a later date.

Staff reviews the proposed aquaculture activities and the 10-year business plan to determine if the applicants are capable of performing the proposed activities and accomplishing the business plan. During the review process, a determination is made regarding the applicant's ability to perform the proposed aquaculture activities. Applicants and persons acting on behalf of the applicants must demonstrate an understanding of the technical, regulatory, and business aspects of the proposed aquaculture activity.

The Division of Aquaculture will coordinate the inspection and resource survey of the proposed site. Staff will visit the site, preferably with the applicant, to determine whether or not the site is appropriate for leasing. In cases where the proposed site is located in an aquatic preserve, research reserve or sanctuary, staff will request assistance from the appropriate entities responsible for managing the aquatic area. The site inspection is based on the criteria established in Section 18-21.005, F.A.C., including:

1. the desirability of the proposed aquaculture activity from a resource management perspective;
2. the size of the area requested being appropriate for the proposed use; and
3. the suitability of the site for leasing.

Resource surveys provide information to evaluate environmental parameters and resource management practices to determine the desirability of the proposed location and the proposed activity from a resource management perspective. FDACS personnel review each individual aquaculture application to ensure that the proposed activity complies with all of the applicable state and federal regulations, including compliance with all of the PDCs of PGP SAJ-99. FDACS will review each individual aquaculture application to ensure that the proposed activities result in no significant effect to species listed and critical habitat designated under the ESA. FDACS may recommend modifications to the proposed lease boundaries or special lease conditions to minimize or eliminate potential adverse environmental impacts or to reduce conflicts with other water and upland uses and users. The resource survey, staff recommendations, and proposed special lease conditions are submitted in a report that is placed in the lease file and will later be presented to other resource agencies and the Board of Trustees for the Internal Public Improvement Trust Fund for additional review, as described below.

When all of the required information has been received by FDACS, the lease application is deemed to be complete. At this point, the lease application is placed on the active list and is ready for additional review. Applications are processed in the order received. When the application is complete, a copy is sent to various other resource agencies for review; including the COE, the Department of Environmental Protection (DEP), the Florida Fish and Wildlife

Conservation Commission (FWCC), and NMFS. The application is reviewed by the staff of these agencies depending upon each agency's management responsibilities, including: ownership of the submerged lands (DEP); environmental impacts of the proposed activities (FDACS and DEP), the suitability of the site for the proposed activities (FDACS and DEP), effects on the conservation of fish and wildlife (FWCC), effects of the individual action on protected resources (NMFS), and additional permit requirements (FDACS, DEP, and the COE).

Appendix 3. Critical Habitat Essential Features for species considered in PGP SAJ-99.

Smalltooth sawfish (74 FR 45353, Effective Date: 10/02/2009)	The physical and biological features essential to the conservation of the U.S. DPS of smalltooth sawfish, which provide nursery area functions are: red mangroves and shallow euryhaline habitats characterized by water depths between the Mean High Water line and 3 ft (0.9 m) measured at Mean Lower Low Water (MLLW). These features are included in critical habitat within the boundaries of the specific areas in paragraph (b) of this section, except where the features were not physically accessible to sawfish at the time of this designation (September 2009); for example, areas where existing water control structures prevent sawfish passage to habitats beyond the structure.
Gulf sturgeon (68 FR 13370, Effective Date: 04/18/2003)	Based on the best available information, primary constituent elements essential for the conservation of the Gulf sturgeon include the following: abundant prey items within riverine habitats for larval and juvenile life stages, and within estuarine and marine habitats and substrates for juvenile, subadult, and adult life stages; riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone or hard clay; riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed depths, believed necessary for minimizing energy expenditures during fresh water residency and possibly for osmoregulatory functions; a flow regime (*i.e.*, the magnitude, frequency, duration, seasonality, and rate-of-change of fresh water discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging; and necessary for maintaining spawning sites in suitable condition for egg attachment, eggs sheltering, resting, and larvae staging; water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; sediment quality, including texture and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (*e.g.* a river unobstructed by any permanent structure, or a dammed river that still allows for passage).
Loggerhead sea turtle (79 FR 39855, Effective Date: 08/11/2014)	1. Nearshore reproductive habitat: The PBF of nearshore reproductive habitat as a portion of the nearshore waters adjacent to nesting beaches that are used by hatchlings to egress to the open-water environment as well as by nesting females to transit between beach and open water during the nesting season. The following PCEs support this habitat: (i) Nearshore waters directly off the highest density nesting beaches and their adjacent beaches, as identified in 50 CFR 17.95(c), to 1.6 km offshore; (ii) Waters sufficiently free of obstructions or artificial lighting to allow transit through the surf zone and outward toward open water; and (iii) Waters with minimal manmade structures that could promote predators (i.e., nearshore predator concentration caused by submerged and emergent offshore structures), disrupt wave patterns necessary for orientation, and/or create excessive longshore currents. 2. Winter area: Florida does not contain any winter areas. 3. Breeding areas: the PBF of concentrated breeding habitat as those sites with high densities of both male and female adult individuals during the breeding season. PCEs that support this habitat are the following: (i) High densities of reproductive

	male and female loggerheads; (ii) Proximity to primary Florida migratory corridor; and (iii) Proximity to Florida nesting grounds. 4. Constricted migratory habitat: the PBF of constricted migratory habitat as high use migratory corridors that are constricted (limited in width) by land on one side and the edge of the continental shelf and Gulf Stream on the other side. PCEs that support this habitat are the following: (i) Constricted continental shelf area relative to nearby continental shelf waters that concentrate migratory pathways; and (ii) Passage conditions to allow for migration to and from nesting, breeding, and/or foraging areas. 5. Sargassum habitat: the PBF of loggerhead *Sargassum* habitat as developmental and foraging habitat for young loggerheads where surface waters form accumulations of floating material, especially *Sargassum.* PCEs that support this habitat are the following: (i) Convergence zones, surface-water downwelling areas, the margins of major boundary currents (Gulf Stream), and other locations where there are concentrated components of the *Sargassum* community in water temperatures suitable for the optimal growth of *Sargassum* and inhabitance of loggerheads; (ii) *Sargassum* in concentrations that support adequate prey abundance and cover; (iii) Available prey and other material associated with *Sargassum* habitat including, but not limited to, plants and cyanobacteria and animals native to the *Sargassum* community such as hydroids and copepods; and (iv) Sufficient water depth and proximity to available currents to ensure offshore transport (out of the surf zone), and foraging and cover requirements by *Sargassum* for post-hatchling loggerheads, i.e., >10 m depth.
Acropora (Staghorn and elkhorn coral)(73 FR 72210, Effective Date:11/26/2008)	The physical feature essential to the conservation of elkhorn and staghorn corals is: substrate of suitable quality and availability to support larval settlement and recruitment, and reattachment and recruitment of asexual fragments. "Substrate of suitable quality and availability" is defined as natural consolidated hard substrate or dead coral skeleton that is free from fleshy or turf macroalgae cover and sediment cover.
Johnson's seagrass (65 FR 17786, Effective Date: 04/05/2000)	Based on the best available information, general physical and biological features of the critical habitat areas include adequate water quality, salinity levels, water transparency, and stable, unconsolidated sediments that are free from physical disturbance.
North Atlantic right whale (The original rule is 59 FR 28805, Effective Date: 07/05/1994, and the proposed rule is 80 FR 9314, Effective Date: 02/20/ 2015)	**Original Rule features:** The nearshore waters of northeast Florida and southern Georgia were first designated as North Atlantic right whale critical habitat in 1994 based on use of the habitat as a winter calving ground and nursery area. At that time, essential features to critical habitat were not precisely defined; however, water temperature and depth were found to be important (59 FR 28805). The waters in the southeast critical habitat area average about 30 m (98 ft) in depth with a maximum depth of about 60 m (196 ft). Based on right whale sighting distribution data, the average water depth at sighting was 12.6 m (41.3 ft), which is consistent with previous data suggesting North Atlantic right whales in the southeast prefer using the nearshore edge. While it is difficult to separate the effects of temperature from depth and proximity to shore, sighting data indicates that North Atlantic right whales clearly prefer a band of relatively cool water (10-13°C) while occupying southeast waters.

	Proposed Rule features: Critical habitat includes two areas (Units) located in the Gulf of Maine and Georges Bank Region (Unit 1) and off the coast of North Carolina, South Carolina, Georgia and Florida (Unit 2). *Unit 2.* The physical features essential to the conservation of the North Atlantic right whale, which provide calving area functions in Unit 2, are: (i) Sea surface conditions associated with Force 4 or less on the Beaufort Scale, (ii) Sea surface temperatures of 7°C to 17°C, and (iii) Water depths of 6 to 28 meters, where these features simultaneously co-occur over contiguous areas of at least 231 nmi^2 of ocean waters during the months of November through April. When these features are available, they are selected by right whale cows and calves in dynamic combinations that are suitable for calving, nursing, and rearing, and which vary, within the ranges specified, depending on factors such as weather and age of the calves.