



Citizen Monitoring Program in Northwest Florida and South Alabama

**THE BREAM FISHERMEN ASSOCIATION**





# What is the BFA?

- Loosely organized in the mid 1960s by local fishermen who were concerned about the deterioration of regional water quality conditions, the BFA was officially chartered as a non-profit organization in January 1970.
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# What was Happening in 1970?

- That was the same year that the United States Environmental Protection Agency was created as an outgrowth of the burgeoning environmental movement. The EPA opened its doors for business on December 2, 1970, less than eight months after the first Earth Day celebration, and 11 months after the BFA was established.



# BFA offers Community Support

- The BFA is a well-known and highly respected organization which has assisted the city, county, state, and region as environmental stewards in protecting our northwest Florida and south Alabama waters for over 40 years.
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## Nichol's Creek on the Yellow River

- In 1972, BFA fishermen caught two yellow bullhead catfish which had tumor-like lesions on their heads and flanks.
- So unusual were these lesions, the fish were sent to the Smithsonian Institute for cataloging in the Registry for Tumors.
- The tumors were interesting enough to warrant a visit from several scientists at the Smithsonian Institute and the Washington office of the EPA to attempt to collect more specimens.
- Over the next few years, 200 additional specimens were collected and studied.

# Publication

- The study's findings were captured in a scientific publication:
- Couch, J.A. and J.C. Harshbarger. 1985. Effects of carcinogenic agents on aquatic animals: An environmental and experimental overview. Journal of Environmental Science and Health. Part C: Environmental Carcinogenesis Reviews. Vol 3, Issue 1.pp 63-105) which linked the lesions found on the fish to environmental contaminants in the water.



## Continuing Problems in the Bays & Bayous

- FDEP has a Northwest District Office in Pensacola today is a direct result of the numerous trips the BFA Executive Board made to the state's capital, Tallahassee, in the early 1970s.
  - That was the time when fish kills were measured in acres and miles. At the persistence and urging of the BFA, not only was the Dept of Pollution Control established 1974, the state hired its first pollution biologist, and the facility housed a state-of-the-art chemistry laboratory outfitted with the State Board of Health chemists and field biologists.
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Fish Kills were Measured in the Acres or Miles





## Northwest Florida was getting National Attention

- Claude Kirk, the first Republican Governor of Florida (1966-1971)
- Reubin Askew, grew up in Pensacola, saw first hand the problems occurring in the area. Became Governor in 1971 and served 2 terms, through 1979
  - Dept of Pollution Control, 1970s
  - Water Management Districts, 1972
  - Dept of Air and Water Pollution, 1974
  - Dept of Environmental Regulation, 1976\*
  - Dept of Natural Resources, 1976\*
  - Dept of Environmental Protection 1993



# Water Quality Sampling Program

Expanding on their early efforts, the BFA Board and members developed a scientific program of water quality sampling.



The members of the BFA understood the importance of scientific methodology in water sampling and the need for quality data and proper collection techniques, so data could be used to identify trends.



BFA Members and State Biologists met  
Frequently to discuss data and trends  
that were observed in the field

In the 1970s and 80s, the BFA expanded their  
water sampling program to include 93  
quarterly stations; each site was revisited  
every three months; and each BFA-obtained  
sample was measured for *18 parameters*.





## BFA Assisted the State with Source Identification of many Pollutants and Environmental Issues.

- Through these efforts, the BFA identified a problem in Brushy Creek. Brushy Creek in Escambia County, FL.
  - This was a routine water quarterly sampling station within the BFA/FDEP Ambient Water Quality Monitoring Program.
  - Data collected in 1979 revealed high bacterial loads, which focused efforts on the creek and the source of these loads.
  - Further investigation identified the source as a sewage wastewater treatment plant which serviced the City of Atmore, AL, and the surrounding area.
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# Other BFA Projects

- BFA recognized that there was little biological data, most effort was placed on water chemistry;
  - In 1970, the BFA partnered with UWF to conduct a comprehensive creel study in the lower Escambia River to determine the sports fishery yield;
  - In 1975, BFA Members conducted a three year study in which submerged aquatic grasses were replanted and monitored in areas which once had historic seagrass meadows in Pensacola Bay; and
  - In 1985, the BFA compiled an Environmental Bibliography for Northwest Florida from 1900 to 1985.
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# Legacy Chemicals and the BFA

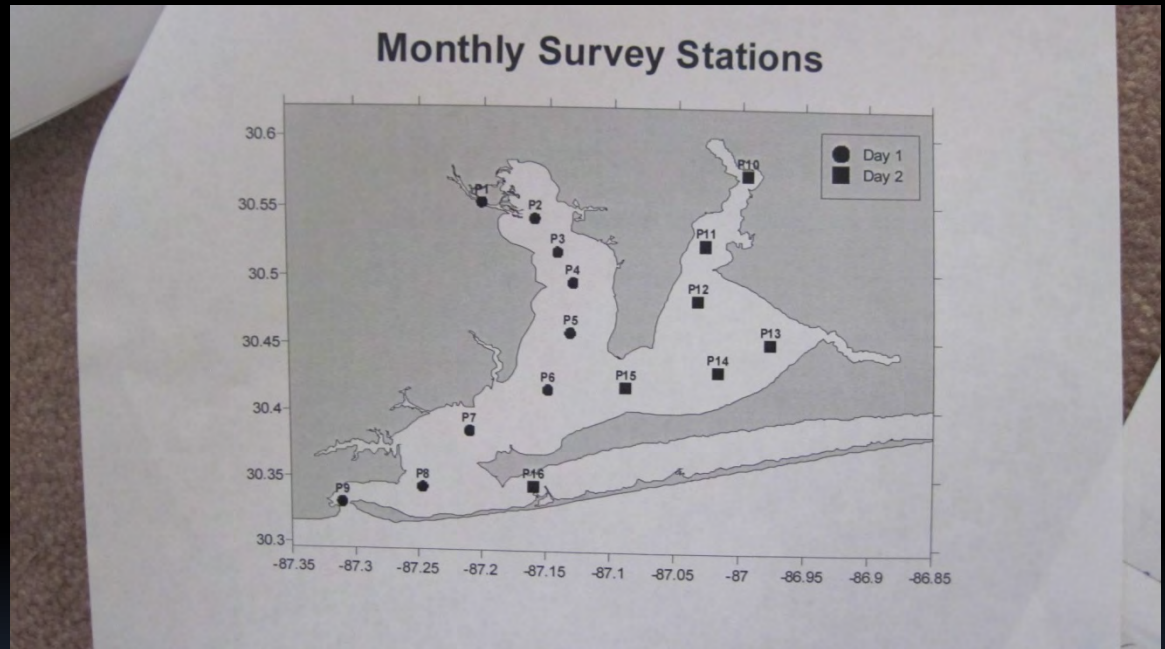
- BFA Members were interested in the lack of productivity of their beloved bays, as a result they started to monitor the oysters.
  - The BFA was stunned when oysters in Escambia Bay died by East Bay oysters thrived.
  - At the same time, USEPA Scientists were collecting water samples near the newly built I-10 Escambia Bay Bridge and detected high levels of PCBs...
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# Legacy Contaminants

- Eventually, the source of the PCBs was identified as the Monsanto Plant.
  - Today, some 40+ years later, Escambia County is conducting a multi-year study to identify which areas in the bay contain the highest concentrations of these contaminants.
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# Who is Monitoring our Bays?

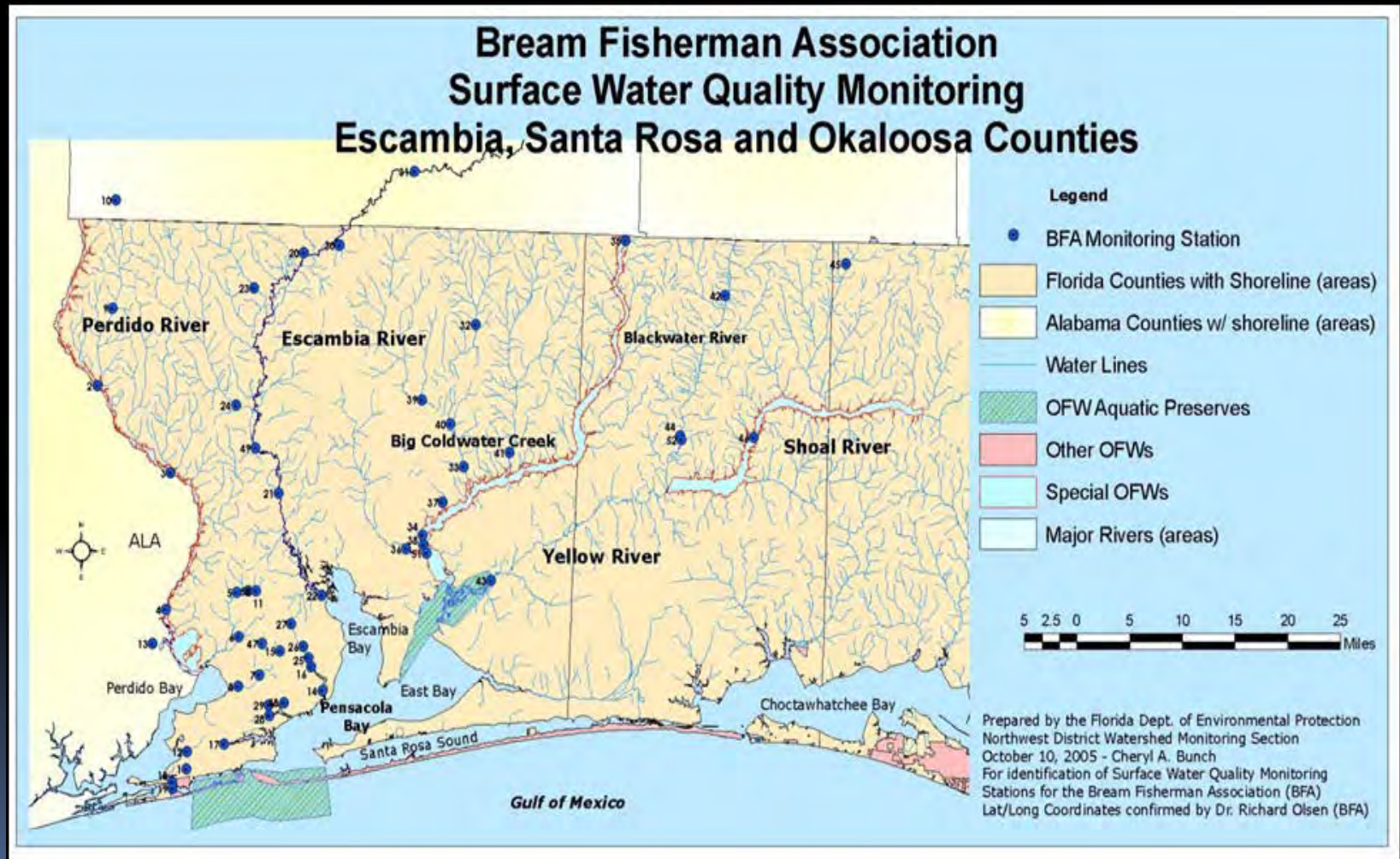




# BFA Monitoring in Pensacola Bay

- In 1979, the BFA developed a monitoring plan for the Pensacola Bay System (50 Stations) in which they monitored the following for 3 years:
  - Depth – surface & bottom
  - Temperature
  - Salinity
  - Dissolved Oxygen
- Their findings resulted in a low DO trend on the bottom - anoxic conditions appeared in deeper waters.

# Today, BFA Monitors 48 Stations Quarterly



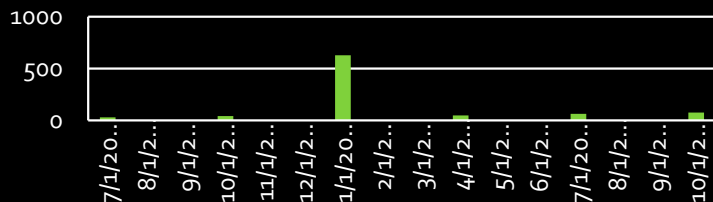


# On-going BFA Water Quality Monitoring Program

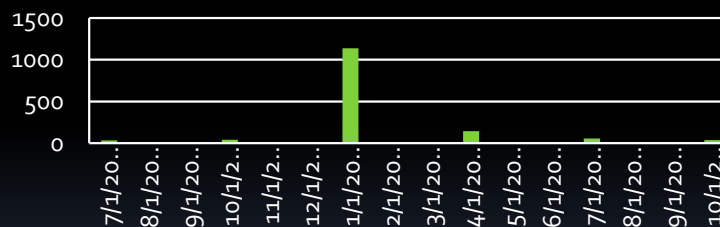
- The BFA is monitoring inland waters:
    - ▣ Water Quality - 48 Stations visited Quarterly
      - FDEP is currently analyzing Ammonia-N, Kjeldahl Nitrogen, Nitrite-Nitrate, Total Phosphorous, and Total Organic Carbon;
      - The BFA Volunteers collect water depth, temp, pH, DO, salinity, conductivity (with FDEP maintained YSI Data Sonde), and transparency with a Secchi Disc at each station.
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# Who Looks at the Data?

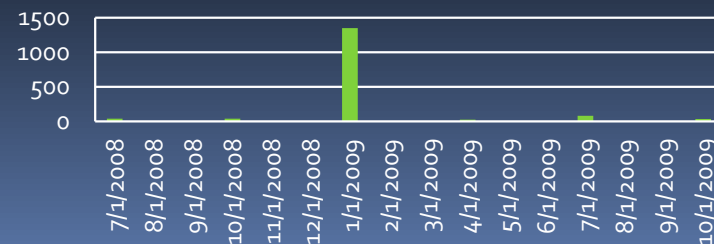
North Big Cold Water -  
Enterococcus



Mid Big Cold Water Creek -  
Enterococcus



Lower Big Cold Water Creek  
- Enterococcus





# Depends on the Circumstances

- BFA helped to get industrial pollutants out of the bays;
  - The biggest current threats to our surface waters come from stormwater runoff, sedimentation, and habitat alteration.
  - These three areas of anthropogenic impacts combine to create a chemical/physical condition that cannot recover as long as the insult continues.
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# Why aren't we Monitoring more Today?

- Economic downturn;
  - Funding cuts across the board;
  - Oversight agencies may not want to know the current conditions; and
  - Overall lack of public interest.
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# May 2012 – Pensacola Bay





# October 2012 – East Bay







# Why should we be Monitoring our Bays?

- Current condition of our SAV meadows;
  - How do SAVs relate to our fisheries?
  - Sedimentation loads coming down our rivers;
  - What's happening upstream?
  - What is happening along the shorelines?
  - Oyster recruitment to our new restoration projects?
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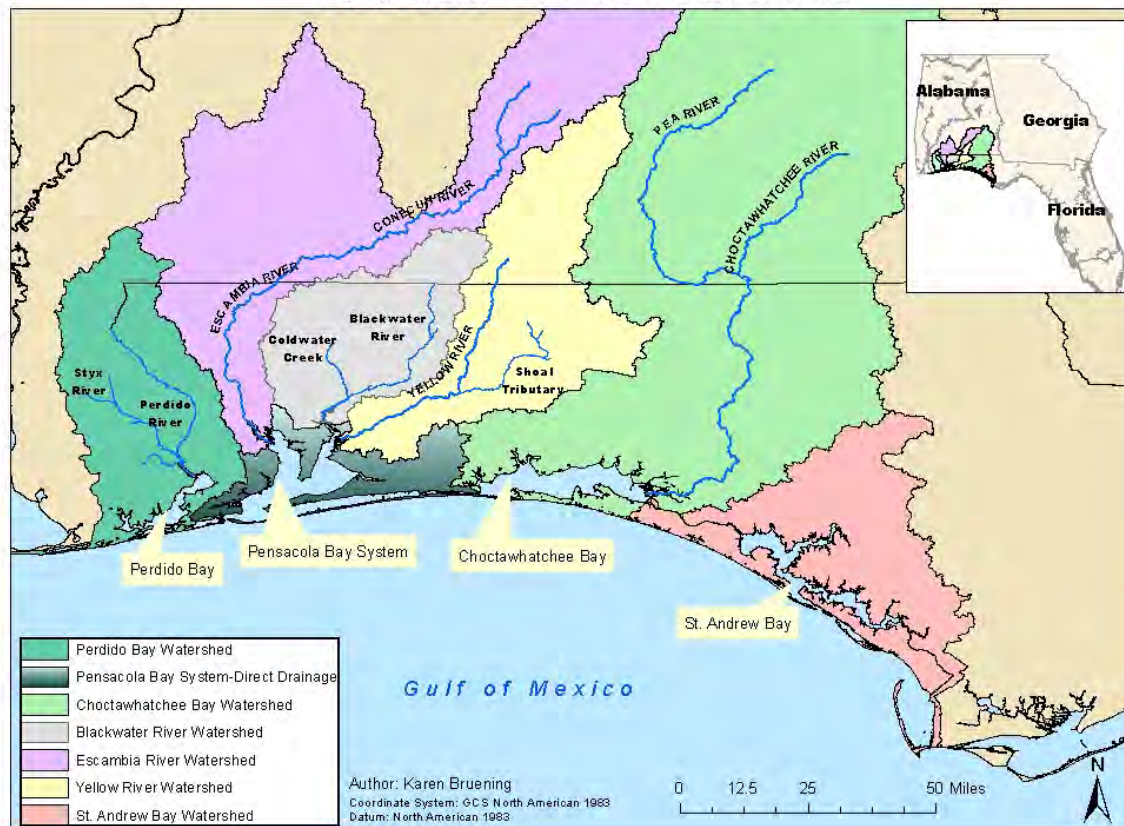


# Opportunities Exist

- Water Quality Workshop – Aug 2011
  - Report:
    - *An Integrated Water Quality Monitoring Plan for Northwest Florida and Alabama Watersheds*
    - Report highlights current monitoring efforts in the region & what's missing
    - National Water Quality Monitoring Council developed a plan for monitoring water quality in coastal waters and their tributaries in the United States, called the National Monitoring Network
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# Focus Area Watersheds

Northwest Florida Watersheds





# Workshop Findings

- A consensus in the need to control sediment, fertilizers, pesticides, and nutrient discharges into freshwater systems.
  - In addition, although BMPs exist, the implementation is not always the norm.
  - Each bay has its own 'Legacy Contaminants' which may require tailored monitoring.
  - <http://uwf.edu/cedb/research.cfm>
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# BFA Remains Hopeful that they can be a part of the Solution



# Growth is Coming





# Growth is Here



# Questions?

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