

The Federal Commission on Ocean Policy

March 8, 2002

Written Testimony of
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Mr. Chairman, members of the Commission, I appreciate the opportunity to submit these written statements in addition to my oral testimony at the Ocean Commission public hearing March 8, 2002 in New Orleans, LA.

Bon Secour Fisheries is a fourth generation, family-owned and operated shrimp and oyster packing and distribution company. We also operate 11 Gulf shrimp trawl vessels and provide employment for more than 150 individuals. The majority of the oysters and shrimp harvested and handled by our company come from the very productive estuaries of Louisiana.

My family got its start in the oyster business more than 100 years ago with my great grandfather planting oysters in Bon Secour Bay, the eastern portion of Mobile Bay, Alabama. Mobile Bay is no longer a major source of oyster production on the Gulf Coast. The reasons for the demise of this once prosperous industry are unclear, however it is certain that regular closures due to fecal coliform contamination, entering the Bay through its watershed, played a large role.

Currently public health related shellfish closures in Alabama are triggered by rising flood waters at the mouth of the Mobile River. During a wet cycle the Bay can be off limits to harvest for more than 30 days at a time. Unpredictable access to a crop of oysters places too much risk on an oyster grower to warrant the investment in such an operation. Water bottoms in the Bay have also been degraded by siltation, making many formerly productive areas Bay bottom too soft to support on-bottom planting of seed oysters. Furthermore, Mobile Bay's historical occurrences of oxygen depleted bottom water may now be more extensive and long lived as upstream and surrounding coastal zone land use have led to greater and greater inputs of organic material and nutrients. Oxygen depleted water has been shown to severely impact juvenile oysters even elevated above the Bay bottom up to one meter in Bon Secour Bay (Faoud, et al., 2000).

Other changes to the Bay which may have contributed to the aforementioned problems include:

(1) the dredging of the Intercoastal Waterway,

- (2) deepening and widening of the Mobile Ship Channel,
- (3) construction of dams in the river system emptying into the Bay,
- (4) and the construction of an extensive causeway at the head of the Bay.

Put simply, in Alabama, the oyster farming and harvesting industry has been severely limited in its ability to produce oysters likely as a result of significant changes to the Bay system.

In Louisiana oyster production is tremendous. Louisiana's oyster production is 50% of the Gulf production and the Gulf produces on average 60% of the U.S. production. This production has an annual, renewable economic impact of \$280 million. Coastal Louisiana is arguably the most important oyster producing region on earth.

Louisiana oyster farmers face similar challenges to those of my ancestors in Alabama. However, there has been significantly more acreage to utilize as environmental conditions changed. In Louisiana, coastal erosion and saltwater intrusion have altered the location and extent of optimal oyster rearing conditions over time. In general, estuarine waters which provide the optimal salinity range for oyster growth exist far inland of where they were only a few decades ago. Coincident with this forced inland march of the oyster grower has been a seaward movement of population, coastal development and pollution. Oyster growing areas of suitable salinity and water quality have been squeezed between these two geographically opposing trends. In some regions of the Louisiana coast the optimal salinity lines and the water pollution lines have crossed so that there are no suitable oyster growing areas. Statewide up to 70% of farmed water bottoms are closed at any given time of the year due to pollution.

To address the disturbing trend in coastal erosion, the State of Louisiana and the U.S. Corps of Engineers have planned an ambitious series of freshwater diversion projects throughout the southern part of the State. Coastal marshes in Louisiana have been starved of freshwater, and the associated silt and nutrients, since the River was leveed in the early part of the last century. By diverting freshwater from the River, coastal erosion and saltwater intrusion may be slowed or arrested which will return some areas to productive sites for oyster culture. However, there are two primary problems created within the oyster farming community by this proposed solution: (1) Oyster farming operations which have been forced inland by advancing salinity levels will be displaced by the diversion as salinity levels will likely drop below optimum with the vastly increased freshwater flow. (2) The nutrients and other pollutants carried with the freshwater may degrade water quality over the entire area to a point that although oysters may grow they cannot be safely consumed. In addition, these nutrient inputs may foster algae blooms which, if toxic, could cause public health related restrictions on harvest; and if non-toxic but extensive could lead to oxygen depletion.

Thus for coastal Louisiana, freshwater diversion projects carry potential for both risk and reward. The reward could be a stabilized condition for erosion, subsidence and saltwater intrusion. The risk is that the oyster harvesting and farming industry will be displaced and crippled by sudden change in the salinity regime and water quality in oyster

producing areas. It is of vital importance that (1) a smooth and equitable process is maintained for mitigating the effects of freshwater diversion on oyster farmers (involving retention, relocation, exchange or purchase of existing leased oyster bottoms) and (2) that the effects of the freshwater inputs are monitored and understood so that appropriate resource and public health concerns can be addressed through proper management measures.

Texas shellfish producers also face environmental challenges. For most Texas estuarine systems freshwater inflows are reaching critically low levels due to upland water usage and impoundment. It is known that lack of freshwater inflow negatively affects white shrimp (*Penaeus setiferus*) production, particular in South Texas estuaries (Williamson, 1977). Dr. Sammy Ray, the dean of Texas oyster research, has often been quoted as saying that "saltwater is poison to oysters." This is due to his lifelong study of the various negative effects, especially within Texas estuaries, associated with salinities greater than 20 ppt. The oyster disease *Perkinsus marinus*, commonly known as dermo, is a pest along the entire Gulf Coast but is particularly ravaging during periods of high salinity. The oyster drill *Thais haemastoma* is able to tolerate salinities of 20 ppt or higher and thus becomes a devastating source of predation as salinities increase. Finally, toxic species of planktonic algae, blooms of which are referred to as red tide, can become established in coastal estuaries and, upon blooming, can cause shellfish bed closures in efforts to protect public health. Such red tide closures were unrecorded along the Texas coast from 1953 to 1987. Since 1987 certain Texas estuaries are closed to oyster harvest at least every two years (Kirk Wiles, Texas Public Health Department, personal communication).

In Galveston Bay the situation may be further worsened by a planned widening and deepening of the Houston ship channel. This will allow salt water, the Texas "oyster poison", to intrude farther northward and eastward into the Bay. This in turn will push oyster production northward and closer to probable pollution sources in the Houston Metropolitan area and in the Trinity River watershed. Thus, Texas oyster farmers and fishermen may face similar challenges to those in Louisiana, being squeezed between landward advancing high salinity regimes and seaward advancing water quality degradation.

Texas oyster production is also at risk from ballast water discharge in Galveston Bay. In June of 1998 a widespread outbreak of illness caused by an exotic strain the bacterium *Vibrio parahaemolyticus* occurred from the consumption of Galveston Bay oysters. Oyster harvest in the Bay was voluntarily halted by the Texas oyster industry for over four months as a precaution against further illnesses. Ballast water discharge was the likely source of the exotic serotype 03:K6 which was isolated from outbreak victims. Although common in Asia, this strain of *V. parahaemolyticus* had not been previously isolated in the U.S. A similar situation occurred in Mobile Bay, AL in July, 1991 when a toxigenic strain of *Vibrio cholera* was isolated from oysters and oyster harvest subsequently closed for almost five months (CDC, MMWR, 1993). This same strain of

V. cholera was later isolated in the ballast tanks of ships entering Mobile Bay from Latin American ports (McCarthy, et al., 1992).

For obvious reasons the oyster industry along the Gulf Coast will be carefully monitoring progress toward greater control of ballast water discharge in our coastal waters. We note with great interest the Coast Guard's advance notice of proposed rulemaking entitled "Standards for Living Organisms in Ship's Ballast Water Discharged in U.S. Waters" (Federal Register, March 4, 2002).

Programs which are working to protect and foster a healthy coastal environment in the Gulf and therefore a healthy oyster industry.

National Shellfish Sanitation Program

The National Shellfish Sanitation Program (NSSP) administered by the U.S. Food and Drug Administration, in cooperation with the States, provides stringent guidelines for monitoring the water quality and conducting sanitary surveys around shellfish growing areas. This program, which was started in 1924, has tremendously reduced the incidence of shellfish-borne disease related to polluted growing areas. Thoroughly cooked shellfish are among the safest foods since the NSSP is designed to provide shellfish which are safe for raw consumption.

This program has worked well to prevent shellfish illnesses which may be caused by human sewage contamination. The fact that there are extensive areas of shellfish growing waters that are permanently or temporarily closed to harvesting is actually a testament to the sanitary quality of the growing areas that are open for harvesting.

It is because of this program that Gulf oysters will never have a significant challenge with methyl mercury contamination as is erroneously alleged by extremists in the environmental community. Herbivorous filter feeders such as oysters are less likely to harbor appreciable levels of methyl mercury due to their low trophic level position which largely avoids the effects of bioaccumulation. But more importantly, the NSSP through its State partners provides for careful classification, monitoring and patrol elements which designate and prevent harvest from polluted shellfish growing areas which may be significantly contaminated with methyl mercury.

EPA Gulf of Mexico Program (GOMP)

I have had the pleasure of serving on the Citizens Advisory Committee and on the Public Health Focus Team within this important program. The GOMP has become an invaluable partner to the Gulf oyster industry in the dynamic process of finding means for protecting and enhancing oyster habitat along the Gulf Coast. Significant accomplishments within the Program which have benefited the oyster industry include:

- (1) providing leadership and funding for programs designed to control invasive species introduction through ballast water exchange
- (2) supporting research regarding nutrient loading and hypoxia in the Gulf,
- (3) restoration and enhancement of over 1600 acres of seagrasses and coastal wetlands,
- (4) funding for development and implementation of new technology in on-site sewage treatment for remote areas as well as pump out stations at marinas which foster responsible handling of boat wastes.

NOAA Habitat Restoration Center

Through its Community-Based Restoration Program, the National Oceanic and Atmospheric Administration (NOAA) is catalyzing public-private partnerships at the national and local level to bring about habitat restoration projects that promote environmental stewardship and the conservation of commercially valuable marine resources. NOAA's program focuses not only on the restoration of the habitat but also on the preservation of the cultural traditions of coastal communities which are dependent on a healthy marine environment.

Our company, Bon Secour Fisheries will be collaborating in a habitat restoration project funded through this program. Our partners are Ocean Trust, an environmental organization based in Arlington, VA and the Auburn Marine Research and Extension Center in Mobile, AL. The proposed work will establish a one acre spawner sanctuary for adult oysters in Bon Secour Bay, Alabama. The one acre area will be off limits to harvest and should establish a model for future sanctuaries which may become significant contributors to natural oyster reproduction within the Bay.

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