FLORIDA NSP EXPERIENCE: COMMERCIALLY AND RECREATIONALLY HARVESTED SHELLFISH.

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Neurotoxic shellfish poisoning (NSP) is caused by the consumption of bivalves contaminated with the toxins from *Karenia brevis*. To satisfy the National Shellfish Sanitation Program (NSSP) guidelines, water and shellfish meat samples are collected by Florida Division of Aquaculture for testing. Determination of red tide cell counts and brevetoxin toxicity are completed by Florida Fish and Wildlife Research Institute personnel. A live count method is used to determine the number of *Karenia brevis* cells per liter of seawater. Counts of 5,000 *K. brevis* cells per liter or greater are criteria to close shellfish harvesting areas. A shellfish harvesting area is not reopened until cell counts drop below 5,000 *K. brevis* cells per liter and bioassay tests confirm the shellfish are not toxic. Due to this aggressive monitoring protocol, there have been no cases of NSP reported from commercially purchased shellfish. However, in recent years, there have been cases of NSP reported from recreationally harvested shellfish. In response, a collaborative effort of three Florida agencies identified the area where the toxic shellfish were harvested and an aggressive outreach campaign in the identified county was launched to prevent any further poisonings.

A COMPARATIVE ANALYSIS OF ABALONE HARVEST RECORDS BETWEEN JEJU, KOREA AND CALIFORNIA, USA, USING THE COMMON PROPERTY FRAMEWORK.

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Shellfish stocks are sensitive to collapse, due in part to open-access to these marine living resources. To evaluate the effectiveness of open-access vs. common-property management practices on shellfish stocks, we compared the harvest trends and managerial policies for abalone in Jeju, Korea, and in California (USA), for the period 1960–2009. On Jeju Island, there exists the historically and anthropologically well-established women divers communities (called '*Haenyo*'), who have maintained their village common-property fishing grounds for much of the past 400 years. In contrast, open access to abalone has been a major managerial problem in California, resulting in a 1997 commercial harvesting moratorium, despite having implemented science-based approaches such as size and/or numerical limits, restricted harvest seasons, and modifying harvesting techniques. We found that the common property-based management policies in place on Jeju Island has reduced fishing pressure and decreased the monitoring cost as opposed to the open-access policies in place in pre-1997 California. Based on the experience of the Jeju Island Haenyo, we believe that the new NMFS common property-based management program, known as catch and share being tried for the New England groundfish fishery would be the most applicable for establishing a sustainable commercial harvest of abalone in California.

CLIMATE CHANGE AND THE DELAWARE BAY OYSTER POPULATION: AN EXPLORATORY LOOK.

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Climate change could affect estuaries through a number of interacting mechanisms such as changes in temperature, pH, the timing and/or intensity of rainfall, and sea-level rise. Three of these effects on estuaries with easily retrieved historical records are sea-level rise, river flow and temperature. Effects of other variables are more difficult to document. Because of the natural geomorphology and channel deepening sea level rise will increase the salinity of the Delaware estuary even with expected rainfall increases. In addition, shoreline changes due to inundation may alter circulation patterns. The *Crassostrea virginica* population within the system exists along an environmental gradient based primarily on salinity. This gradient and the temperature also control the oyster diseases dermo, *Perkinsus marinus* and MSX, *Haplosporidium nelsoni*. The interactions between the diseases, salinity and temperature currently control oyster population dynamics, and are expected to continue to do so. We use a 60+ year data base to explore the sensitivity of oyster recruitment and mortality to river flow and temperature. The resulting information highlights the sensitivity of various sectors of the oyster population. When more precise estimates of future condition are available these data could be used to describe change to the oyster population.

ANNUAL, SEASONAL AND SIZE-DEPENDENT PATTERNS OF JUVENILE BLUE CRAB, *CALLINECTES SAPIDUS*, MORTALITY IN UPPER CHESAPEAKE BAY.

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We assessed annual, seasonal and size-dependent patterns of blue crab mortality using long-term (1989–2010) field tethering experiments with juvenile blue crabs conducted during June-August