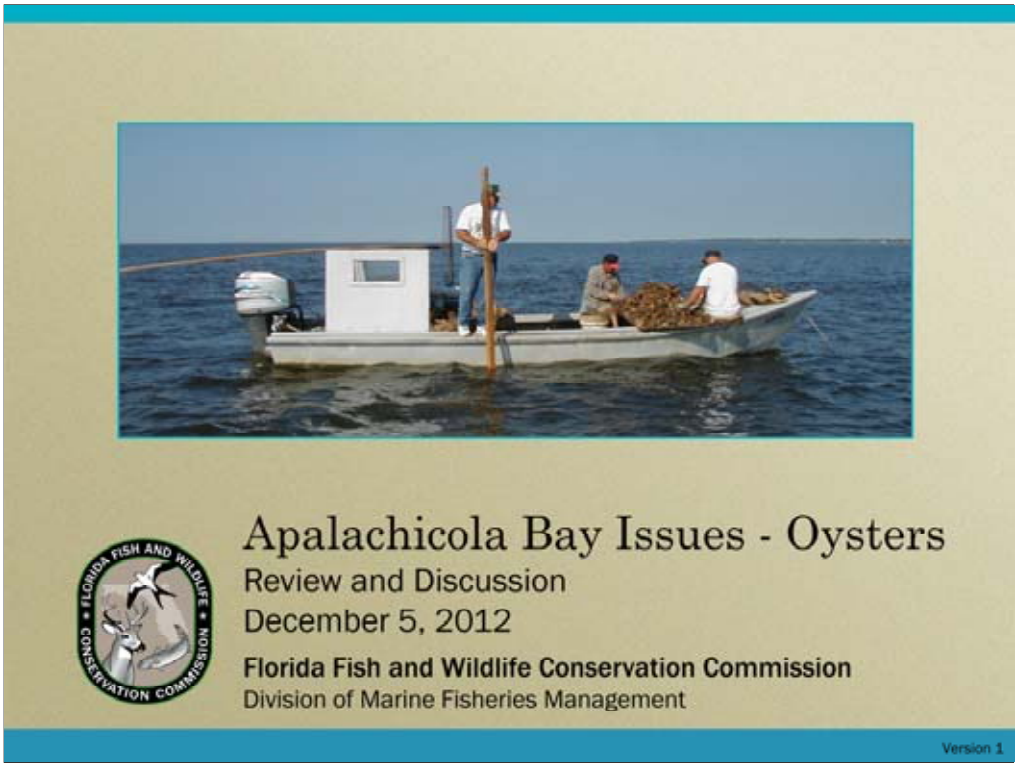


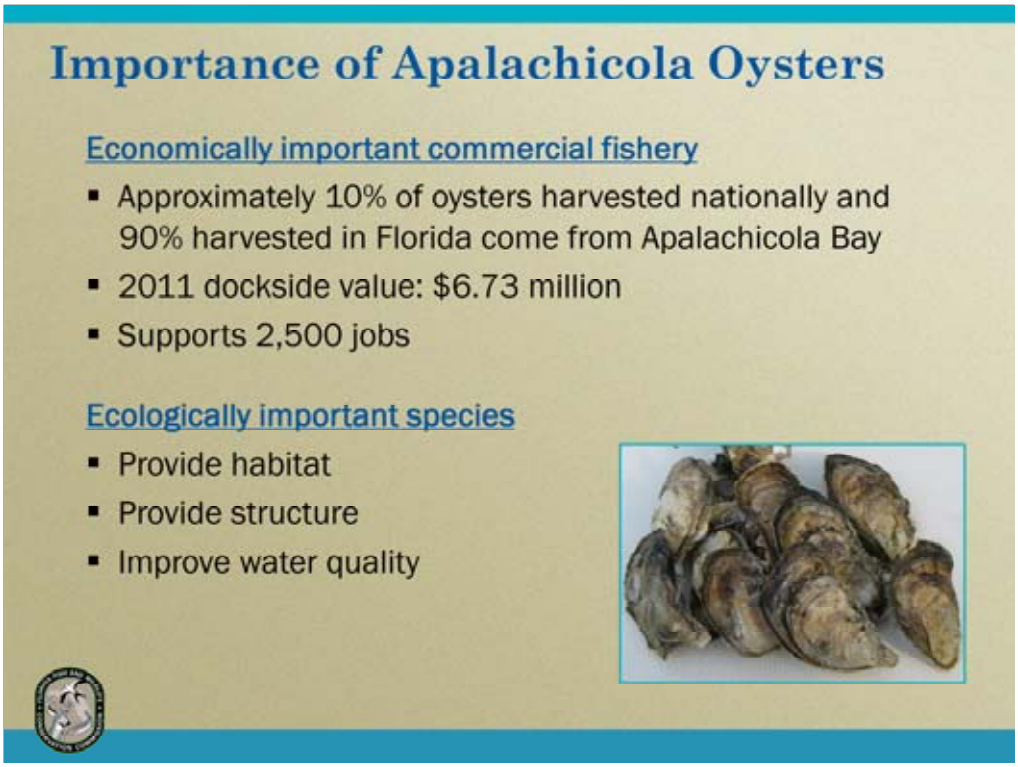
In July 2012, observations and sampling of oyster populations on the winter harvesting reefs in Apalachicola Bay by the Florida Department of Agriculture and Consumer Services (FDACS) indicated that oyster populations were depleted over most of the reef areas sampled and that surviving oyster populations were severely stressed. The purpose of this report is to provide an overview of the Apalachicola Basin and the importance of Apalachicola Bay oysters, review oyster management and the findings of the FDACS monitoring report, and explain how the issue is impacting other counties along Florida's northern gulf coast. This presentation will be updated before the December Apalachicola Commission meeting with an overview of upcoming projects that will aid the Apalachicola oyster industry and begin the restoration of oyster populations within the Bay.

Authors: Michelle Sempsrott, Mason Smith, David Heil, and Jim Estes

Report date: October 22, 2012

The Apalachicola River is part of a three-river system: the Apalachicola, Chattahoochee and Flint rivers (also known as the ACF Basin) which originates as far north as Atlanta and the Georgia portion of the Appalachian Mountains. The interstate basin is one of the most biodiverse, productive, and economically important aquatic regions of the United States.

Along the Chattahoochee River that flows through Georgia, there are four dams that greatly affect the flow of the entire river system down to the Apalachicola Bay system. The largest dam is the Buford Dam which forms Lake Lanier located north of Atlanta. Lake Lanier accounts for over 60 percent of the water storage in the ACF Basin; therefore, the amount of freshwater released out of the reservoir affects Florida's fisheries in the Apalachicola Bay system.



The Apalachicola River and Bay support a substantial seafood harvest. Apalachicola oysters are both an economically and a biologically important species. Approximately 10% of oysters harvested nationally and 90% of oysters harvested in Florida come from the Apalachicola Bay system. The dockside value of Apalachicola Bay oysters in 2011 was $6.73 million. The oyster industry also supports roughly 2,500 jobs.

Oysters are ecologically important in that they provide habitat for animals like barnacles and mussels; they provide refuge for animals like shrimp, small fishes, and larval blue crabs; and they provide nursery habitat for species like flounder, black sea bass, and Atlantic spadefish. Some species of fish such as oyster toadfish, gobies, and blennies attach their eggs to oyster shells. Many of Florida's prized fisheries such as red drum, spotted seatrout, and sheepshead use oyster reefs to prey on the wide variety of food that the reefs provide, generating a complex food web.

Oysters build structure on otherwise soft sediments which would bury other stationary organisms, resulting in a vital micro-environment within Florida's important bay systems.

Oysters consume algae by filtering water at a rate of about two gallons per hour. In abundance, oysters help clarify the water, which allows seagrass to receive more sunlight. Plentiful seagrass increase oxygen levels, reduce wave energy and shoreline loss, and provide quality habitat for aquatic life.

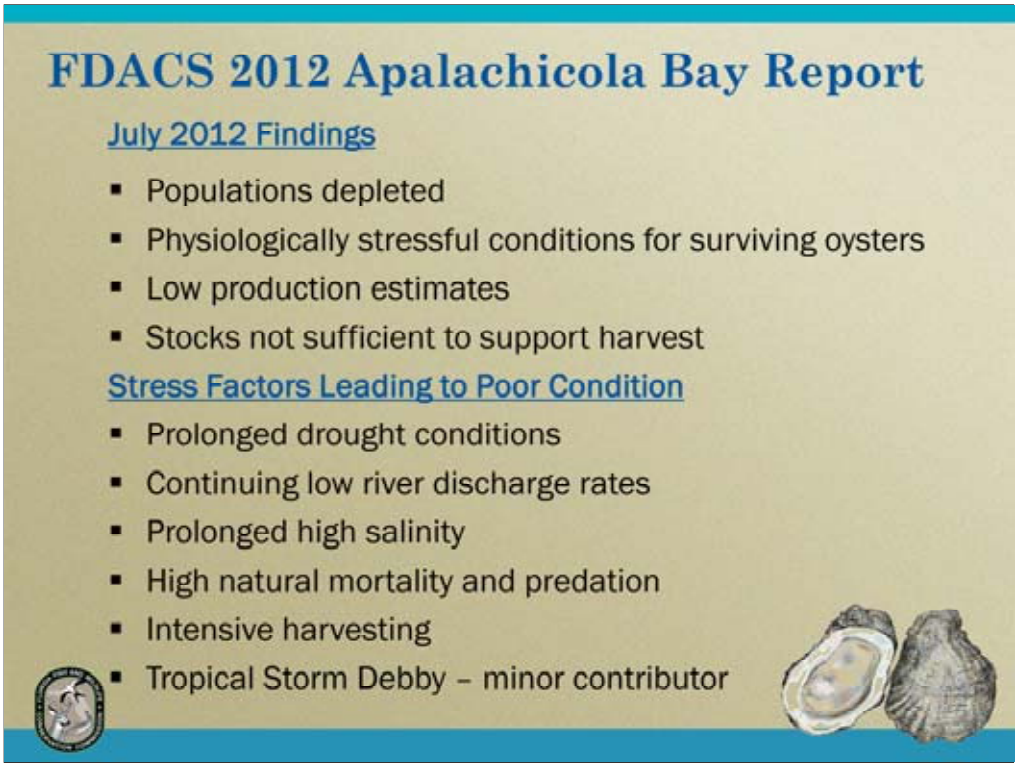
Management of oysters in Florida is shared by the Florida Fish and Wildlife Conservation Commission (FWC) and the Florida Department of Agriculture and Consumer Services (FDACS).

FWC is responsible for issuing commercial fishing licenses and establishing seasons, harvest limits (i.e. quotas and bag/possession limits), gear restrictions and closed areas. They also provide law enforcement to enforce oyster harvesting regulations.

FDACS is responsible for monitoring oyster populations and water quality for the harvest of shellfish to determine area closures based on oyster density and human health concerns. FDACS also licenses and inspects processing plants and monitors the product to ensure safe handling practices are being used. FDACS also issues the Apalachicola Bay Oyster Harvesting License which is required for commercial harvest of oysters in the Apalachicola Bay System.

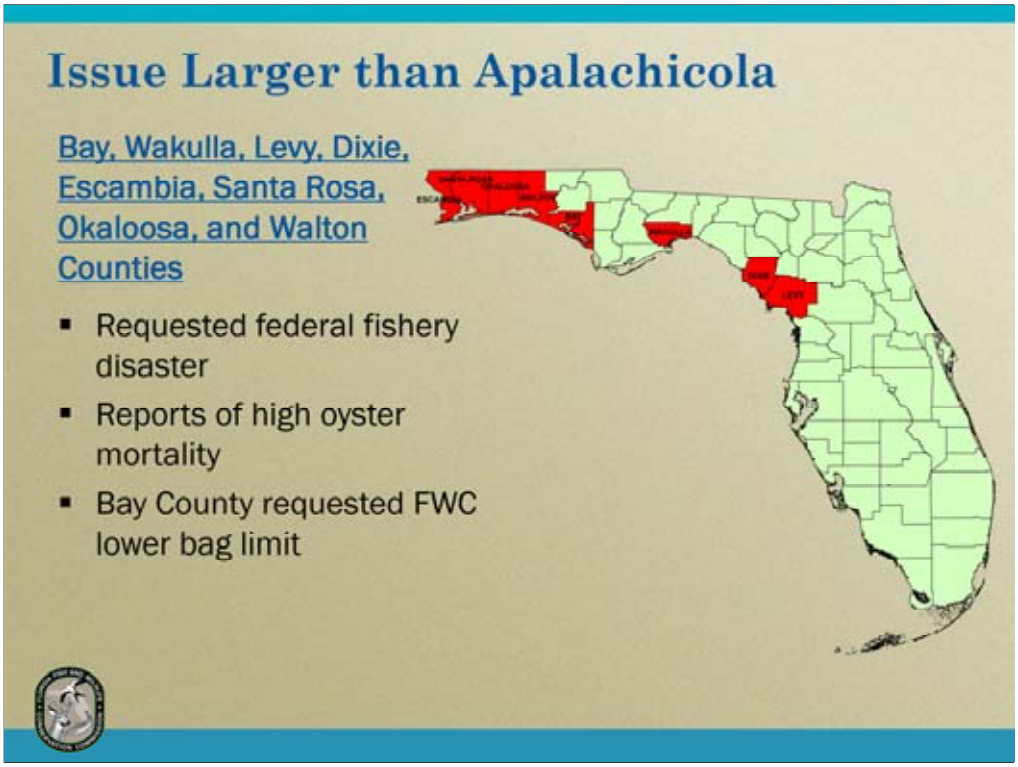
FDACS restores oyster reefs annually by depositing processed oyster shells on public oyster reefs as part of an ongoing oyster resource development program. The oyster culture program is assisted by laws which mandate that FDACS improve, enlarge, and protect public oyster reefs.

FDACS promotes the development of aquaculture by administering and managing the shellfish and aquaculture leasing programs. They are responsible for making sovereign submerged state lands and the overlying water column available for producing aquaculture products. There are currently 79 shellfish leases containing 1,285 acres and more than 600 aquaculture leases containing about 1,450 acres.



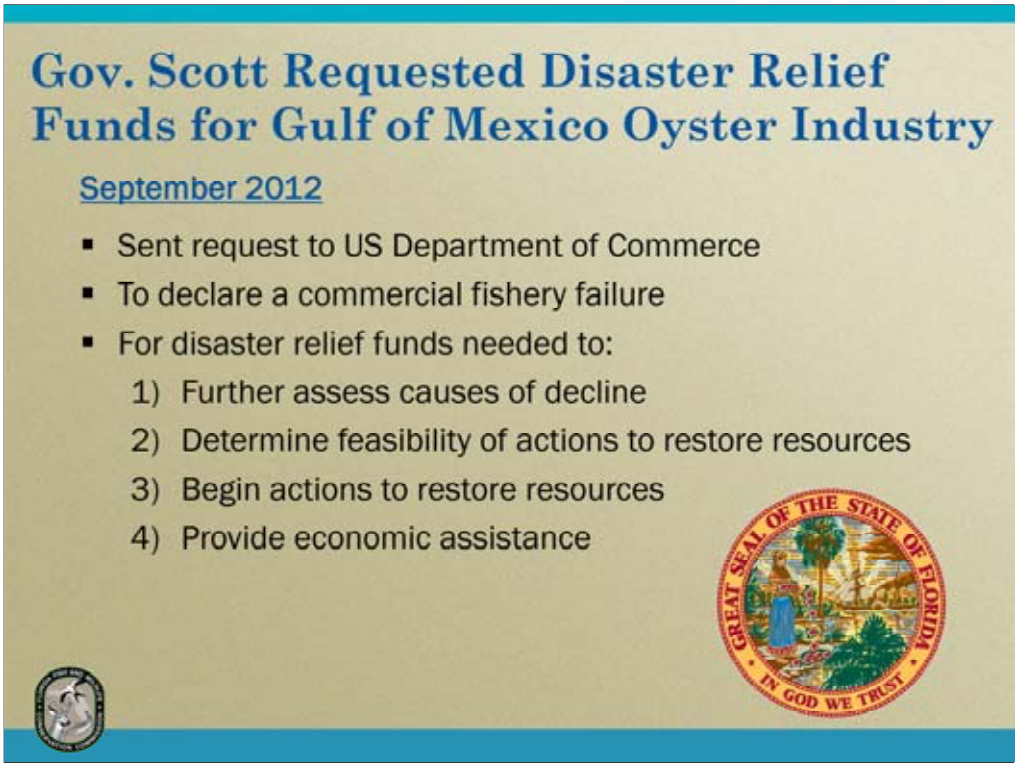
FDACS Division of Aquaculture has conducted annual oyster resource surveys on the principle oyster-producing reefs in Apalachicola Bay since 1982. The information is used to predict trends in oyster production and determine if the oyster reefs are capable of sustaining commercial harvest. Surveys were conducted on the commercially important oyster reefs in Apalachicola Bay during July 2012 including Cat Point Bar, East Hole Bar, and the St. Vincent Bar and Dry Bar reef complex. Surveys were also conducted on three recently rehabilitated reefs and on shallow and intertidal reefs in St. Vincent Sound. Findings indicated that oyster populations were depleted over most of the reef areas sampled and that surviving oyster populations were living under physiologically stressful conditions due to high salinity. Production estimates from Cat Point Bar and East Hole Bar were the lowest reported prior to the opening of the winter harvesting season in the past twenty years. Similarly, estimates from St. Vincent Bar and Dry Bar demonstrated depressed production estimates. With such low numbers being reported during the surveys, the assessment suggested that stocks were not sufficiently abundant at that time to support commercial harvesting throughout the winter harvesting Season.

Stress factors leading to the poor condition of oyster reefs in Apalachicola Bay included prolonged drought conditions and continuing low river discharge rates, which in turn lead to higher salinities in the Bay. Prolonged high salinity causes physiological stress on the oysters and allows for increased predation and Dermo disease (dermo disease is caused by a protozoan that proliferates rapidly in higher salinities and can cause extensive mortalities amongst the oyster population). Intensive fishing effort on stressed oyster populations has also been identified as a contributing factor to the markedly reduced standing stocks of juvenile, sub adult and adult oysters. Preliminary reconnaissance following the passage of Tropical Storm Debby indicated that oyster populations on Cat Point Bar and East Hole Bar were in poor condition. After further analyses and observations it was determined that Tropical Storm Debby was only a minor contributing factor to the overall poor condition of the oyster resources.

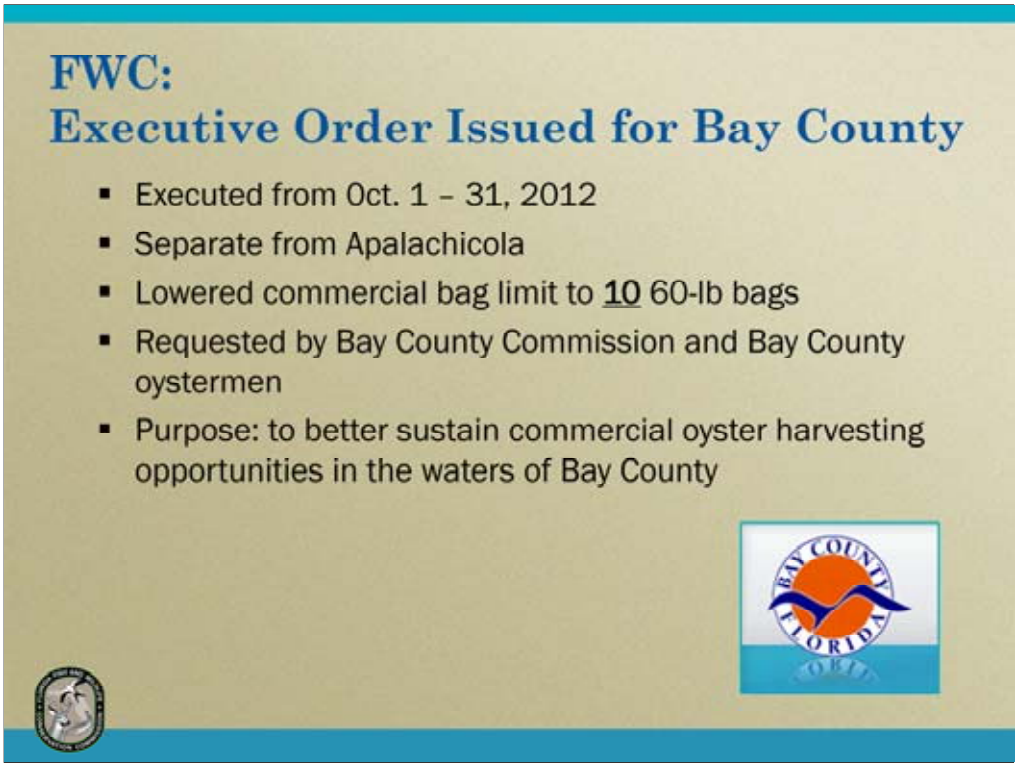


The issue at hand is not contained to the Apalachicola Bay system. Bay County Commissioners and the Commissioner of Agriculture, Adam Putnam, requested that Governor Scott ask the United States Department of Commerce to declare a federal fishery disaster for Florida's oyster harvesting areas in the Gulf. Bay, Wakulla, Levy, Dixie, Escambia, Santa Rosa, Okaloosa, and Walton counties have been reporting high mortality rates for oysters in their bays. Several years of drought combined with the increased freshwater flows in Wakulla, Dixie, and Levy counties this year have severely stressed oyster populations in these counties. Bay County also requested FWC lower the bag limit for oysters in their county.

Several agencies are working to help the oysters recover in Apalachicola Bay and aid the oystermen during this difficult economic time. This presentation will be updated as more information on these efforts becomes available.



In September 2012, Governor Scott requested disaster relief funds from the US Department of Commerce authorized by the Magnuson-Stevens Act needed to 1) further assess the primary and secondary causes of the oyster decline; 2) determine the feasibility of actions to remediate or restore the affected resources; 3) begin actions to prevent and restore affected resources; and 4) provide economic assistance to fishing communities and small businesses, including oyster fishermen affected by the disaster. In the request the Governor declared a commercial fishery failure due to a fishery resource disaster for Florida's oyster harvesting areas in the Gulf of Mexico, particularly those in Apalachicola Bay.



FWC issued an Executive Order for Bay County for October 1 – 31, 2012, lowering the bag limit for commercial oystermen from twenty to ten 60-pound bags per person or vessel, whichever was less. This change was requested by the Bay County Commission and Bay County oystermen to better sustain commercial oyster harvesting opportunities in the waters of Bay County.

FWC's oyster rule, 68B-27.017 Florida Administrative Code (F.A.C.), establishes that if FDACS determines through its regular monitoring of the abundance of oyster resources on Cat Point Bar and East Hole Bar in Apalachicola Bay that such resources cannot sustain a harvest of 300 bags of oysters per acre, the harvest of oysters for commercial purposes from the bay on Saturday and Sunday of each week for the remainder of the period is prohibited. Therefore, based on FDACS's August 2012 report, the Commission is required to close weekend harvest for the 2012/2013 harvest season on these winter harvesting reefs for the season that runs November 16, 2012 through May 31, 2013.

68B-27.017(1)(b) If during the period beginning on November 16 each year and continuing through May 31 of the following year the Department's Shellfish Assessment and Enhancement Section, through its regular monitoring of the abundance of oyster resources on Cat Point Bar and East Hole Bar in the bay, through the Standard Resource Management Protocol (a scale based on scientific sampling that provides a predictive index of the number of oysters available for harvest), establishes that such resources cannot sustain a harvest of 300 bags of oysters per acre, the harvest of oysters for commercial purposes from the bay on Saturday and Sunday of each week for the remainder of the period is prohibited. The Commission shall give notice of such weekend closure in the manner provided in Section 120.81(5), F.S. The weekend closure shall begin no sooner than one week following such notice.

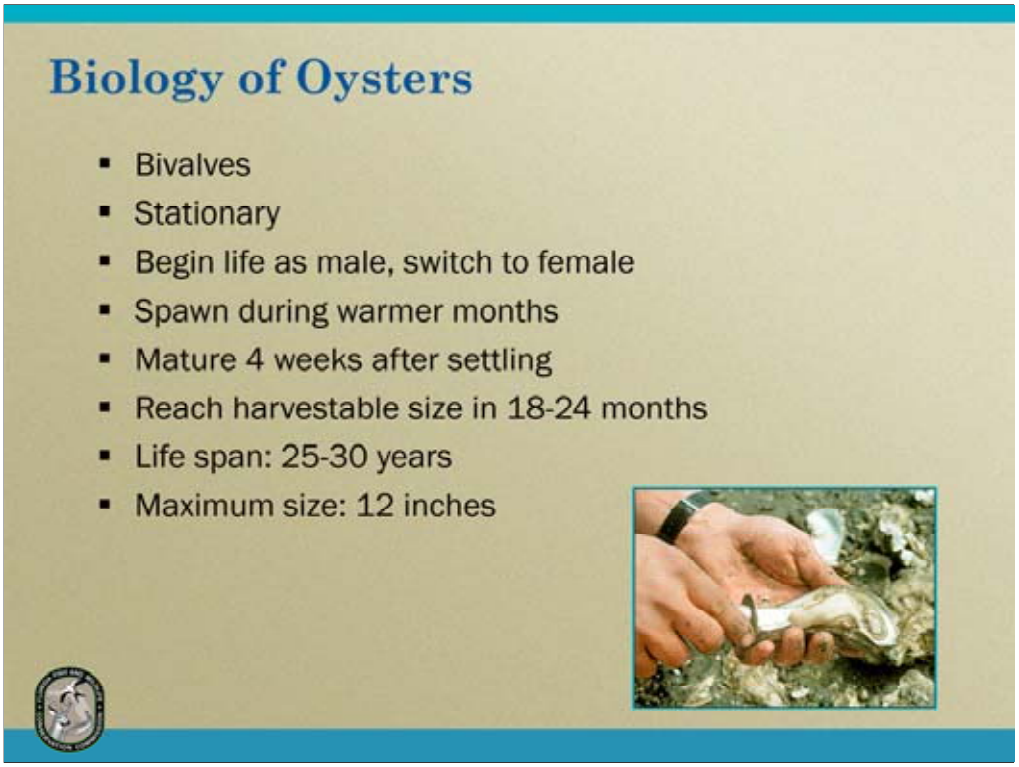
The Notice was published on _____.

Currently there are projects in the works to aid in the recovery of Apalachicola Bay's oyster population and also aid the oystermen during this difficult economic time.

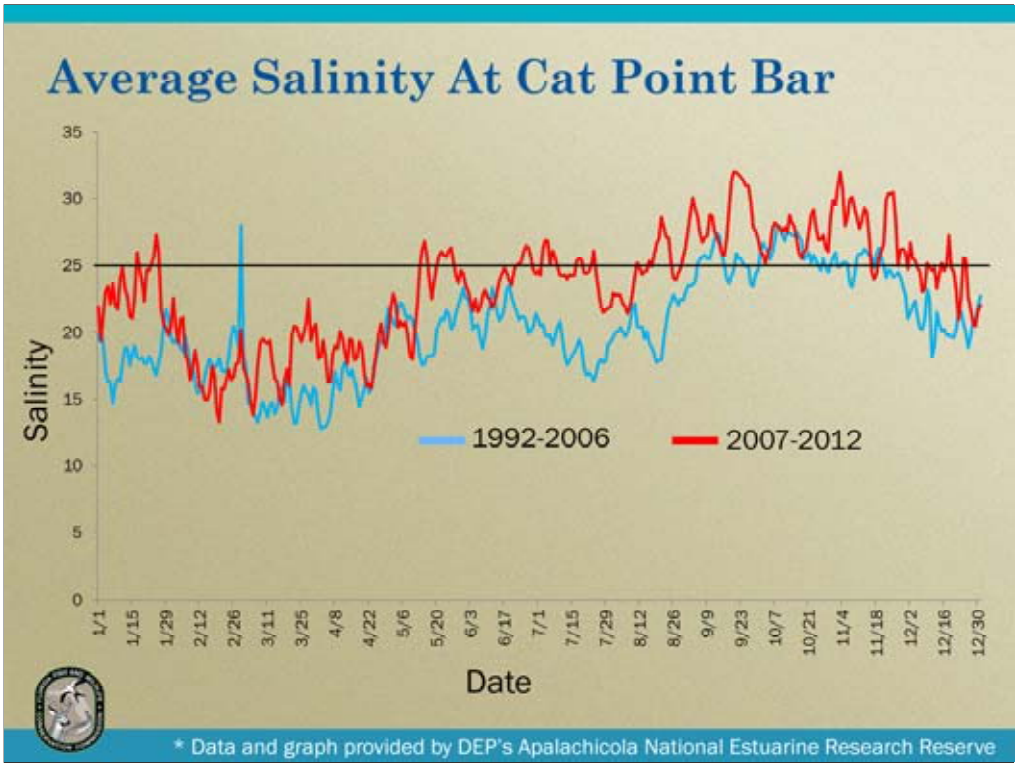
Examples of projects in the works and who is working on them is provided below:

- Continued monitoring of Gulf oyster reefs – FDACS, University of Florida Sea Grant (UF), and FWC
- Relaying of oysters in Apalachicola Bay from unapproved reefs to the winter harvesting reefs (reefs must remain closed for 21 days to allow oysters to cleanse themselves) – Regional Workforce Board (Workforce), Franklin County, FDACS, and FWC
- Shelling (place oyster shell on reefs to enhance substrate which aids in the reefs recovery) – Workforce, FDACS, and Franklin County
- Oyster Recovery Team (determine cause(s) for the oyster decline in Apalachicola Bay and possibly other areas, and develop potential strategies for short- and long-term recovery of the oyster resource) – UF, FWC, FDACS, DEP, Workforce, and Franklin County
- Job training for displaced oystermen to help them obtain jobs within the community – Workforce and Franklin County
- Bay Management Plan – Franklin County, DEP, FWC, FDACS, and Governor's Office

The following slides are considered back up material and are not anticipated to be part of the actual presentation to the Commission



Oysters are bivalves meaning they have two shells connected by a hinge. They begin life as free-swimming larvae and then attach to a hard substrate where they remain the rest of their lives. Most oysters mature as males and typically change to females later in life (protandric hermaphrodites). There is evidence suggesting that the process is reversible and oysters may change sex annually between spawning seasons in response to environmental, nutritional, and/or physiological stresses. Other studies suggest that sex determination may be influenced by the sex and proximity of nearby oysters. The factors determining sex are varied and complex. Oysters spawn during the warmer months when waters are at or above 68 degrees. Oysters mature in as little as four weeks after settling. They undergo rapid growth during the first six months of life and reach harvestable size within 18 to 24 months. In the Gulf of Mexico, they have been found to live 25-30 years and reach about 12 inches in size. The larger, older individuals are usually associated with undisturbed bottoms where commercial fishing is prohibited.



This graphic represents average salinity throughout the year at Cat Point Bar in Apalachicola Bay for two time periods. (Cat Point Bar is one of the most productive bars in the bay, but is almost depleted of oysters now.) The blue line represents the average salinity for the time period from 1992 through 2006 prior to implementation of the Revised Interim Operations Plan (RIOP) and the red line represents the average salinity for the time period from 2007 through August 1, 2012, post implementation of the RIOP. The RIOP defines the water management operations established by the Army Corps of Engineers (Corps), as a result of Endangered Species consultation with the US Fish and Wildlife Service (USFWS)*. The RIOP describes the release schedule from Jim Woodruff Dam to the Apalachicola River. Certain drought provisions require temporary deviation from the existing water control plan to provide for only minimum releases of 5,000 cubic feet per second (cfs) from Jim Woodruff Dam when specific triggers are met (i.e. upstream reservoirs are below a specified minimum level (Zone 4)). Minimum flows are effective until upstream reservoir (i.e. all Federal Reservoirs) storage levels return to high pool levels (Zone 1). Oysters become physiologically stressed when salinities are above 25 parts per thousand (ppt), depicted by the black line in the graph, for extended periods of time. The average salinity for the past five years post implementation of the RIOP has been higher throughout the year than it had been for the prior 15 years (pre implementation of the RIOP), and the average salinity from 2007-August 1, 2012, has sustained levels higher than 25 ppt throughout the majority of the year.

*The consultation was for the Gulf Sturgeon, Fat Threeridge mussel, Purple Bankclimber mussel, and the Chipola Slabshell mussel.

NOTE: The RIOP is what the Corps proposed and not what the USFWS believes is needed for the recovery of the species. The USFWS only determined that the Corps proposal would not cause "jeopardy" to the species and they issued a "take" statement.