**Florida Fish and Wildlife Conservation Commission (FWC)**
**COMMENTS ON POLICIES AND CONSIDERATIONS REDRAFTS**
**November 2013**

## POLICIES FOR THE PROTECTION AND RESTORATION OF ESSENTIAL FISH HABITATS FROM ALTERATIONS TO RIVERINE, ESTUARINE AND NEARSHORE FLOWS (Redraft November 2013)

The FWC is unclear why this Policy excludes any discussion of Submerged Aquatic Vegetation (SAV). We suspect it may be because there is a separate SAV Policy, but the separate SAV policy does not fully address the water flow issue. The FWC recommends this water flow Policy be amended to generally incorporate SAV into the multiple discussions, and perhaps refer to the SAV Policy for more in depth discussions.

## POLICY CONSIDERATIONS FOR THE INTERACTIONS BETWEEN ESSENTIAL FISH HABITATS AND MARINE AQUACULTURE (Redraft - November 2013)

**"Introduction"** pg. 18, second paragraph

"The policies and recommendations established in this document are designed to avoid and minimize impacts and optimize benefits from these activities, in accordance with the general habitat policies of the SAFMC as mandated by law."

Despite the stated design of the policies and recommendations established in this document, this document appears to be more of an overview of potential impacts and does not necessarily provide specific recommendations to consider for avoidance and minimization of such impacts. The FWC recommends that this document should be further developed to include specific recommendations for consideration to avoid and minimize potential impacts that are currently identified throughout the document.

**"Overview of Marine Aquaculture and EFH Interactions"** pg. 20, end of first paragraph

"The SAFMC specifically recognizes the following potential interactions between marine aquaculture and EFH:"

The FWC recommends addressing the use of antifouling biocides in marine aquaculture and the potential impacts to fisheries and EFH somewhere in this section addressing interactions. A reference on this issue is available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3291976/

**"Escapement"** pg. 21, second paragraph

The FWC recommends amended language in strike/add format as follows:

"The likelihood of escapes from aquaculture operations will vary depending on the species being cultured, siting guidelines, structural engineering and operational design, management practices (including probability for human error), ~~frequency of~~adequacy of contingency plans for extreme weather events, and direct interactions with predators such as sharks, marine mammals, and birds."

**"Disease in aquaculture"** pg. 21

The FWC recommends inclusion within the recommended management guidelines for disease outbreaks that disease and mortality incidents should be immediately reported to the appropriate entity (state and federal), so the risk to wild stocks and habitats can be assessed and a determination made if control measures should be put in place.

**"Use of drugs, biologics and other chemicals"** pg. 22

This section is contains information regarding the use of drugs, biologics and other chemicals for onshore aquaculture operations for marine species, but contains very little information regarding their use in open-water (nearshore or offshore) marine aquaculture operations (e.g., net pens). This section should be further developed to provide additional considerations for the use of drugs, biologics and other chemicals in open-water aquaculture operations, specifically addressing the potential interactions with fisheries and EFH. Currently the considerations provided in this section would not necessarily support the development of policies and regulations for open-water marine aquaculture operations.

Closed onshore systems, onshore systems with effluent discharge into nearshore waters and net pens in nearshore waters, and net pens in offshore waters, all pose different concerns. Considerations for each type of system that could be addressed in this section are as follows:

1) Closed onshore systems may super-concentrate chemicals and a short list of pathogens with direct life cycles and as such, can be a human health concern but aren't as likely to pose environmental risk.
2) Onshore systems with effluent discharge into nearshore waters and nearshore net pens have the greatest potential to cause negative environmental impact and the diversity of potentially problematic pathogens is greatly increased due to the presence of intermediate hosts for pathogens with complex life cycles.
3) Offshore net pens - rapid dilution of chemicals and pathogens reduces the potential for negative environmental impacts; however, wild fish congregate around sea cages and can be infected by concentrated parasites and exposure to chemicals. Additionally, some types of fouling organisms can serve as intermediate hosts for pathogens and human consumer exposure is still a concern.

Other recommended considerations for this section are as follows:

1) The significance of drug labeling and potential impacts from extra-label use or use of drugs in open-water aquaculture operations that were labeled prior to the time when open-water (net pen) aquaculture was being taken into consideration for the labeling process.

2) Identify if INAD exemptions provide for use in open-water aquaculture operations and if so, identify considerations that should be made by USFWS when granting such exemptions such as usage based on current flow and patterns (e.g., outgoing/incoming tide), specific antibiotic's pharmacokinetic features, metabolism, excretion, mode of administration (e.g., injection, feed additive, bath immersion), and its fate and effect.
3) Appendix C – in addition to identifying the "Active Ingredient", "Tradename", and "Indications", we recommend including an additional column for "Labeling" that identifies the specified approved usage of the drug.
4) The use of drugs and chemicals are described as an integrated component in aquaculture, but use of such products in net pens particularly in nearshore waters would absolutely impact local flora and fauna since diversity is higher than in offshore waters.
5) Frequency of drug use and the potential risk from persistent, low level exposure on wild organisms.

**"Water quality impacts"** pg. 24

Recommended considerations:

1) If water and sediment quality declines are detected, what considerations should be made for how these declines could potentially be addressed or mitigated for with regard to impacts on onshore, nearshore and offshore EFH?
2) Contingency planning for harmful algal blooms and other natural perturbations should be considered such as net pen relocation and development of a coordinated early warning system designed to minimize economic loss and environmental impact from dead and decaying aquacultured product (e.g., disease transfer).

**"General Requirements"** pg 29

*4. Only native or naturalized species should be used for aquaculture in federal waters of the South Atlantic unless <u>best available science demonstrates use of non-native or other species would not cause undue harm</u> to wild species, habitats, or ecosystems in the event of an escape.*

The term "naturalized species" sends up a red flag. For example, feral mallards are naturalized in Florida but many of the ~90,000 domestic mallards that escape each year (despite state permitting and containment requirements) continue to negatively impact native mottled ducks via hybridization. The FWC recommends that SAFMC deletes the term "naturalized species" or provides some justification for its inclusion (and perhaps examples of 'naturalized species' SAFMC considers marine aquaculture species or candidates).

The underlined portion of the above statement, as currently written, is somewhat pedestrian (e.g. "undue harm"), vaguely prospective (e.g. "best available science demonstrates"), and overall lacking serious rigor considering the potential ecological costs of being wrong. Science, be it good or less than good, available or otherwise, cannot actually demonstrate that a future event will or will not happen; thus, the highlighted statement represents an untenable requirement. The FWC recommends as an alternative that it be specifically required that permitting/licensing agencies conduct or oversee a formal, comprehensive, criterion-based, and fully documented risk

assessment process using qualified personnel, for each request involving non-natives. Attached is an example of such a risk assessment process that the FWC uses for assessing potential risks for all "release" activities, including non-native species (the term "release" includes but is not limited to introductions of cultured organisms via aquaculture, research, restoration or enhancement activities; via in-water grow-out or holding facilities; transplantation/relocation of marine organisms). The FWC risk assessment flow chart is incorporated into the FWC rule governing the issuance of the license required for release activities.

The FWC is opposed to any aquaculture activity in waters outside of Florida's direct regulatory jurisdiction which could, via escape and subsequent dispersal, reasonably lead to the introduction at any scale of non-native species within Florida state waters. This will become a consistency issue should the State of Florida review any federal permit application that includes the use of non-native species in federal waters of the South Atlantic for aquaculture purposes, pursuant to the Coastal Zone Management Act/Florida Coastal Management Program.

In addition to FWC rules that regulate releases and associated genetic impacts, 379.26, Florida Statute prohibits the release of any non-native saltwater species into the waters of the state. Both FWC rules and this statute are included in Florida's Coastal Management Program. The Florida Department of Agriculture also has regulatory Aquaculture Best Management Practices (pursuant to Chapter 597, Florida Statutes and 5L-3, Florida Administrative Code also included in Florida's Coastal Management Program), which require non-native species containment and prevention of release into the environment, and prohibits the use of non-native species specifically for marine net pens and cage aquaculture.

*5. The use of genetically engineered aquatic organisms should be considered separately, pending approval by FDA.*

The FWC is opposed to any aquaculture activity in waters outside of Florida's direct regulatory jurisdiction which could, via escape and subsequent dispersal, reasonably lead to the introduction at any scale of transgenic species within Florida state waters. This will become a consistency issue should the State of Florida review any federal permit application that includes the use of transgenic species in federal waters of the South Atlantic for aquaculture purposes, pursuant to the Coastal Zone Management Act/Florida Coastal Management Program.

In addition to FWC rules included in Florida's Coastal Management Program that regulate releases and associated genetic impacts, the Florida Department of Agriculture also has regulatory Aquaculture Best Management Practices (pursuant to Chapter 597, Florida Statutes and 5L-3, Florida Administrative Code also included in Florida's Coastal Management Program), which prohibit the use of transgenic species specifically for marine net pens and cage aquaculture.

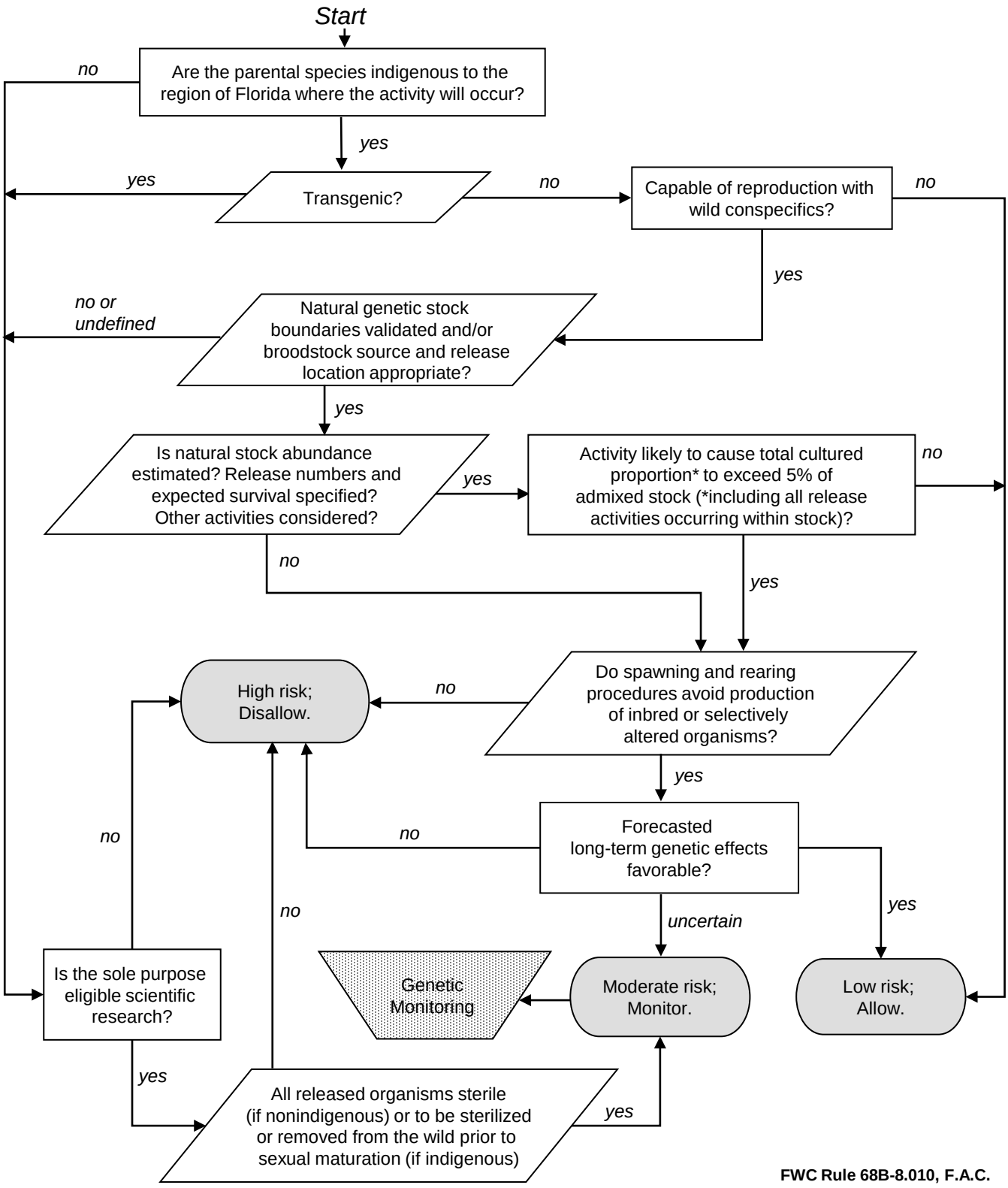
**General Comment**

Considerations should be made with regards to who will be responsible for assessing surrounding impacts to the environment, and recommendations provided for monitoring to assess

effects on water quality, disease or pathogen spread, antibiotic resistance, nutrient loading etc., during pre and post operational set up and long term operation.

**Decision Process for the Genetic Risk Assessment of Releases Involving Marine Organisms**
**Florida Fish and Wildlife Conservation Commission**
**September 2009**

Parallelograms identify applicant-supplied information; rectangles represent assessment decisions; grey trapezoid identifies a requisite plan; ovals depict assessment recommendations.




**FWC Rule 68B-8.010, F.A.C.**