Hearing on the National Offshore Aquaculture Act, S-1195
U.S. Senate Committee on Commerce, Science and Transportation
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Written Testimony

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Introduction:

Good morning. I greatly appreciate the opportunity to testify today about the very important issues associated with offshore aquaculture. My name is Marianne Cufone. I am an environmental attorney and advocate in Tampa, Florida. I work with a wide variety of groups and individuals on fisheries issues, including open ocean aquaculture. I am the Vice Chair of the Gulf of Mexico Fishery Management Council Advisory Panel on Offshore Aquaculture, a member of the Florida Department of Agriculture and Consumer Services Task Force on open water aquaculture and I have been helping to coordinate a broad-based regional coalition to collaboratively engage on marine aquaculture matters.

Through years of environmental advocacy, I have seen very few issues that most users groups can come together and speak on with almost one voice. Open water aquaculture is one such anomaly[1]. I am honored to be here today on behalf of not just one particular organization, but rather many in the Gulf of Mexico region, including the Center for Food Safety[2], the Gulf Restoration Network[3], the Institute for Fisheries Resources[4], the Southeastern Fisheries Association[5], and the Southern Shrimp Alliance[6], to highlight a few of the coalition members. These are conservation, fishing and consumer organizations…all concerned by potential negative impacts associated with open ocean aquaculture.

There are currently many concerns about commercial development of offshore aquaculture in United States waters, far more than I can cover in a few minutes or pages. I will therefore concentrate on the issues I and

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[1] Attached, please see the letter dated May 24, 2005, regarding offshore aquaculture. This letter had a wide range of signatories, many of which are from or work in the Gulf of Mexico region.

[2] **The Center for Food Safety** (CFS) is a non-profit public interest and environmental advocacy membership organization established in 1997 by its sister organization, International Center for Technology Assessment, for the purpose of challenging harmful food production technologies and promoting sustainable alternatives. CFS has offices in Washington, DC and San Francisco, CA and engages in work throughout the United States.

[3] **The Gulf Restoration Network** (GRN) is a 501 c 3 non-profit alliance of over fifty groups and individuals committed to uniting and empowering people to protect and restore the resources of the Gulf of Mexico region. GRN has members in all five Gulf of Mexico States.

[4] **The Institute for Fisheries Resources** (IFR) is a 501 c 3 non-profit organization dedicated to the protection and restoration of fish resources and the human economies that depend on them. By establishing alliances among fishing men and women, government agencies, and concerned citizens, IFR **unites** resource stakeholders, **protects** fish populations, and **restores** aquatic habitats.

[5] **Southeastern Fisheries Association** (SFA) is a 501 C 6 not-for-profit fisheries trade association founded in Florida in 1952. SFA represents seafood dealers that handle eighty-five percent of the pink shrimp landed in the state and the majority of spiny lobster, stone crab, grouper and oysters in the state of Florida. SFA has members in all segments and sectors of the fishing industry, including importers, exporters and aquaculturists.

[6] **Southern Shrimp Alliance** (SSA) is a non-profit network of members of the shrimp industry in eight states. SSA serves as the national voice for the shrimp fishermen and processors in Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas.

those I work with find most pressing regarding S-1195. The first is pollution: both of wild fish populations and the environment. The second is user conflicts.

Pollution:

Pollution of wild fish populations occurs when there is intermixing of aquacultured fish with wild fish. Offshore aquaculture of finfish currently utilizes a cage or pen to contain the fish. Even well engineered and strategically placed cages and pens will have some escape of fish from these containers into the open ocean from various complications like severe weather, predators tearing at netting, failed equipment, human error and a number of other possibilities. Because these fish are captive and bred for profit, they are often different from wild fish. The captive fish may be exotic species, from a different area entirely to introduce a new product to a local market. Aquacultured fish can mutate in captivity for unknown reasons, or because of continued inbreeding. Some fish behaviors are learned from natural communal interactions, so even unaltered captive fish can have different behaviors than wild fish and if released, the aquacultured fish can change natural behaviors in the wild. Perhaps most disturbing, fish used for aquaculture might be intentionally genetically modified to create faster growing and larger fish or might be continually selectively bred to achieve similar results. Escape of fish that are different from wild fish could change the ecosystem and natural fish populations permanently.

There are ways to help assure minimal escapement and intermixing of wild fish with different captive fish: requiring use of best available technology for cages and pens and preventing use of non-native species and genetically modified organisms are important standards. Additionally, other methods of minimizing intermixing in the event of an escape should be reviewed and evaluated, for example the scientific merit of requiring only use of first generation fish or alternatively hyper-domestication of animals in open water facilities.

Pollution of the environment occurs when there are substances coming out of the aquaculture facility into our waters, like excess food, fish waste, parasites and other diseases, excessive algal growth, dislodged cage or other facility materials and antibiotics or other chemicals. These all can destroy important habitat, like corals and seagrass, even far from the facilities, carried by currents. Debris and other wastes can contaminate our water and cause safety hazards for boaters, fishermen and divers and of course, harm wildlife.

Because there are numerous pollution concerns associated with open water aquaculture, a stringent program to first guard against releases and then quickly alleviate any damage is most critical. Establishing strict environmental requirements with detailed pollution prevention and mitigation plans as conditions of operation before any permits issue and then conditioning annual permit renewal on environmental performance could promote more careful processes and rapid recovery time. Some specific measures include: regular removal of biofouling and mortalities, preventing use of antibiotics or other chemicals, requiring efficient feed usage, careful placement of anchors, cable and other structure, current mapping, and disease control.

User Conflicts:

Because offshore aquaculture facilities will take up real space in the marine environment, various user conflicts are expected between offshore aquaculture and other ocean uses. Contributing to this is the express provision in S-1195 that allows creation of buffer zones around aquaculture areas in which no activities will be permitted other than those relative to the aquaculture facility. Some of the most likely and troubling conflicts are those regarding known fishing grounds and routes to those fishing grounds, other vessel traffic lanes, military sites and areas of concern regarding national security, marine reserves, sanctuaries and otherwise protected or vulnerable areas and areas of significant multiple use, for example where there are

boating, diving, water sports and swimming. Essentially S-1195 will re-allocate public resources for private gains without protecting existing uses.

Rather than establishing buffer zones only around aquaculture facilities, buffer zones should be created around areas of current significant competing economic use or public value, especially including known fishing grounds and routes to those fishing grounds, vessel traffic lanes, military sites and areas of concern regarding national security, marine reserves, sanctuaries and otherwise protected or fragile areas. Additionally, the use of areas of significant multiple use and/or public value for open water aquaculture should be completely prevented.

Another area of significant conflict involves composition of aquacultured fish feed. Cultured species are often directly fed wild caught species or products that contain wild species, in the form of fish meal or fish oil. This is an inefficient use of the available natural protein resources. The resulting net loss of fish protein means that offshore fish farming is not a good alternative to wild capture fishing, though often touted as being such, and may actually increase fishing pressure on wild fish populations as demand and prices rise for fish meal and fish oil to feed captive fish.

Lower trophic level species like krill, squid, and other small fish are a crucial part of the marine ecosystem, serving as prey for marine mammals, birds and fish yet are still used to make captive fish feed. Many commercially and recreationally important fish species depend directly on the availability and abundance of such prey species for their survival and recovery. Prey species also support several species of endangered marine mammals and seabirds. In order to effectively protect and restore our natural ocean resources, it is critical to protect the health and availability of prey species. Wild fish populations and other threatened and endangered species can only recover and thrive if the ecosystem upon which they depend is intact. Use of wild fish in creating feed for captive fish creates a very real problem for wild fisheries and other marine life.

Some limitations on use of wild caught species in as food for captive species should be established. There is ongoing research into alternative food sources for captive fish and best available technology should be required to ensure adequate food supply for natural wildlife.

Regional Matters:

These are all serious issues nationwide, but particularly in the Gulf of Mexico, many people are very concerned about expanded development of offshore aquaculture. Historically, we are coastal people known for our commercial and recreational fisheries including shrimp, crab, lobster snapper, grouper and many more. Tourism, based on our environment, is a key economic factor and so many of us live around the Gulf of Mexico to enjoy the benefits of a coastal lifestyle: relaxing on white sand beaches, swimming in clear blue waters, boating and countless water sports. Also, the severe hurricanes of the past 2 years make us very vulnerable to any further alterations in our marine world.

One matter in particular that became very troubling to many Gulf residents after assessing damage from the catastrophic storms is the use of oil rigs as sites for aquaculture facilities. During the hurricanes, oil rigs were destroyed, some even being carried miles to shore. Had offshore aquaculture existed on these rigs at the time of the storms, there would have been massive releases of captive fish, feed and other pollutants directly into Gulf of Mexico waters.

Oil rigs are erected for a purposes and when that purpose is completed, they should be removed as originally contemplated, not transitioned into other uses that might cause serious long term negative consequences. There are open water net pens and cages better designed to withstand storm activity and other disturbances far better suited for use in open ocean aquaculture than oil rig structures initially created for something entirely different. In general, recycling and re-use of materials is something I strongly support, but the

consequences potentially far outweigh the benefit in this particular instance. Oil rigs, active or decommissioned, should not be substituted for best available technology in open water aquaculture.

Our region has been taking steps to protect unique local resources because S-1195 in its current form does not sufficiently do so. The Gulf of Mexico Fishery Management Council is developing an amendment to the fishery management plans for the Gulf of Mexico to manage offshore aquaculture while they still have a meaningful regulatory role. Under S-1195, regional Councils would be ambiguously demoted to a consulting or perhaps consenting entity, though they are in the best position to understand local needs. Currently, these draft Council regulations contain provisions to deal with many of the concerns I previously mentioned associated with offshore aquaculture.

Similarly, the Florida Department of Agriculture and Consumer Services developed open water aquaculture best management practices through a cooperative task force of various interest representatives. These guidelines also address many of the potential threats to our environment and the people that rely on it associated with open water aquaculture.

These documents could be used as guidance for specific matters to include in S-1195, which currently does not provide adequate protections.

Conclusion:

It seems we are rushing into development of offshore aquaculture in United States waters without really considering the consequences.

S-1195 in current form does not adequately protect our valuable marine resources and the many individuals and communities that rely on them, though we have better means to do so.

Expanded commercial development of offshore aquaculture in United States waters may be a benefit in the future, but it should not proceed until after the development of stringent guidelines. S-1195 does not yet provide these.

Thank you for your time and attention. I look forward to working with you and others on these important matters.

Marianne Cufone