• by interactions between river flow, nutrients, salinity, harvesting intensity and restoration methods.
• There is a need to assess the harvesting practices of the oystermen and how they respond to changes in oyster abundance.
• The ECOSPACE model has additional functionality to identify effects of varying flow regimes and to screen flow alternatives, relative to Apalachicola Bay oyster population dynamics and harvest potential when the model is linked with the Apalachicola Basin River Model currently being used by the Apalachicola-Chattahoochee-Flint River Stakeholders Group.

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The Future
The situation in Apalachicola Bay, as outlined in the pages of this report, highlights a series of interwoven ecologic, fisheries, and community concerns. The bay is a national treasure, and its demise would sever critical links among our modern society, nature and our heritage. Work to date is a starting point toward understanding the processes underlying the current crisis, and includes steps that can and should be taken in initial efforts to restore the bay. However, if we are truly committed to bringing the bay back to a point even close to its former productivity, a great deal of work is still required. These studies and analyses were conducted on a shoestring budget with internal funds from UF/IFAS, and limited support from Florida Sea Grant and from the National Institute of Environmental Health Sciences. If we are truly committed to the restoration of the bay, we can’t stop here. There is a critical need for follow-up work, bringing together state and federal agencies, academic researchers, and the community, to look out over a 5-, 10-, and 20-year time scale, to conduct interventions, do the necessary research, and monitor outcomes. This will require a strong leadership structure and it will cost money. The question remains as to whether we, as a society, are willing to make this investment of time, and money, to preserve this priceless natural resource for our lifetime, and the lifetimes of our children.
Apalachicola Bay
Oyster Situation Report
APRIL 24, 2013

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EXECUTIVE SUMMARY

This report summarizes efforts conducted through
the University of Florida Oyster Recovery Team, in
collaboration with various stakeholders, to describe
conditions in Apalachicola Bay prior to and after a historic
collapse of the oyster fishery. The report characterizes
conditions in the bay, reviews possible causes for the
fishery collapse, and outlines a plan for future monitoring,
research and fishery management. Conclusions in this
report are based on analyses of data collected in historical
monitoring programs conducted by the Florida Fish and
Wildlife Conservation Commission, Florida Department
of Agriculture and Consumer Services, Apalachicola
National Estuarine Research Reserve (Florida DEP) and
Northwest Florida Water Management District, as well as
field, experimental, and community data collected by
the authors, who are reporting in their capacity as members of
the UF Oyster Recovery Team.

Findings

- Apalachicola River discharge levels are strongly
  influenced by rainfall over the Apalachicola-
  Chattahoochee-Flint River Basin. The lower part
  of this basin was frequently classified by the National
  Integrated Drought Information System as in an
  "exceptional drought" during the last three years.

- Water quality data indicate that 2012 was a year of high
  salinity at all monitoring stations in the bay likely caused
  by low river flows and limited local rainfall in most
  months.

- A large decline in oyster landings was reported after
  August 2012 in the bay, and the number of reported
  oyster harvesting trips also dropped off each month
  during the second half of that year.

- The 2012 decline in oyster landings and recruitment of
  juvenile oysters is unprecedented during the period of
  data analyzed and has likely involved recruitment failure
  or high mortality of small oysters.

- Fisheries independent monitoring data, collected by
  state agencies, indicates a general downward trend in
  abundance of legal-sized (3 inch or larger) oysters in
  the bay in recent years and a large decline in sub-legal
  (smaller than 3 inches) oysters present in 2012.

- Because of the low abundance of sub-legal oysters in
  2012 there is a high likelihood that legal-sized oysters will
  be in low abundance in 2013 and likely in 2014 as well.

- The current size limit of 3 inches appears to be effective
  at reducing the risk of "growth overfishing" where
  yield (pounds of meat harvested) is reduced because

This is an executive summary of TP-200, Apalachicola Bay Oyster Situation
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- A large decline in oyster landings was reported after August 2012 in the bay, and the number of reported oyster harvesting trips also dropped off each month during the second half of that year.
- The 2012 decline in oyster landings and recruitment of juvenile oysters is unprecedented during the period of data analyzed and has likely involved recruitment failure or high mortality of small oysters.
- Fisheries independent monitoring data, collected by state agencies, indicates a general downward trend in abundance of legal-sized (3 inch or larger) oysters in the bay in recent years and a large decline in sub-legals (smaller than 3 inches) oysters present in 2012.
- Because of the low abundance of sub-legals in 2012 there is a high likelihood that legal-sized oysters will be in low abundance in 2013 and likely in 2014 as well.
- The current size limit of 3 inches appears to be effective at reducing the risk of “growth overfishing” where yield (pounds of meat harvested) is reduced because oysters are harvested at too small a size. However, it is essential that this size limit be accepted by the community, adopted by the industry, and enforced by regulatory agencies and the county judicial system.
- Substantial future harvesting of sub-legals could have negative effects not only on oyster populations but also a serious impact on the national reputation of Apalachicola oysters as a high-quality seafood product.
- Oysters, white shrimp, brown shrimp, blue crab and multiple finfish species have been analyzed for the presence of oil residue. All samples were either below the limits of detection or below quantifiable limits. Thus, based on analyses conducted so far, there is no evidence of chemical contamination from the Deepwater Horizon oil spill in the seafood sampled from Apalachicola Bay.
- A large percentage of oysters in the bay have some degree of shell parasitism by clams, polychaete worms, sponges or other organisms. This parasitism negatively affects the integrity and aesthetics of the oyster shell, the overall growth and productivity of the oysters, and the marketability and price of product for the half-shell market. There are no historic data to compare the degree of shell parasitism observed in 2012-2013.

Recommendations

Monitoring

- There is a need to continue the monitoring of oysters in Apalachicola Bay in terms of tracking landings reported by oystermen, and in the sampling done by state agencies. The fisheries independent monitoring program needs to be expanded in its spatial extent to include all of the bay where oyster bars occur, including areas that are closed to fishing, because these may be exceptional sources of oyster spat.
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Research

- Research is needed to identify an optimal approach for monitoring long-term management, juvenile and adult survival, productivity, health, mortality, oyster diseases, and product quality of oysters. Subsequently this information could be used to inform changes in the oyster monitoring program.
- Research is needed to quantify how oyster population dynamics, product quality and the fishery are affected...
by interactions between river flow, nutrients, salinity, harvesting intensity and restoration methods.

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