

**COMMITTEE MEETING EXPANDED AGENDA**

**ENVIRONMENTAL PRESERVATION AND CONSERVATION**

**Senator Dean, Chair**

**Senator Abruzzo, Vice Chair**

**MEETING DATE:** Thursday, January 17, 2013

**TIME:** 10:30 a.m.—1:30 p.m.

**PLACE:** *Toni Jennings Committee Room, 110 Senate Office Building*

**MEMBERS:** Senator Dean, Chair; Senator Abruzzo, Vice Chair; Senators Altman, Bullard, Gardiner, Grimsley, Latvala, Simpson, and Soto

TAB	BILL NO. and INTRODUCER	BILL DESCRIPTION and SENATE COMMITTEE ACTIONS	COMMITTEE ACTION
1	Presentation on Kings Bay Cleanup Art Jones, Kings Bay Rotary Club		Presented
2	Presentation on the status of the Apalachicola River Basin Lee Edmiston, Environmental Administrator, Department of Environmental Protection		Presented
3	Presentation of the status of the Apalachicola Bay Oyster Fishery Jessica McCawley, Director, Division of Marine Fisheries Management, Fish and Wildlife Conservation Commission		Presented
4	Other Related Meeting Documents		

January 17, 2013

Art Jones, President-Elect  
Kings Bay Rotary Club  
P.O. Box 27  
Crystal River, FL 34423  
727-642-7659  
[MrAWJONES@aol.com](mailto:MrAWJONES@aol.com)

Dear Senators,

Crystal River and Kings Bay, located in Citrus County approximately 70 miles north of Tampa/St. Petersburg, together form a truly unique hydrologic system. The tidally-influenced Kings Bay is the headwater of the Crystal River, which forms at the NW corner of the bay; six miles west of Kings Bay the river ends at the Gulf of Mexico. Kings Bay is home to the largest concentration of endangered manatees in Florida and is an international tourist destination. The system is the fourth largest of the 27 first magnitude springs in the State.

Historically the river was crystal clear and one could drink directly from it without fear of getting sick. Over time, we are finding the Bay and its river polluted and clogged up with Lyngbya algae.

Lyngbya has become a major nuisance in Kings Bay. Developed as mats on the bay's bottom, trapped gases often form in and beneath these algal mats causing them to break from of the substrate and float to the surface. Once floating, these mats can move to other areas of Kings Bay by wind and water currents impeding navigation and impairing the recreational use of the water body. If nothing is done to remove the Lyngbya we will someday lose the Bay as the environmental and recreational resource that we have known.

Lyngbya is a horrible alga that destroys fish habitats, hordes nutrients, and smothers beneficial aquatic vegetation in dark, dense benthic mats 3 to 4 feet thick on the bottom of this once white sandy bay. As a result, most all of the beneficial eel grass is gone and the water is cloudy.

Our Manatee habitats are being destroyed because the excessive Lyngbya is crowding out their food supply. Lyngbya smothers warm freshwater spring vents shrinking warm refuges in the winter and exposing Manatees to cold stress along with starvation. Lyngbya robs the water of oxygen and creates dead zones.

Human habitats are also being threatened. There was a time when you could swim anywhere in Kings Bay where the water was clean, clear and beautiful. Now you will find many areas filled with muck and mats of dirty, noxious algae that discourage swimming and other forms of recreation.

Lyngbya thrives on the nutrient-rich water coming from our springs. Although efforts are underway to reduce the amount of nutrients coming from throughout the springshed and coming into Kings Bay from the many spring vents, we are still faced with the challenge of removing the existing Lyngbya mats from the bottom of the Bay. Doing so will not only increase water clarity, but it will open up clogged spring vents which reduces the overall flow into Kings Bay. As we remove the mats, we also remove nutrients from the water and improve the opportunity to replant beneficial aquatic vegetation that will create healthy fish, manatee, and human habitats once again.

The "One Rake at a Time" Program is all about removing these mats. It is about physically raking Lyngbya algae out of the waters of Kings Bay...One Rake at A Time. The Program began in September, 2011 and has grown to become a popular community-based service headed by the Kings Bay Rotary Club, a not-for-profit service organization located in Crystal River.

Since the Kings Bay Rotary Project began, over 523 tons of noxious Lyngbya have been removed from the waters of Kings Bay. Over a dozen spring vents that were being suffocated by thick benthic mats of Lyngbya have been uncovered and are flowing once again into Kings Bay. More than 370 people have been involved in helping with the Lyngbya cleanup. A core group has been working on this project nearly every day using both hand rakes and limited mechanical harvesting methods. We also get numerous inquiries from throughout Florida, since Lyngbya is a problem in many other areas of Florida and others are likewise searching for a solution to this scourge.

Our goal is to do an initial clean-up of the Lyngbya throughout Kings Bay, a process we estimate will take approximately five (5) years to complete. Afterwards, routine maintenance would need to be in place to keep the Bay Lyngbya-free. Our goal is to raise the financial resources required to implement that plan, so that our Bay can stay healthy and clear.

At the same time, we recognize the need to attack this problem at its sources as well. We need to pursue measures throughout the Kings Bay springshed that will prevent further pollution from entering our aquifer, which feeds the Lyngbya and perpetuates the problem. The City of Crystal River is actively moving towards becoming a

*Waterfront-Friendly Community.* This program will reach out to all residents and businesses within the springshed area requesting that they modify their fertilizing and irrigation methods with the goal of becoming good stewards of our basic water supply. Golf courses in the County will be approached and asked to also make the pledge to use best practices in maintaining their courses. Everyone needs to be a partner in this endeavor.

Thousands and thousands of people first became certified to dive in Kings Bay and the Crystal River. Many others knew the Bay and river to be a boater's paradise, with swimming and fishing opportunities among the best in the state. Sadly, today that is not the case. As a community, we have determined that we will re-claim our Bay and our river as the jewels they once were - "One Rake at a Time", if necessary.

We're here today to ask for your help in that effort.

Thank you for your time and interest in making Crystal River a better place to live, work and play.

Sincerely,

Art W. Jones  
President-Elect  
Kings Bay Rotary Club

C: [bonn.kim@Flsenate.gov](mailto:bonn.kim@Flsenate.gov) via email  
file

## Funding comes from donations.

Please help if you can.

Public Clean-up days are announced in the Chronicle newspaper. You can get on a volunteer list by contacting Art Jones at 727-642-7659 cell for more information.

By doing it ourselves, together with our neighbors and friends we can accomplish our mission to "Save Kings Bay".

The "Kings Bay Rotary Charitable Foundation" is a 501C-3 Charity and all donations are tax deductible as allowed by law (Reg. # CH24270).



Please send donations to:  
Kings Bay Rotary Charitable Foundation  
PO Box 27  
Crystal River FL 34423

Thank You - Everything Helps!

A copy of the official registration and financial information may be obtained from the Division of Consumer Services by calling toll-free (800-435-7352) within the state. Registration does not imply endorsement, approval or recommendation by the state.

Custom Made Rakes

Available For Sale



Contact Art Jones

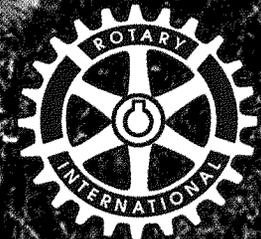
(727) 642-7659

mrawjones@aol.com



# Save Kings Bay

## Kings Bay Rotary



# Lyngbya

Lyngbya is a filamentous algae that has hair-like strands that can rise 10 to 14 feet from the floor of Kings Bay to the surface. It is slimy to the touch, is dark green to almost black in color, wraps around boat propellers and looks like raw sewage on the surface of the water. Lyngbya can cause a rash on human skin sometimes known as swimmers itch (seaweed dermatitis) on people with sensitive skin.

Lyngbya is helping cause the destruction of the aquatic ecosystem in Kings Bay and Crystal River. It needs to be physically removed from the waters as no chemical or algacide can penetrate its dense mats to kill it off. Old dead Lyngbya must also be physically removed as it suffocates everything it covers. In some areas of

Kings Bay there are layers upon layers of Lyngbya holding silt from years and years of build up. Over the years increased nutrient levels of nitrogen and phosphorus have led to the explosion of Lyngbya in Kings Bay.

Lyngbya is causing fish and other aquatic life to move away as dissolved oxygen levels in the water go down as algae absorbs oxygen and crowds out other beneficial aquatic plants that can put oxygen back into

the water. Manatees can be harmed if they get so starved they try to eat Lyngbya. It is not edible.

Lyngbya is a noxious weed that interferes with fishing, boating, swimming, manatees and all aquatic life in general. By removing Lyngbya with rakes and other mechanical means, we remove the dissolved fertilizers, septic, road and other pollutants from the waters of Kings Bay. Each rake full of Lyngbya removed helps clean the water column of pollutants. We save Kings Bay one rake full of Lyngbya removed at a time.

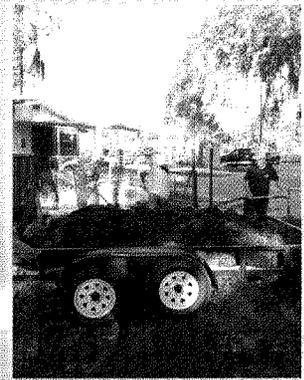
## One Rake at a Time.

Our Mission is to manually remove Lyngbya from Kings Bay and Crystal River. Beneficial aquatic vegetation will return as the algae is removed. Water quality and clarity will improve as aquatic life returns and the dissolved oxygen levels in the water return to normal levels and thus "Save Kings Bay".

This is a Kings Bay Rotary service project started in September 2011. We hope we can help improve the lives and environment of all concerned and build goodwill and better friendships along the way, one rake at a time.



Our action plan includes all necessary permits and the purchase of 3 pontoon boats that are used as floating barges to remove the Lyngbya. We have assembled special rakes, some with handles 15 feet long to rake out the algae in a careful manner.



Everyone helping is a volunteer and we need as many people as possible to get involved. Together we can make a real difference. We have already removed tons of Lyngbya since the project started. Removed Lyngbya is later tilled into the soil and used as an enriched humus, a natural recycled fertilizer that will retain moisture and provide nutrients like nitrogen and phosphorus.

Many volunteers help because they care and want to make a difference or simply like the exercise and being outdoors, but others can also earn community hour credits or a reward of \$1.00/cubic foot for Lyngbya removed and delivered to a drop off site. (Based on availability of donations.)



TAB 1

1A

# THE FLORIDA SENATE APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1-17-13

Meeting Date

Topic Lynxbya cleanup One Rake at a Time

Bill Number \_\_\_\_\_  
*(if applicable)*

Name Art Jones

Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title Director, Kings Bay Rotary

Address 560 NW 14<sup>th</sup> Place

Phone 727-642-7659

Street

Crystal River FL 34428

City

State

Zip

E-mail Mr AW Jones @ ad.com

Speaking:  For  Against  Information

Representing Volunteers

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

*While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.*

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S-001 (10/20/11)

1A-a

# THE FLORIDA SENATE APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/17/13  
Meeting Date

Topic "one rule at a time"

Bill Number \_\_\_\_\_  
*(if applicable)*

Name Joe Meek

Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title Chairman; Citrus County Commission

Address 110 N. Apopka Ave.

Phone 352-341-6560

Inverness FL 34450  
City State Zip

E-mail Joe.Meek@bocc.citrus.fl.us

Speaking:  For  Against  Information

Representing \_\_\_\_\_

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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THE FLORIDA SENATE  
**APPEARANCE RECORD**

1 A-b

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1-17-13

Meeting Date

Topic "ONE RAKE AT A TIME"

Bill Number \_\_\_\_\_  
*(if applicable)*

Name Jim FARLEY

Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title Mayor of Crystal River

Address 1461 NW 19 ST.

Phone 352-794-7455

Street  
Crystal River, FL 34428  
City State Zip

E-mail JFarley682@ad.com

Speaking:  For  Against  Information

Representing City of Crystal River, FL

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

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THE FLORIDA SENATE  
**APPEARANCE RECORD**

1A-C

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/17/2013  
Meeting Date

Topic I RAKE AT A TIME

Bill Number \_\_\_\_\_  
*(if applicable)*

Name SHARON KERNER

Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title VOLUNTEER

Address 3885 N. Nokomis Pk.

Phone 408-489-0749

*Street*  
CRYSTAL RIVER, FL 34428  
*City State Zip*

E-mail SharonKerner1@  
yahoo.com

Speaking:  For  Against  Information

Representing ART JONES - I RAKE AT A TIME

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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THE FLORIDA SENATE  
**APPEARANCE RECORD**

1 Ad

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/17/13

Meeting Date

Topic ONE RAKE AT A TIME

Bill Number \_\_\_\_\_  
(if applicable)

Name DAVID LITTLEJOHN

Amendment Barcode \_\_\_\_\_  
(if applicable)

Job Title RETIRED

Address 9287 W. HUGO BARCO CT

Phone 352-794-6273

Street

CRYSTAL RIVER FL 34428

City

State

Zip

E-mail DLITTLEJOHN@MSN.COM

Speaking:  For  Against  Information

Representing \_\_\_\_\_

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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# Florida Department of Environmental Protection



Office of Coastal and Aquatic Managed Areas

## Effects of Low Flows on the Apalachicola Bay

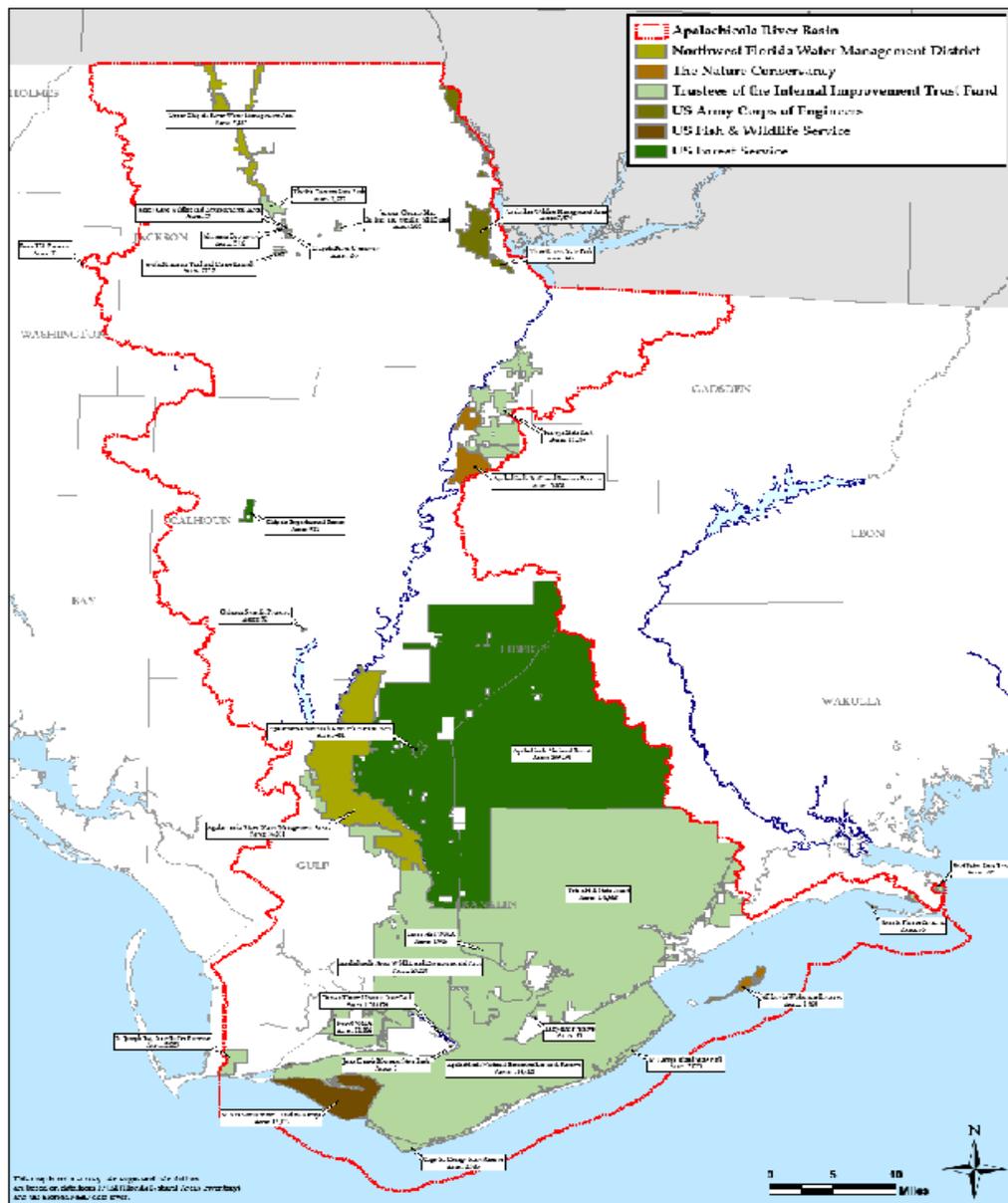
*Senate Environmental Preservation Committee*

*January 17, 2013*

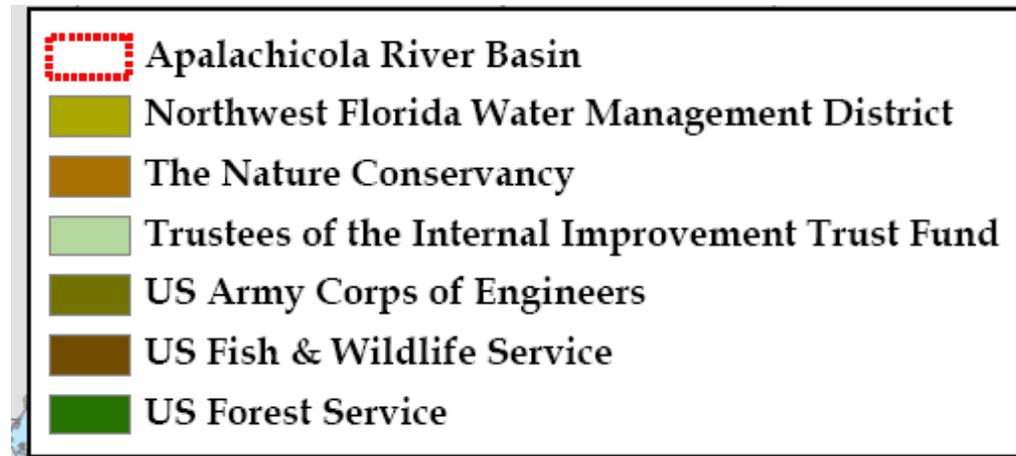
*Presented by Lee Edmiston*



# Protection of the Apalachicola Basin



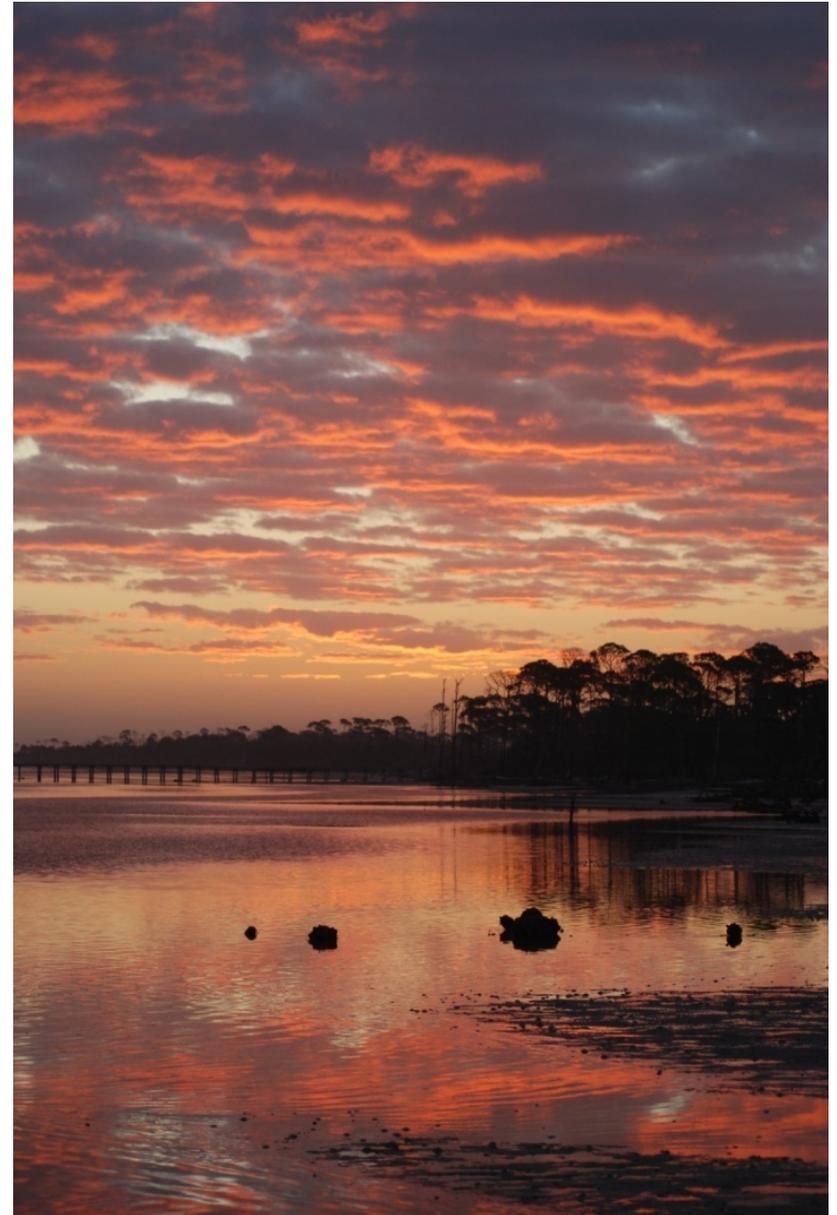
- Apalachicola National Estuarine Research Reserve – 246,766 acres protected
- 591,000+ acres of watershed purchased by State and Federal Government, private conservation organizations (\$170 million)
- Outstanding Florida Water, Class II Water, Aquatic Preserve, International Biosphere Reserve
- Established water reservation





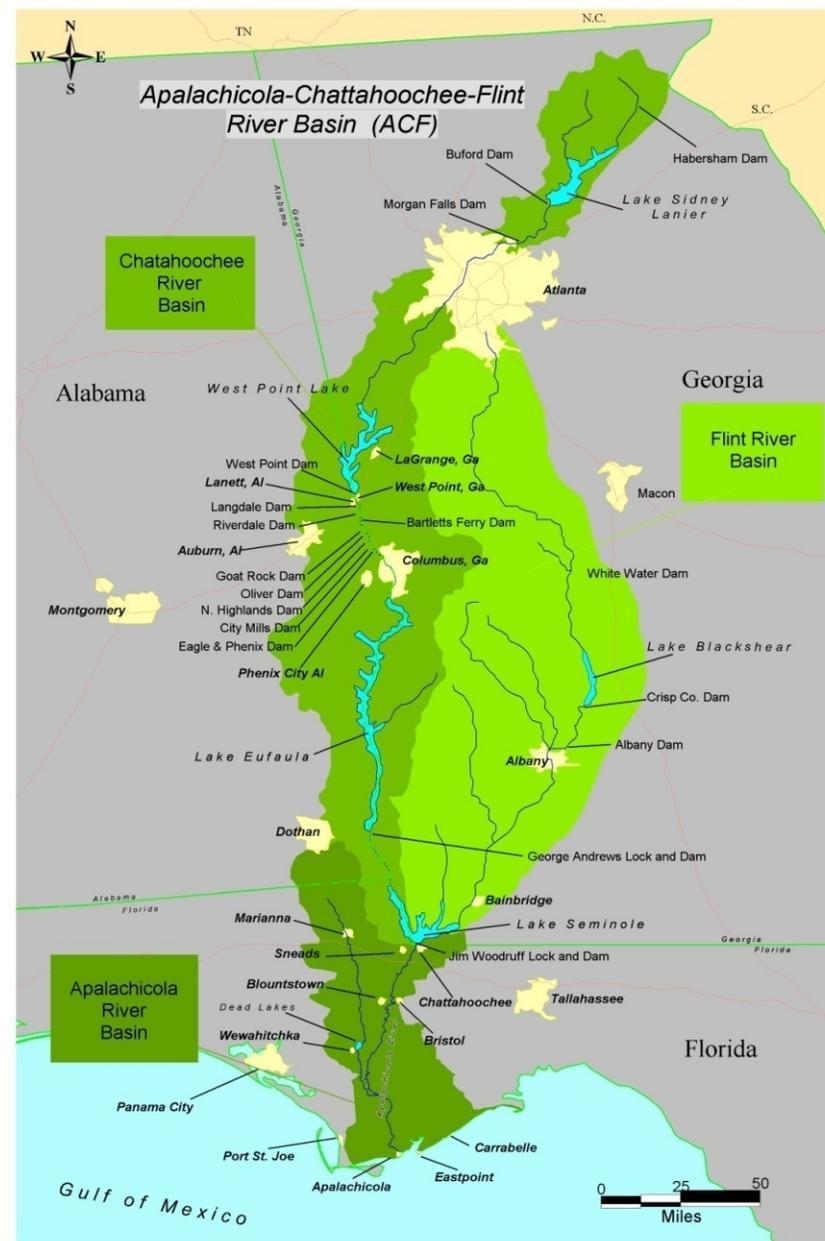
# The Importance of River Flow

- River flow is variable annually and seasonally – affects productivity.
- River flows provide essential nutrients that form the base of bay's food web.
- Salinity is variable throughout the bay and determines distribution of habitats and organisms
- River flows controls and moderates bay salinity, essential for oyster growth and survival.
- Accounts for 35 percent of fresh water flow on the western coast of Florida.



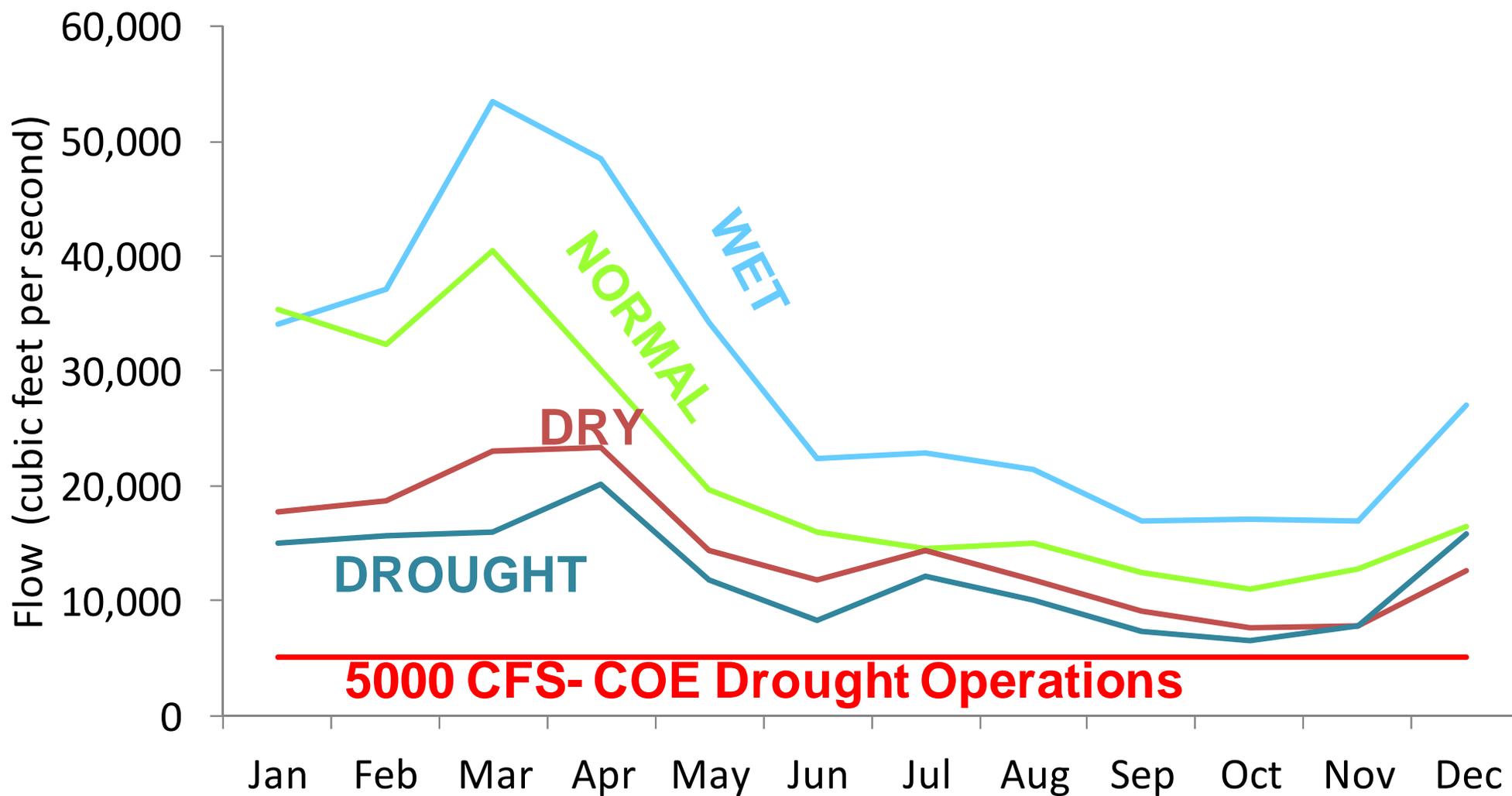
# The importance of salinity in the bay

- Controlled by riverflow
- Determines the species, distribution, and density of organisms found in the bay.
- Determines where predators are found in the bay.
- Influences the location of juvenile organisms.
- Indicative of nutrients & organic material coming down river (i.e. Food).



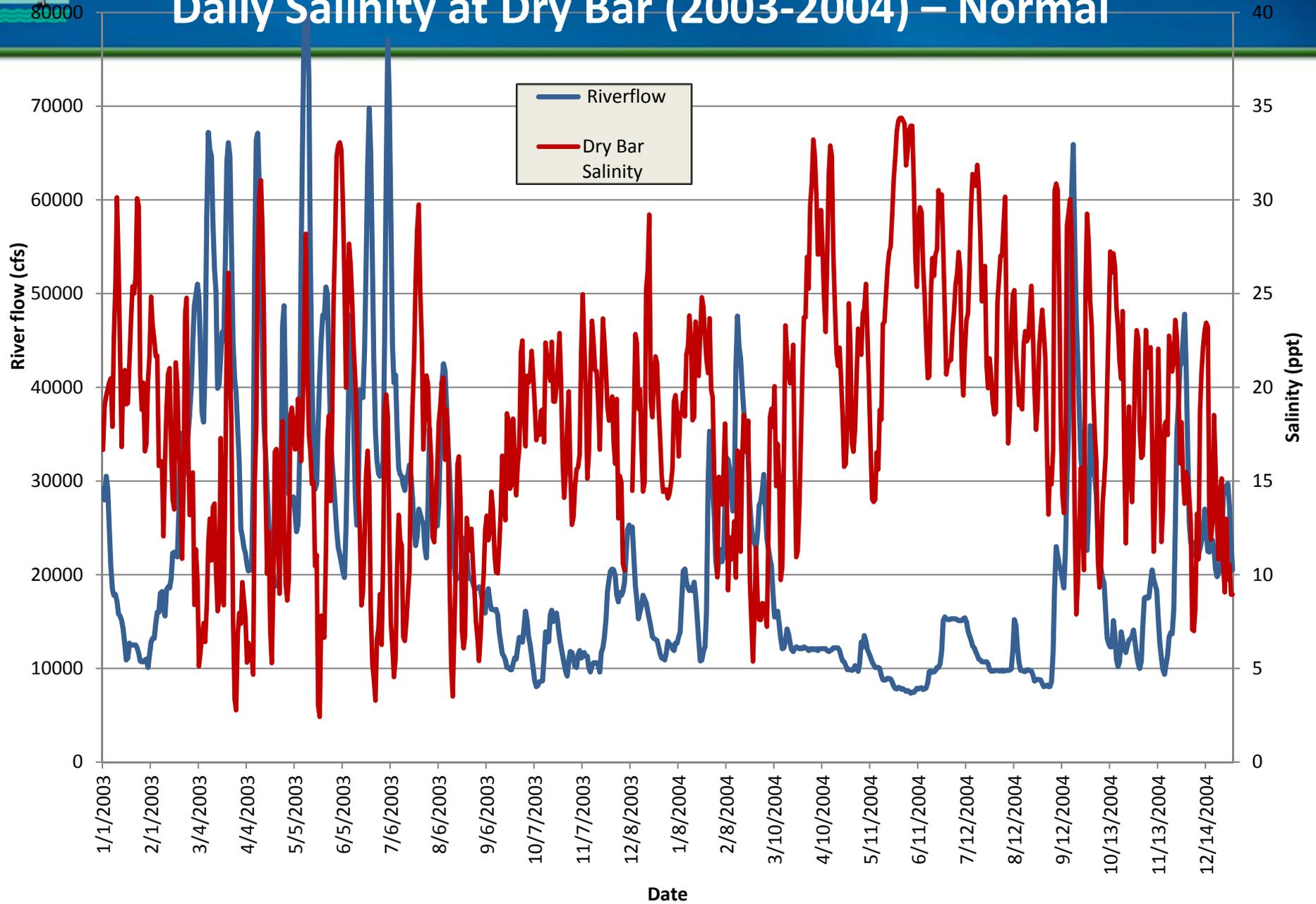


# Apalachicola River Historic Baseline Flows



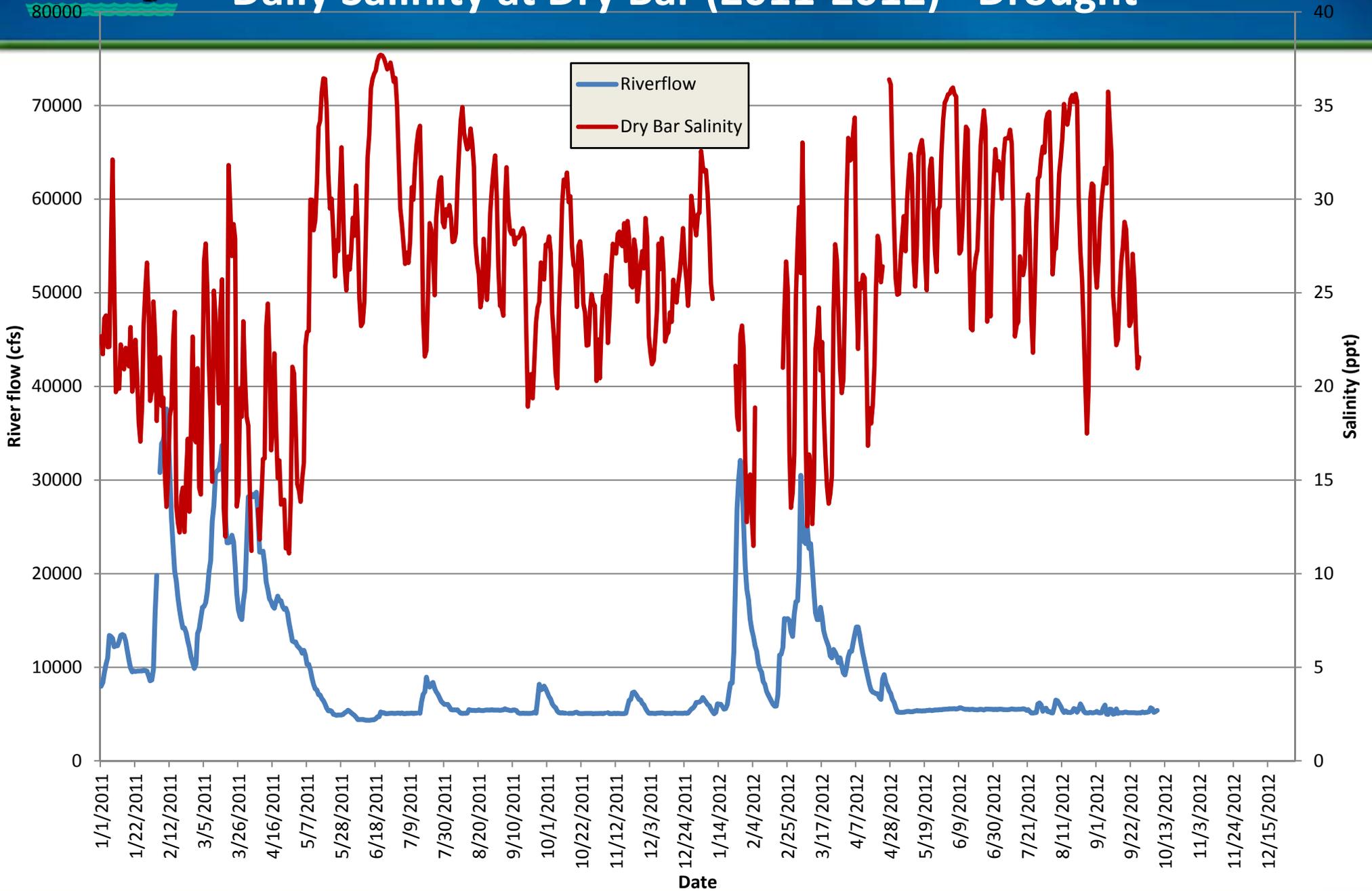


# Average Daily Riverflow at Chattahoochee, FL and Daily Salinity at Dry Bar (2003-2004) – Normal



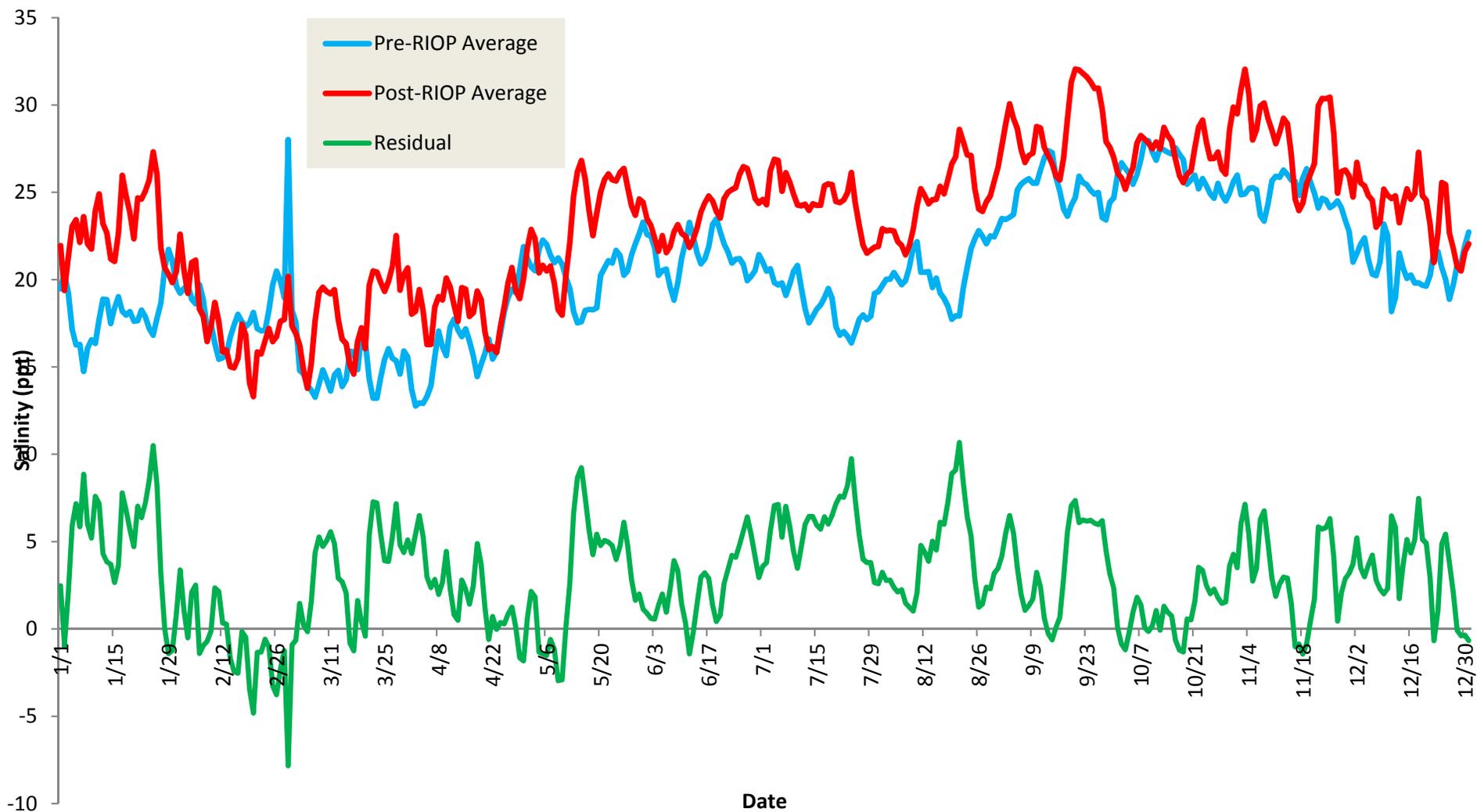


# Average Daily Riverflow at Chattahoochee, FL and Daily Salinity at Dry Bar (2011-2012) - Drought





# Average Salinity at Cat Point before (1992-2006) and after (2007-2012) RIOP





# Impacts of extended low river flows on the Bay

- Increase in salinity & temperature & decrease in nutrients
- (loss of productivity)
- Frequency and temporal extent of high salinity
- Influences other species distribution and abundance
- Reduction in commercial harvest
  - Shrimp, blue crabs, some finfish harvests affected
  - Significant oyster mortality
    - Increase in predation (conchs, drills and stone crabs)
    - Less food availability and quality of food affected
    - Increase in disease (prevalence of dermo infection)
    - Less spatfall
- Northeast Gulf of Mexico impacts



# Economics of Apalachicola Bay – Commercial Fisheries

- Commercial fishing is Franklin County's most important economic activity dating back to early 1900's
- Total Commercial Fishery (2007) - \$134 million in economic output annually, plus \$71 million in value added benefits.
- 10% of oysters harvested nationally and 90% of oysters harvested in Florida come from Apalachicola Bay
- Oyster industry supplies \$30 million in economic benefits annually
- Shrimp, blue crab, and finfish fishery also important



THE FLORIDA SENATE  
**APPEARANCE RECORD**

TAB 2

2A

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/17/13  
Meeting Date

Topic ACF

Bill Number \_\_\_\_\_  
*(if applicable)*

Name Greg Munson  
*MUNSON*

Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title Dep Secretary of Water Policy

Address \_\_\_\_\_  
*Street*

Phone \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

E-mail \_\_\_\_\_

Speaking:  For  Against  Information

Representing DEP

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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THE FLORIDA SENATE  
**APPEARANCE RECORD**

3\*

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/17/13  
Meeting Date

Topic ACF

Bill Number \_\_\_\_\_  
(if applicable)

Name ~~Lee Edmiston~~ Edmiston

Amendment Barcode \_\_\_\_\_  
(if applicable)

Job Title Director of NERR

Address \_\_\_\_\_  
Street

Phone \_\_\_\_\_

Apalachicola  
City

State Zip

E-mail \_\_\_\_\_

Speaking:  For  Against  Information

Representing DEP CAMIA

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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THE FLORIDA SENATE  
**APPEARANCE RECORD**

# 10

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1-17-13

Meeting Date

Topic Apalachicola River Counties

Bill Number \_\_\_\_\_  
*(if applicable)*

Name Chadwick Taylor

Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title Land Manager

Address P.O. Box 215, 4226 Buckland Trail

Phone 850/526-0176

Street

Greenwood, Florida 32443

City

State

Zip

E-mail CCT@phowl.com

Speaking:  For  Against  Information

Representing Apalachicola Riparian County Stakeholder Coalition

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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S-001 (10/20/11)

THE FLORIDA SENATE  
**APPEARANCE RECORD**

# (2)

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

01/17/13

Meeting Date

Topic APALACHICOLA - (NATTAHOOCHE-FLINT STAKEHOLDERS)

Bill Number \_\_\_\_\_  
*(if applicable)*

Name DAVID McLAIN

Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title ACFS GOVERNING BOARD MEMBER

Address 201 N. BAYSHORE DR.  
*Street*

Phone (850) 653-6454

EASTPOINT, FL 32328  
*City State Zip*

E-mail FIRSTRESPONSE@FAIRPOINT.NET

Speaking:  For  Against  Information

Representing APALACHICOLA

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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THE FLORIDA SENATE  
**APPEARANCE RECORD**

# (3)

1-17-13

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date

Topic Apalachicola River

Bill Number \_\_\_\_\_  
*(if applicable)*

Name Don Ashley

Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title Board Member

Address \_\_\_\_\_  
*Street*

Phone 508-2004

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

E-mail jdalligator@aol.com

Speaking:  For  Against  Information

Representing Apalachicola Riverkeeper

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/17/13

Meeting Date

Topic Apalachicola River Basin

Bill Number N/A (if applicable)

Name Georgia Ackerman

Amendment Barcode \_\_\_\_\_ (if applicable)

Job Title small business owner, eco-tourism\*

Address 8794 Megans Ln  
Tallahassee FL

Phone 850-894-0182

E-mail georgia@thewildernessway.net

Speaking:  For  Against  Information

~~\*~~ would like to distribute letter

Representing \_\_\_\_\_

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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**APPEARANCE RECORD**

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date \_\_\_\_\_

Topic APALACH RIVER - FRANKLIN COUNTY Bill Number \_\_\_\_\_  
*(if applicable)*

Name ALAN PIERCE Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title DIRECTOR, ADMINISTRATIVE SERVICES

Address FRANKLIN CO. COMMISSION

Phone 850-653-9783, ex 161

Street

APALACHICOLA

City

FL

State

32320

Zip

E-mail ALAMP@FAIRPOINT.NET

Speaking:  For  Against  Information

Representing FRANKLIN CO. BOARD OF COUNTY COMMISSION

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

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**APPEARANCE RECORD**

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date \_\_\_\_\_

Topic Apalachicola River Basin Bill Number \_\_\_\_\_  
(if applicable)

Name Chris Doolin Amendment Barcode \_\_\_\_\_  
(if applicable)

Job Title Consultant - SMALL COUNTY COALITION

Address 1118 B THOMASVILLE ROAD Phone 850-224-3180

Tallahassee, Fla E-mail cdoolin@netally.com  
City State Zip

Speaking:  For  Against  Information

Representing SMALL COUNTY COALITION

Appearing at request of Chair:  Yes  No Lobbyist registered with Legislature:  Yes  No

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3<sup>B</sup>

# THE FLORIDA SENATE APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date \_\_\_\_\_

Topic Oyster decline in the Community Bill Number \_\_\_\_\_  
*(if applicable)*

Name Joe Taylor Amendment Barcode \_\_\_\_\_  
*(if applicable)*

Job Title Executive Director, Franklin Promise Coalition

Address 192 14th Street Phone 850-323-0176  
*Street*

Apalachicola, FL FL 32320 E-mail mail@franklinpromise  
*City State Zip* coalition.org

Speaking:  For  Against  Information

Representing Franklin County Community

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

*While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.*

**This form is part of the public record for this meeting.**

S-001 (10/20/11)

THE FLORIDA SENATE

COMMITTEE APPEARANCE RECORD

(Submit to Committee Chair or Administrative Assistant)



1-17-13  
Date

ACF  
Bill Number

Name Sen. Al Lawson

Phone

Address  
Street

E-mail

City State Zip

Job Title

Speaking:  For  Against  Information

Appearing at request of Chair

Subject

Representing

Lobbyist registered with Legislature:  Yes  No

Pursuant to s. 11.061, Florida Statutes, state, state university, or community college employees are required to file the first copy of this form with the Committee, unless appearance has been requested by the Chair as a witness or for informational purposes.  
If designated employee: Time: from \_\_\_\_\_ .m. to \_\_\_\_\_ .m.



# Apalachicola Bay Issues - Oysters

Senate Environmental Preservation and  
Conservation Committee

January 17, 2013

**Florida Fish and Wildlife Conservation Commission**

Division of Marine Fisheries Management



# Apalachicola River Basin



# Biology of Oysters

- Bivalves
- Stationary
- Begin life as male, switch to female
- Spawn during warmer months
- Mature 4 weeks after settling
- Reach harvestable size in 18-24 months
- Life span: 3 years
- Maximum size: 12 inches



# Importance of Apalachicola Oysters

## Economically important commercial fishery

- Approximately 10% of oysters harvested nationally and 90% harvested in Florida come from Apalachicola Bay
- 2011 dockside value: \$6.73 million
- Supports 2,500 jobs

## Ecologically important species

- Provide habitat
- Provide structure
- Improve water quality



# Oyster Management in Florida

## FWC

- Issues commercial fishing licenses
- Establishes seasons, harvest limits, gear restrictions, and closed areas
- Provides law enforcement

## FDACS

- Monitors oyster populations
- Monitors water quality
- Certifies and inspects processing plants
- Monitors processing
- Restores oyster reefs
- Administers aquaculture and shellfish leasing programs



# FDACS 2012 Apalachicola Bay Report

## July 2012 Findings

- Populations depleted
- Physiologically stressful conditions for surviving oysters
- Low production estimates
- Stocks not sufficient to support harvest

## Stress Factors Leading to Poor Condition

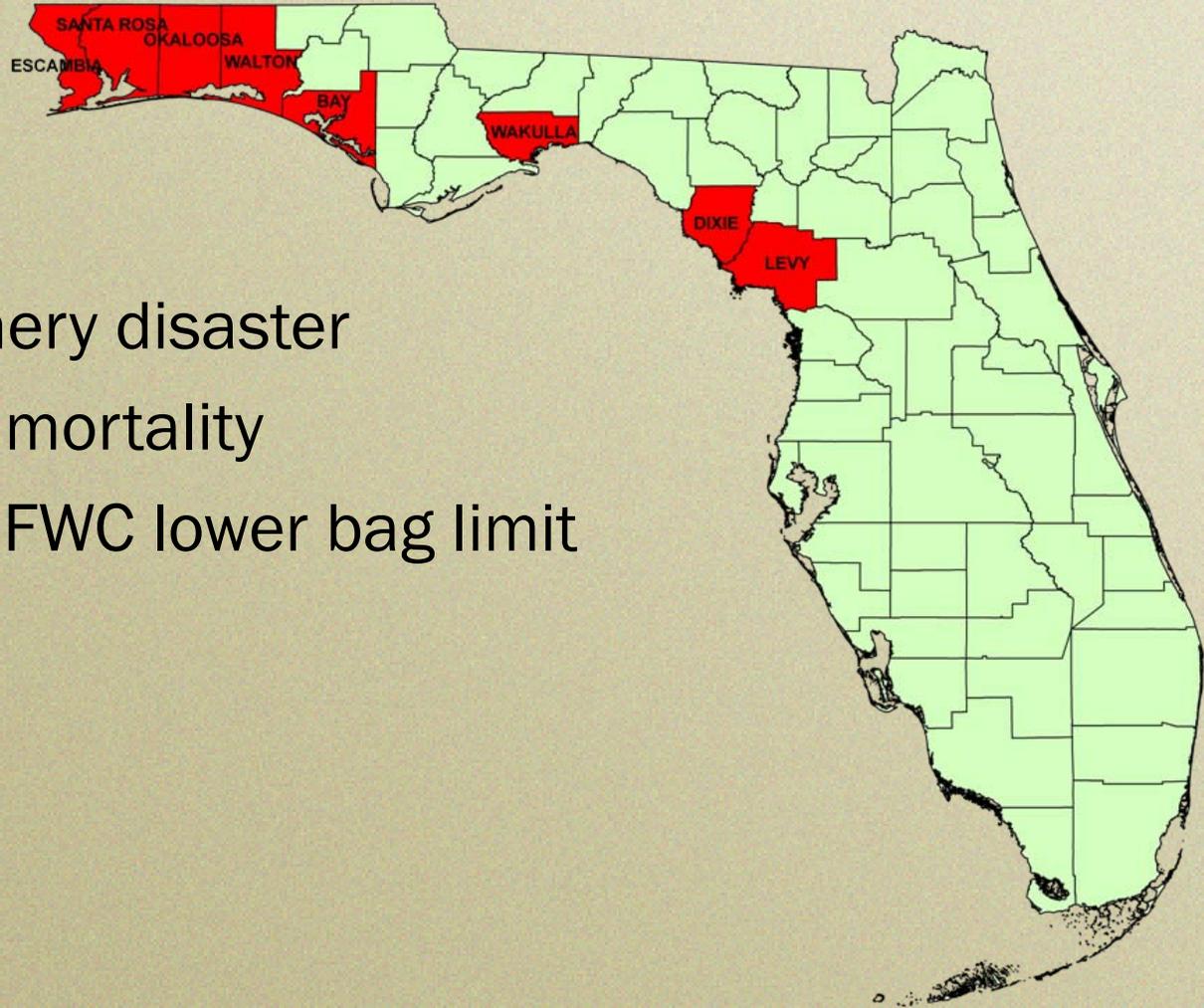
- Prolonged drought conditions
- Continuing low river discharge rates
- Prolonged high salinity
- High natural mortality and predation
- Intensive harvesting
- Tropical Storm Debby – minor contributor



# Issue Larger than Apalachicola

Bay, Wakulla, Levy, Dixie,  
Escambia, Santa Rosa,  
Okaloosa, and Walton  
Counties

- Requested federal fishery disaster
- Reports of high oyster mortality
- Bay County requested FWC lower bag limit



# Collaborating Agencies

- Governor's Office
- FWC
- DEP
  - Apalachicola National Estuarine Research Reserve
- FDACS
- University of Florida – Sea Grant
- Workforce Florida
  - Regional Workforce Board
- Northwest Florida Water Management District



# Gov. Scott Requested Disaster Relief Funds for Gulf of Mexico Oyster Industry

September 2012

- Sent request to US Department of Commerce
- To declare a commercial fishery failure
- For disaster relief funds needed to:
  - 1) Further assess causes of decline
  - 2) Determine feasibility of actions to restore resources
  - 3) Begin actions to restore resources
  - 4) Provide economic assistance



# FWC:

## Executive Order Issued for Bay County

- Executed from Oct. 1 – 31, 2012
- Lowered commercial bag limit to 10 60-lb bags
- Requested by Bay County Commission and Bay County oystermen
- Purpose: to better sustain commercial oyster harvesting opportunities in the waters of Bay County



# FWC: Closed Weekend Oyster Harvesting

## Order issued in Apalachicola Bay based on FDACS findings

- Harvest cannot sustain 300 bags per acre
- FWC's rule closes harvest on weekends

## 2012/2013 harvest

- Nov. 16, 2012 – May 31, 2013
- Weekends closed



# Upcoming Projects

- \$2.7 million National Emergency Grant received from the Governor's request to the US Department of Labor
- Shelling
- Monitoring
- Relaying
- Oyster Recovery Team
- Job Training
- Bay Management Plan
- Gulf Oyster Industry Council



TAB 3

4\*

THE FLORIDA SENATE  
**APPEARANCE RECORD**

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Jan. 17, 2013  
Meeting Date

Topic Apalachicola Oysters Bill Number \_\_\_\_\_ (if applicable)

Name Jessica McCawley Amendment Barcode \_\_\_\_\_ (if applicable)

Job Title Director, FWC's Division of Marine Fisheries Management

Address 620 S. Meridian Street Phone 850-487-0554

Tallahassee FL 32399 E-mail jessica.mccawley@myfwc.com

City State Zip

Speaking:  For  Against  Information

Representing Fish & Wildlife Conservation Commission

Appearing at request of Chair:  Yes  No Lobbyist registered with Legislature:  Yes  No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/20/11)

# CourtSmart Tag Report

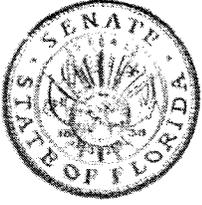
Room: EL 110  
Caption: Senate Environmental Preservation Committee

Type:  
Judge:

Started: 1/17/2013 10:37:29 AM  
Ends: 1/17/2013 12:33:34 PM Length: 01:56:06

10:37:36 AM Call to order  
10:37:50 AM pledge  
10:38:24 AM Remarks by the chairman  
10:39:12 AM Art Jones, Kings Bay Rotary Club  
10:39:56 AM Art Jones, Kings Bay Rotary Club  
10:39:57 AM Art Jones making presentation on Kings Bay Cleanup  
10:47:54 AM Art Jones making comments re: movie  
10:56:29 AM Sen Gardiner with question  
10:56:51 AM Mr. Jones responding  
10:57:46 AM Sen Gardiner with comments  
10:58:19 AM Sen Dean with comments  
10:58:41 AM Mr Jones responding to Sen. Dean's question  
11:00:23 AM Sen Dean with comments  
11:00:32 AM Sen. Soto with question  
11:00:54 AM Sen Soto with followup  
11:02:20 AM Sen Simpson with question  
11:02:51 AM Art Jones responding  
11:04:30 AM Sen Simpson with question  
11:05:22 AM Sen Simpson with additional question  
11:05:52 AM Sen Dean with comments  
11:06:10 AM Joe meek  
11:06:35 AM Joe Meek, Chairman, Citrus County Commissioner  
11:09:20 AM Senator Dean with comments re: Swift Mudd  
11:10:01 AM Jim Farley, Mayor of Crystal River  
11:12:21 AM Senator Soto  
11:13:04 AM Senator Dean with comments re: fertilizer  
11:14:26 AM Sharon Kerner, Volunteer with One rake a time  
11:15:03 AM David Littlejohn with One rake at a time  
11:16:30 AM Art Jones with One Rake at a time  
11:18:39 AM Sen Dean with comments  
11:19:04 AM Move to tab 2  
11:19:16 AM Presentation on the status of the Apalachicola river Basin, Lee Edminston, Environmental Administrator, DEP  
11:20:42 AM Mr. Munson introducint Lee Edminston  
11:21:45 AM Mr. Munson with comments  
11:25:02 AM Lee Edmunston  
11:38:21 AM Senator Dean introduces Sen Montiford  
11:39:00 AM Senator Montford re:comments  
11:40:50 AM Sen Dean with comments  
11:41:12 AM Senator Soto with comments  
11:41:27 AM Lee Edmiston responding  
11:43:59 AM Sen Soto with follow up question  
11:45:24 AM Sen Soto with follow up question  
11:45:24 AM Sen Soto with followup  
11:45:44 AM Lee Edminston  
11:46:53 AM Sen Dean  
11:47:36 AM Chadwick Taylor, Land Manager  
11:53:10 AM Sen Bullard with question  
11:54:37 AM Sen Dean  
11:54:47 AM David McLain ACFS Governing Board Member  
12:03:21 PM Sen Dean with comments  
12:03:52 PM Sen Soto with comments

12:04:53 PM Follow by sen Soto  
12:05:50 PM Don Ashley, Board Member  
12:11:06 PM Georgia Ackerman, Volunteer Apalachicola River Keeper  
12:12:52 PM Alan Pierce, Franklin County Commission  
12:13:47 PM Chris Doolin, Consultant, Small County Colition  
12:16:17 PM Sen Dean with comments  
12:16:33 PM Former Senator Al Lawson  
12:24:04 PM tab3  
12:24:16 PM Jessica McCawley, Director FwC's Division of Marine Fisheries Management  
12:32:23 PM adjourn



## THE FLORIDA SENATE

Tallahassee, Florida 32399-1100

### COMMITTEES:

Ethics and Elections, *Chair*  
Budget - Subcommittee on General Government  
Appropriations  
Budget - Subcommittee on Transportation, Tourism,  
and Economic Development Appropriations  
Community Affairs  
Environmental Preservation and Conservation  
Rules  
Judiciary  
Appropriations  
Select Committee on Gaming

**SENATOR JACK LATVALA**  
20th District

December 21<sup>st</sup>, 2012

The Honorable Charlie Dean, Chairman  
Senate Committee on Environmental Preservation & Conservation  
325 Knott Building  
404 S. Monroe Street  
Tallahassee, FL 32399-1100

Dear Chairman Dean:

I respectfully request to be excused from the meeting of the Environmental Preservation & Conservation Committee which is scheduled for Thursday, January 17<sup>th</sup>, 2013.

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink that reads "Jack Latvala".

Jack Latvala  
State Senator  
District 20

Cc: Pepper Uchino, Staff Director  
Kim Bonn, Administrative Assistant

REPLY TO:

- 26133 U.S. Highway 19 North, Suite 201 Clearwater, FL 33763 (727) 793-2797
- 408 Senate Office Building, 404 South Monroe Street, Tallahassee, Florida 32399-1100 (850) 487-5020

Senate's Website [www.flsenate.gov](http://www.flsenate.gov)

**Don Gaetz**  
President of the Senate

**Garrett Richter**  
President Pro Tempore



## THE FLORIDA SENATE

Tallahassee, Florida 32399-1100

### COMMITTEES:

Military Affairs, Space, and Domestic Security, *Chair*  
Appropriations Subcommittee on Criminal and  
Civil Justice  
Appropriations Subcommittee on Finance and Tax  
Children, Families, and Elder Affairs  
Criminal Justice  
Environmental Preservation and Conservation

### JOINT COMMITTEE:

Joint Committee on Public Counsel Oversight

### SENATOR THAD ALTMAN

16th District

January 16, 2013

The Honorable Charles S. Dean, Chair  
Senate Committee on Environmental Preservation and Conservation  
311 Senate Office Building  
404 South Monroe Street  
Tallahassee, FL 32399

Dear Chair Dean:

I respectfully request an excused absence for the Committee on Environmental Preservation and Conservation meeting on January 17th, 2013 at 10:30 AM. Please contact me or my Legislative Assistant Rick Kendust if you have any questions.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "Thad Altman".

Thad Altman

CC: Pepper Uchino, Staff Director, 325 Knott Building

#### REPLY TO:

- 6767 North Wickham Road, Suite 211, Melbourne, Florida 32940 (321) 752-3138
- 314 Senate Office Building, 404 South Monroe Street, Tallahassee, Florida 32399-1100 (850) 487-5016

Senate's Website: [www.flsenate.gov](http://www.flsenate.gov)

**DON GAETZ**  
President of the Senate

**GARRETT RICHTER**  
President Pro Tempore



January 17, 2013

### **Florida's Interests in Apalachicola-Chattahoochee-Flint Stakeholders Organization**

I am David McLain, a Franklin County Florida representative and member of the Governing Board of the ACF Stakeholders organization. It's my opportunity today to answer briefly the critical questions (1) Who/what is ACF Stakeholders? and (2) Why should Florida care?

For over 20 years our state invested significant effort and over a million dollars of our taxpayers' money in consultation, mediation and litigation seeking Florida's equitable portion of the shared, tri-state waters of the ACF Basin. That road apparently ended last year when the US Supreme Court let stand a ruling upholding GA: a judgment that Water Supply for the Greater Atlanta Regional area is an "authorized use" of the impounded waters of the Chattahoochee River in Lake Lanier, subject only to the discretion only of the USACE in operating that Federal reservoir.

During this same period of time, the lands of the ACF Basin have suffered severe and prolonged seasons of low rainfall and drought conditions, as I am sure you are well-aware. In these circumstances, then, we come before you today.

#### **1. So first off, who then is this tri-state Stakeholder organization ACFS and what have they to do with Florida?**

- 5 years ago a group of stakeholders in Florida's Apalachicola Basin organized as the Riparian County Stakeholder Coalition by resolution of the BOCC's of the 6 counties bordering on the Apalachicola River. This group began then to look to our immediate neighbors to the North in the ACF Basin to seek common ground.
- As it turned out, there are many water user interests that are downstream from metropolitan Atlanta who share downstream concerns with water, sufficiently so that, three years ago, we developed a charter of common aims and incorporated as a 501c(3) organization, the ACFS. Our joint objective is to produce, with expert water management consultant help, a Sustainable Water Management Plan (SWMP) for the ACF Basin.
- As a group, we have succeeded in raising over \$1M in private money from foundations and individuals to fund our effort. As we accelerate during the end of this current year toward a finished SWMP, there remain some significant challenges, not the least of which is a valid, scientific assessment of the downstream flows necessary to sustain the health and productivity of the Apalachicola River, Floodplain, and Bay, currently not a fully funded task.

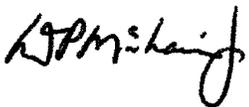
**2. Why, then, should this be of priority interest to Floridians in general, and to this Florida legislature, in particular?**

- The Apalachicola River remains the largest river in Florida in terms of water volume. It is critical to the economic health and well-being of the 6 Florida Counties that line its banks – Jackson, Gadsden, Liberty, Calhoun, Gulf and Franklin.
- The downstream flows in the ACF are especially critical to the health and productivity of the Apalachicola Estuary, our UNESCO-recognized “treasure”, rightly called “the Last Great Bay” and the Gulf oysters and rich seafood that spend at least a part of their lives there.
- Drought is a recurring event in Nature. But you must understand that the severity and duration of a drought are directly attributable to the actions of Man, or Man’s failure to act. It is the duration and severity of our drought that is doing the significant and lasting harm.
- Over the next short months the Corps of Engineers will exercise its Court-given discretion to produce a master Water Control Manual. This updated Manual will be guidance to its dam and reservoir operators as to the rules for allocation of freshwater flows in the ACF. Short of an “Original Action” before the US Supreme Court, this will be the final say on what allocation of flows Florida will get.
- The Commanding Officers of both the USACE Mobile District and the USACE South Atlantic Region have said repeatedly that they support the ACF Stakeholders unique efforts to create a defensible Sustainable Water Management Plan.

**So on behalf of the Apalachicola Sub-Basin Caucus of the ACFS, we would ask you to do three things:**

- 1) Through appropriate state agencies, seek opportunities to augment the ACFS funding for the scientific assessment of flows necessary to ensure the health and productivity of the Apalachicola Bay;
- 2) Have Committee Staff ensure that each of you are briefed, in special committee sessions or a dedicated Apalachicola Basin caucus, on progress toward the completion of the ACFS Sustainable Water Management Plan. And finally,
- 3) Ask to be briefed regularly by appropriate staff and agency heads on the state’s efforts to monitor and influence the USACE’s Water Control Manual process.

**On behalf of our Sub-Basin Caucus, I thank you for your time and attention today.**



David McLain

Franklin County Representative

ACFS Governing Board

(850) 653-6454 cell

January 17, 2013

Dear Chariman Dean and Committee Members,

*I am writing to express my support for protection of the Apalachicola River and Bay.*

There are countless, critical reasons to protect the Apalachicola River and Bay. As a Floridian and outdoors enthusiast, I care deeply about this river and bay's eco-system. It is a unique, important habitat for innumerable wildlife species. Of course, you are keenly aware of the incredible economic impact of the related seafood and tourism industry of this coastal region. People's livelihoods are dependent upon the health of this river and bay system. Many families are suffering due to the dramatic decline in oysters which is directly related to the low freshwater levels making it to the estuary where the river meets the bay.

Because I own and operate a kayak eco-tourism business, I have the good fortune to spend many hours weekly on our area waterways. I am not exaggerating when I tell you that people come from all over the States and world to explore North Florida's waterways and woodlands. During the past decade, I have lead river trips hosting international travelers from Korea, Germany, Canada, Sweden, Venezuela---and the list continues. These folks are "in awe," "blown away" and "mystified" by the richness and uniqueness of beautiful North Florida. We must proactively, strenuously protect it.

More important than my chosen occupation, though, is my role as a parent. My children and countless generations of Floridians are relying on us, *right now*, to solve the water challenges of our state. My kids get it. They know we cannot waste water and destroy wilderness. Our survival depends on protection of both. We must recognize water as a precious natural resource to be protected--not taken for granted, wasted or squandered. It is our children and their children who will pay the price for shortsighted greed and poor problem resolution skills. *We must act now to protect sustainable water resources for our citizens.* **I urge you to work closely with knowledgeable leaders, such as Apalachicola Riverkeeper, who understand the challenges before us. More importantly, Apalachicola Riverkeeper offers feasible solutions.** Let's swiftly, cooperatively solve the ecological crisis confronting the Apalachicola River and Bay.

Thank you for your attention and leadership. Please call on me to help. I am eager to be part of the solution to the challenges facing Apalachicola River and Bay.

Best wishes for a successful, productive session and a memorable 2013.

Sincerely,  
  
Georgia Ackerman

georgiaackerman@earthlink.net  
8794 Megans Lane  
Tallahassee, Florida 32309  
850-894-0182

**The Florida Senate**  
**Committee Meeting, Environmental, January 17, 2013**

**Comments for the Record**, Apalachicola River Riparian County Stakeholder Coalition  
C. Chadwick Taylor, P. O. Box 315, Greenwood, Florida 32443, 850/526-0176, [cct@phonl.com](mailto:cct@phonl.com)

Senator Dean, Senator Abruzzo, Members:

Thank you for this opportunity to speak. My name is Chad Taylor and early this morning I left Marianna and crossed the Apalachicola River on behalf of the Riparian County Stakeholder Coalition of the Apalachicola River Basin.

Let me thank Senator Montford and Senator Bullard for the opportunity to speak on this issue Monday in the Senate Agriculture Committee and Senator Gaetz for his attention to this matter. These are essentially the same remarks and apply equally well here.

In 2007, after almost two decades of litigation and negotiation on water allocation, also known as the Water War, the six Boards of County Commissioners from the counties bordering the Apalachicola River, Jackson, Gadsden, Calhoun, Liberty, Gulf and Franklin each by resolution came together to address the water allocation issues in the Apalachicola, Chattahoochee and Flint River basin, ACF. The result is the Riparian County Stakeholder Coalition, for short RCSC. It was evident to these commissioners and the citizens, the stakeholders living in the basin, time was not on Florida's side and as the years past the conditions in the Apalachicola River, Floodplain and Bay continued to decline.

Here we are now five years later, and after twenty-four years of litigation and negotiation the conditions continue to decline and perhaps today are now worse than ever. Accordingly over the fall of 2012, the RCSC again with the six Boards of County Commissioners have formed the Riparian County Stakeholder Compact, an inter-local government agreement. In the first five years, among many successes, we include the formation of the ACF Stakeholders, Inc. you will hear about shortly.

We are here today to ask you and the Legislature to assist us in securing the flows in the ACF Basin necessary to sustain the health and productivity of the Apalachicola River, Floodplain and Bay in these four ways, in this session;

- We need a unified Florida response to this crisis, now, federal, state, local government, basin stakeholders all working together to solve the problem
- We believe it will be helpful to form an Apalachicola River Basin Legislative Caucus for House and Senate members to work with the Federal and State agencies and the stakeholders
- We need the data and assessment tools to answer the question for everyone, including Georgia and Alabama, "how much water does Florida require" to sustain the Apalachicola River, Floodplain and Bay

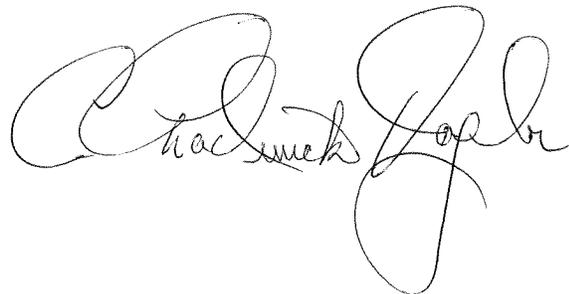
- We need your funding support so our state agencies, our first rate scientists and policy folks, AND the Riparian County Stakeholder Coalition, the RCSC, and others, like the University of Florida, working the problems can insure our very best possible outcome

As an example, and just for a moment, let me put on a different hat, my work as a land manager of a center pivot irrigated row crop peanut and cotton farm in northeast Jackson County. In this Water War you have heard a lot about the City of Atlanta and oysters, mussels and sturgeons. There is another eight hundred pound gorilla in the corner and that is irrigated production agriculture pumping of groundwater that impacts stream flows in southwest Georgia on the Flint River and flows to the Apalachicola River and reservoir releases by the US Army Corps of Engineers on the Chattahoochee, including Lake Lanier north of Atlanta. All that can be said in this short time is that irrigated farmers in the Apalachicola River Basin, Jackson County particularly, are in the same boat with southwest Georgia irrigated farmers in the Flint River Basin. The University of Florida, North Florida Research and Education Center, Northwest Florida Water Management District, Florida Department of Agriculture and Consumer Services, Fish and Wildlife Commission, the RCSC all need your support to work this challenge, among the many others.

In closing, and on behalf of the residents of our six riparian counties of the Apalachicola River Basin, our Boards of County Commissioners and the Riparian County Stakeholder Coalition, please take to heart and to action these four requests;

- Support a unified Florida response to this crisis on the Apalachicola River
- Consider forming an Apalachicola River Basin Legislative Caucus
- Help us answer the question, “how much water does Florida require”
- Support our need for funding so we attain the very best possible outcome

Thank you for this opportunity to come before you on this important issue so we can work together to sustain the health and productivity of the Apalachicola River, Floodplain and Bay, that, like the Everglades, is an **American Treasure!**

A handwritten signature in cursive script, appearing to read "Charles F. Zepher". The signature is written in black ink and is positioned in the lower right quadrant of the page.



# UF Oyster Recovery Team

## Background, Scope and Outcomes to Date

January 17, 2013

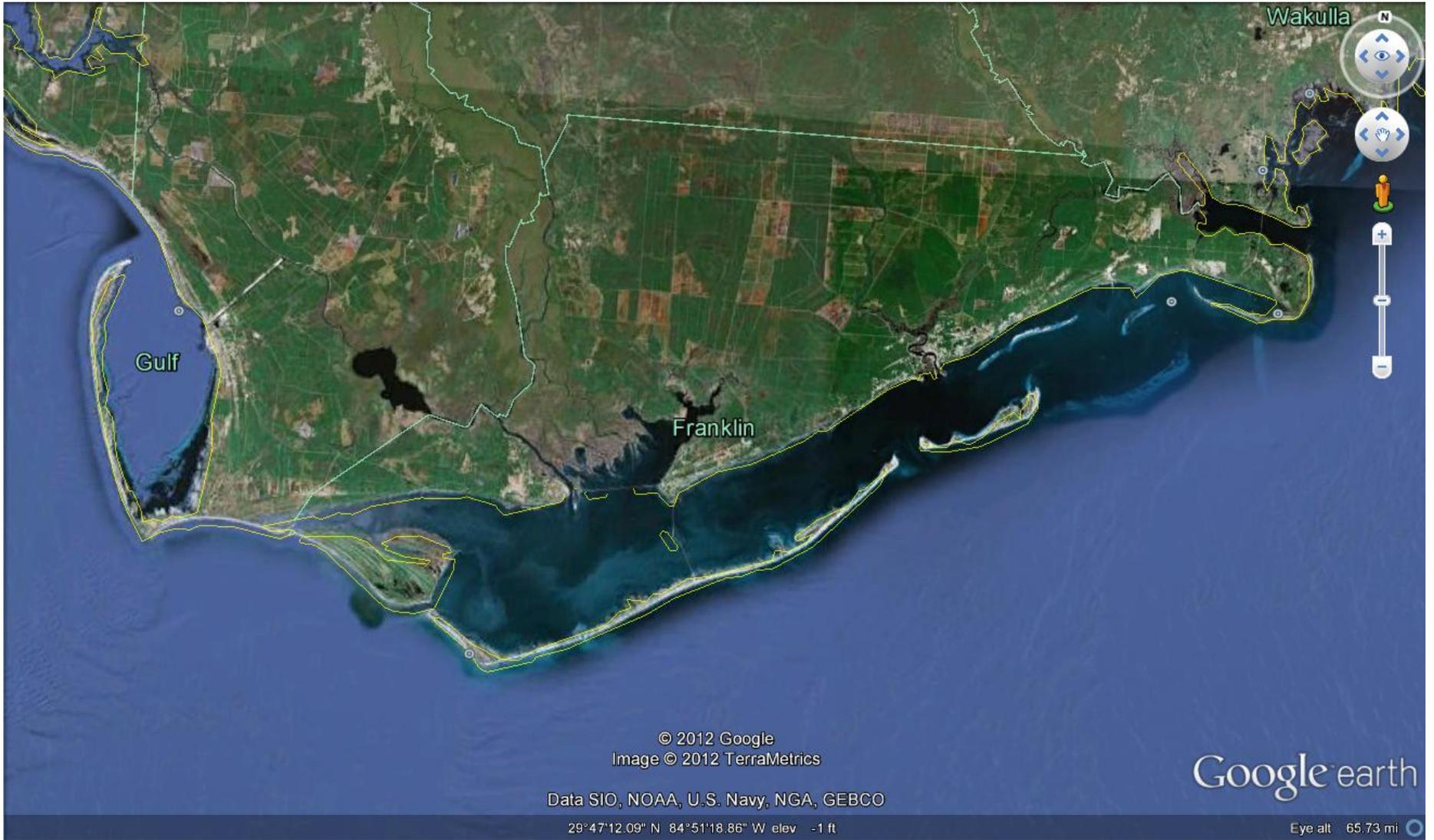
Karl Havens

Professor, UF/IFAS Fisheries and Aquatic Sciences

Director, Florida Sea Grant College Program

E-mail: [khavens@ufl.edu](mailto:khavens@ufl.edu)





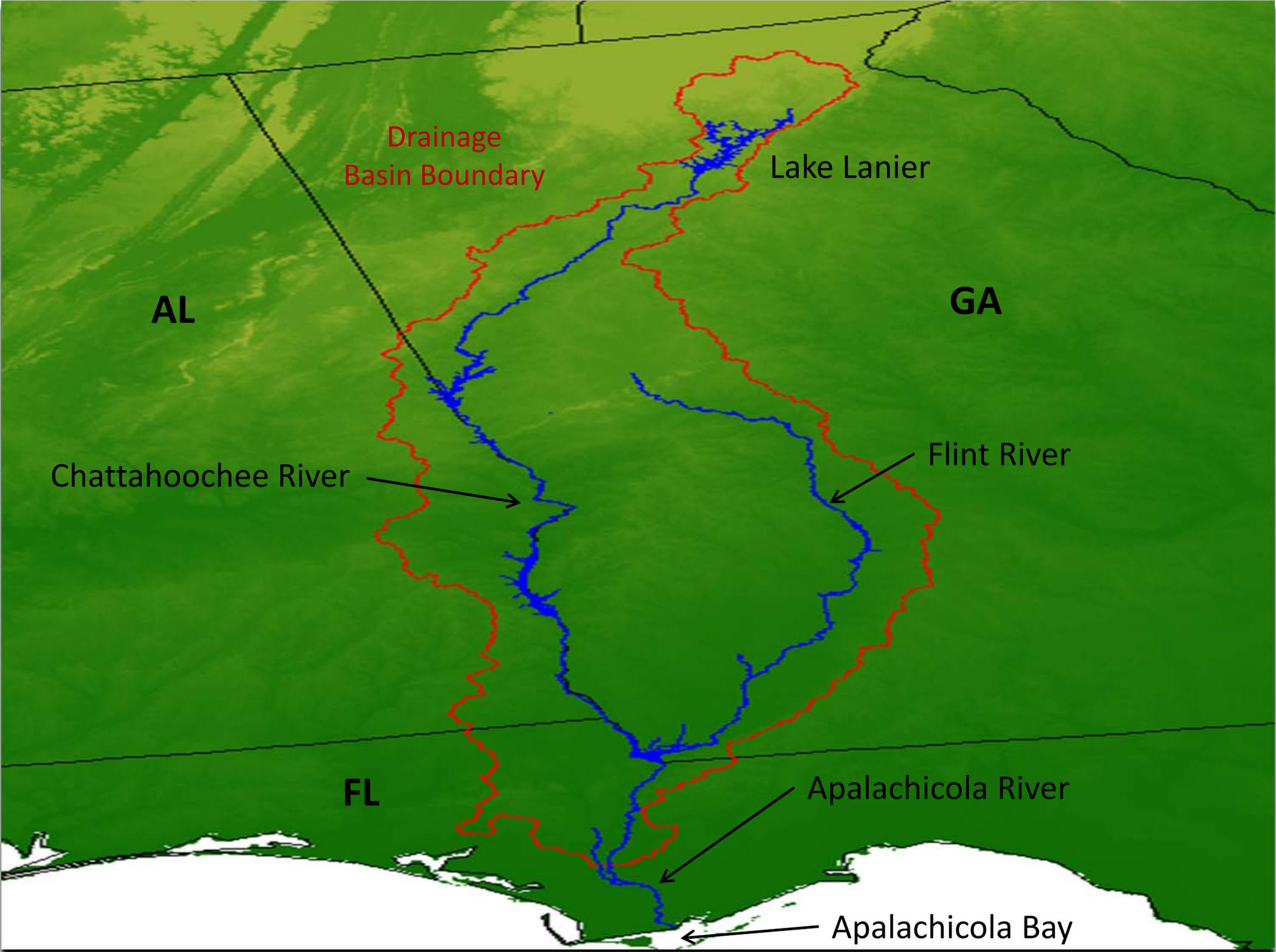
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Data SIO, NOAA, U.S. Navy, NGA, GEBCO

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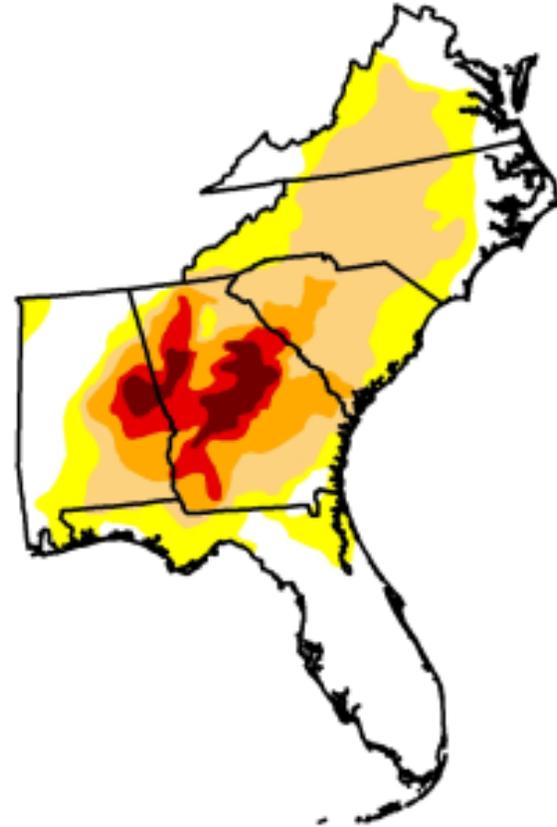
Google earth

Eye alt 65.73 mi



# Drought Conditions

- Rainfall deficits 8-18 inches in the basin
- Record low ground water levels
- Driest region in the country last 2 years
- River flow in last 3 years lowest on record
- 70 to 90% chance of below normal rainfall until March



Released Thursday, November 29, 2012  
National Drought Mitigation Center,

# Structure of the Team

University  
researchers  
(UF, FSU, FGCU)

Franklin's Promise  
Coalition, Seafood  
Workers Association,  
Gulf Coast Workforce  
Board

**UF Oyster Recovery Team**

```
graph TD; A[University researchers (UF, FSU, FGCU)] --- B[UF Oyster Recovery Team]; C[Franklin's Promise Coalition, Seafood Workers Association, Gulf Coast Workforce Board] --- B; D[Agency scientists / managers (DACS, FWC, DEP, WMD)] --- B; E[Residents of Franklin County] --- B;
```

Agency scientists / managers  
(DACS, FWC, DEP, WMD)

Residents of  
Franklin County

# Objectives of the Team

- Determine status of the Bay and possible reasons for observed oyster collapse
- Provide suggestions about future oyster fishing and management, and about effects of river flow regime
- Foster sustainable use of the resource by the oyster fishing industry
- Help the industry become resilient to adverse environmental conditions

# Data Analyses and Model Development

- Evaluation of extant oyster landing and effort data (from FDACS)
- Evaluation of extant oyster population data (from FDACS and FWC)
- Sampling of oyster size, health status and percent live / dead
- Sampling for oil and dispersant by-products in oysters, fish, crabs ...
- Sampling to determine abundance of predators
- Experiments to determine impacts of predators
- Experiments to determine growth rates under different conditions
- Development and use ecosystem model to guide river flow decisions
- Development and use of ecosystem model to guide fisheries management

\* Existing agency information in black; new data and modeling in blue

## Results to Date

- Levels of oil and dispersant are below detection in samples examined to date – however, we continue to analyze samples of oysters, crabs, fish and shrimp
- High levels of oyster predators (clams, conchs, sponges) -  
- consistent with impacts from low river flow
- A decision support tool (interactive model) for oyster management is being developed -- for late 2013.
- The oyster industry and community are actively engaged in all aspects of this program.

# Key Points

- The oyster collapse is a serious issue, and UF is responding, in its role as the state's Land Grant University.
- We are actively involving the community, industry and state agencies.
- We are developing a decision support tool that can be used to manage oysters in a more sustainable manner.
- In addition to our project, there is a need for a robust long-term monitoring program better suited to guide management of oyster harvesting under a range of environmental conditions.

# Thank you

For updates on the Oyster Recovery Team activities and products:

<http://franklin.ifas.ufl.edu/uf-oyster-recovery-team/>

# 1

THE FLORIDA SENATE  
**APPEARANCE RECORD**

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Did not speak (18)

Meeting Date \_\_\_\_\_

Topic Apalachicola Bay (1) Bill Number \_\_\_\_\_  
(if applicable)  
Name Karl Havens Amendment Barcode \_\_\_\_\_  
(if applicable)  
Job Title Professor, Fisheries; Director, Florida Sea Grant College Program  
Address Univ. of Florida / IFAS Phone 352 392 5870  
*Street*  
Gainesville FL 32611 E-mail khavens@ufl.edu  
*City State Zip*

Speaking:  For  Against  Information

Representing UF / IFAS

Appearing at request of Chair:  Yes  No

Lobbyist registered with Legislature:  Yes  No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/20/11)

#2

# THE FLORIDA SENATE APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Did NOT speak (2B)

Meeting Date \_\_\_\_\_

Topic Apalachicola Bay Bill Number \_\_\_\_\_ (if applicable)

Name Andy Kane (Kane) Amendment Barcode \_\_\_\_\_ (if applicable)

Job Title Director Aquatic Parkboat Lab

Address University of Florida Phone 352-273-9090

Street Gainesville FL City Gainesville State FL Zip \_\_\_\_\_ E-mail Andy Kane@ufl.edu

Speaking:  For  Against  Information

Representing Univ of FL

Appearing at request of Chair:  Yes  No Lobbyist registered with Legislature:  Yes  No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/20/11)



# **Andrew S. Kane, MS, PhD**

**Department of Environmental and Global Health  
College of Public Health & Health Professions**

**Aquatic Pathobiology Laboratories  
UF Emerging Pathogens Institute**

**UF Oyster Recovery Team  
Contaminants & Pathogens Work Group**





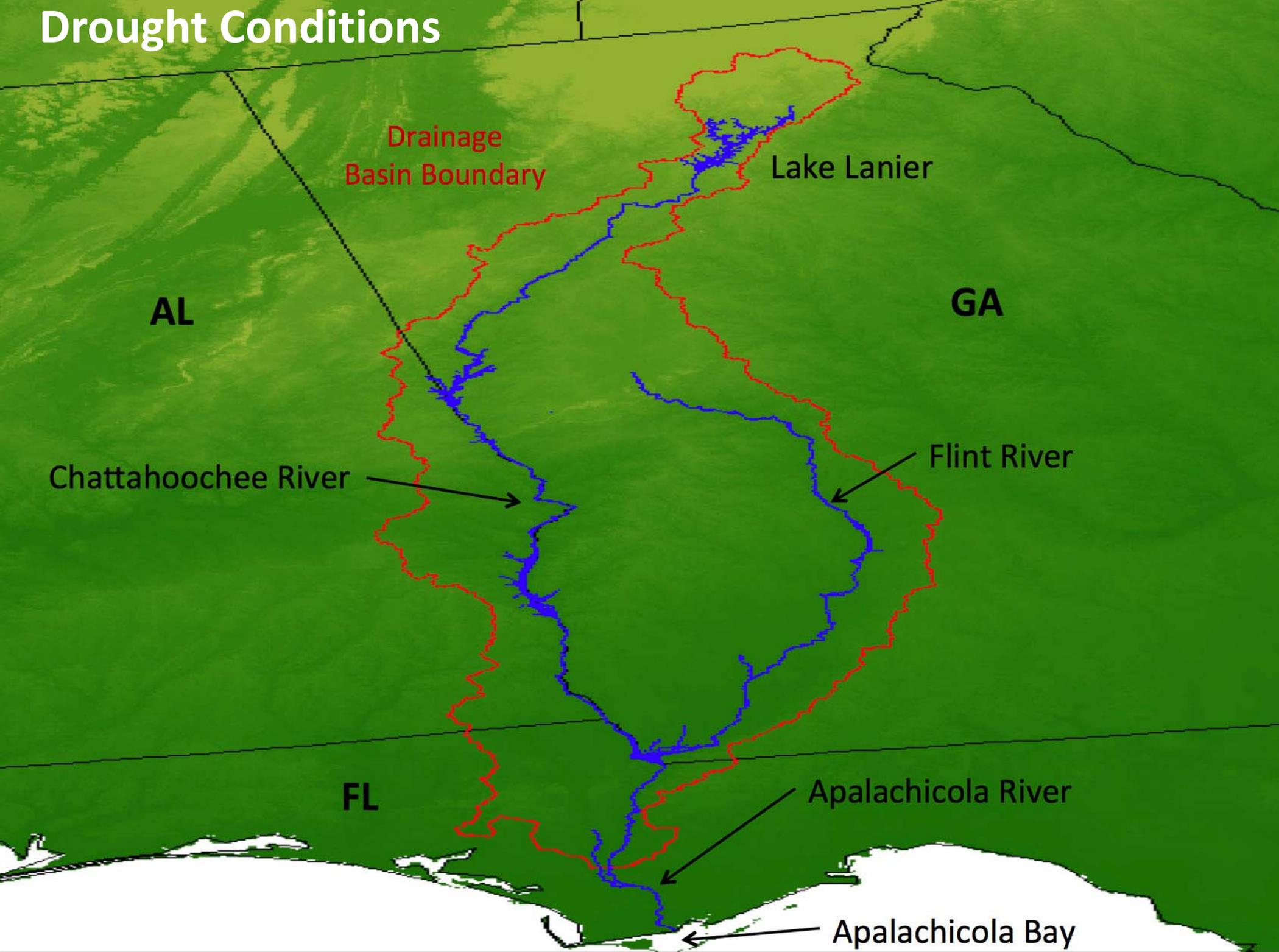
## HEALTHY GULF HEALTHY COMMUNITIES

recovery and resilience after the DWHOS  
[HEALTHYGULFCOAST.ORG](http://HEALTHYGULFCOAST.ORG)

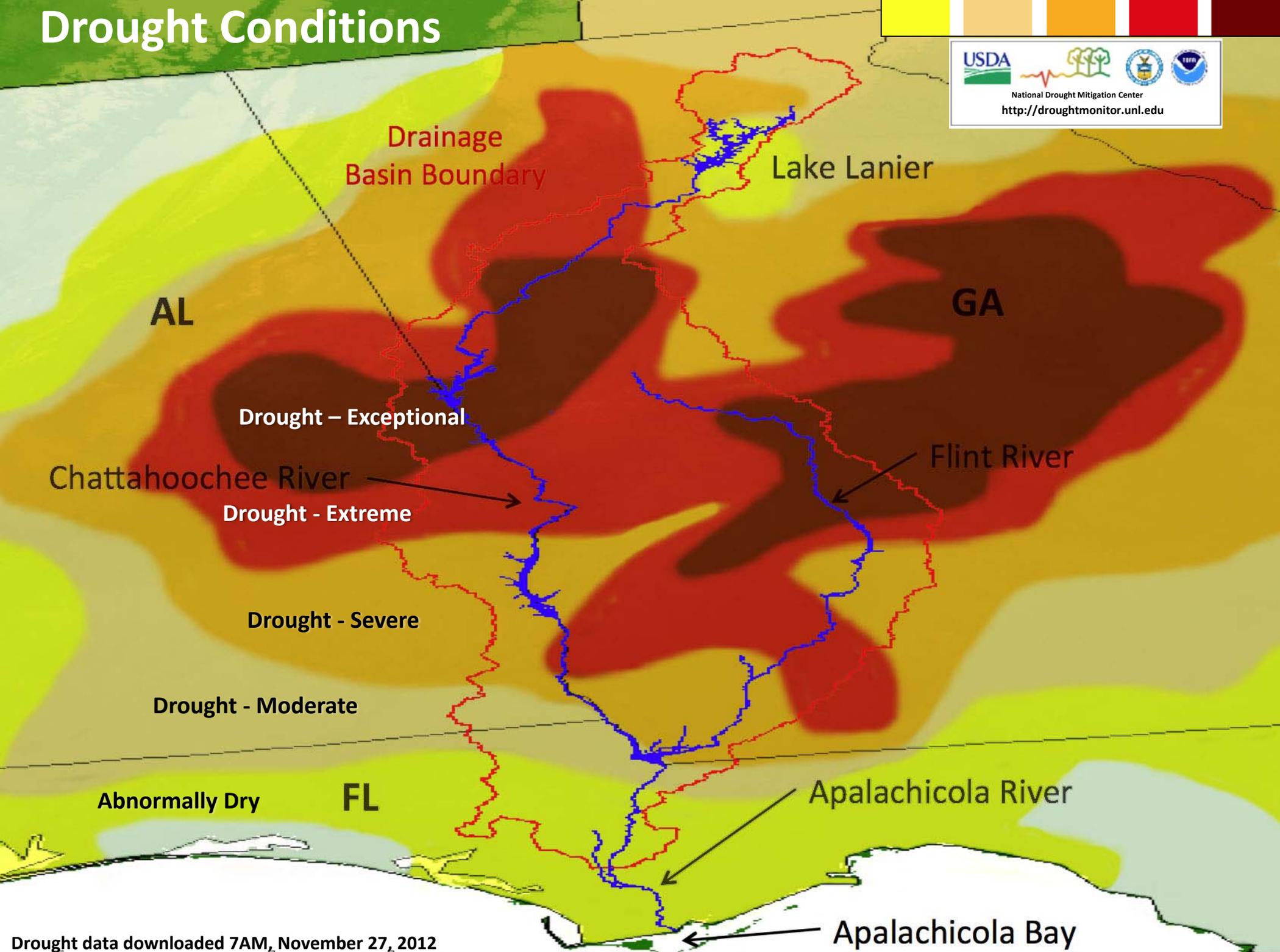




# Drought Conditions

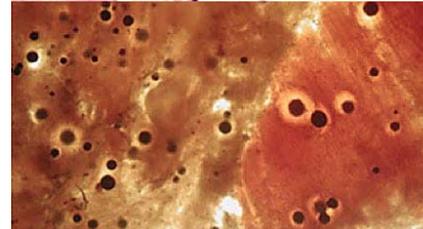
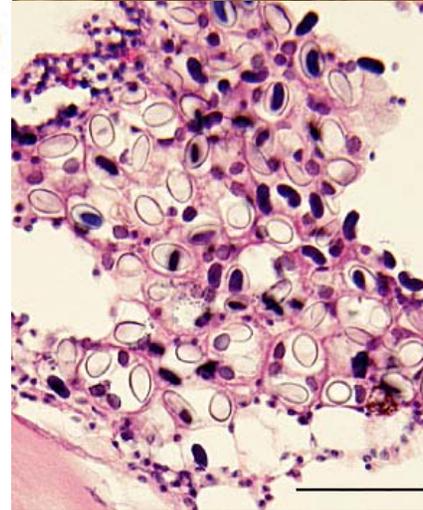


# Drought Conditions



Drought data downloaded 7AM, November 27, 2012

# Parasites and Predators



# Iconic Seafood: Apalachicola Bay Oyster

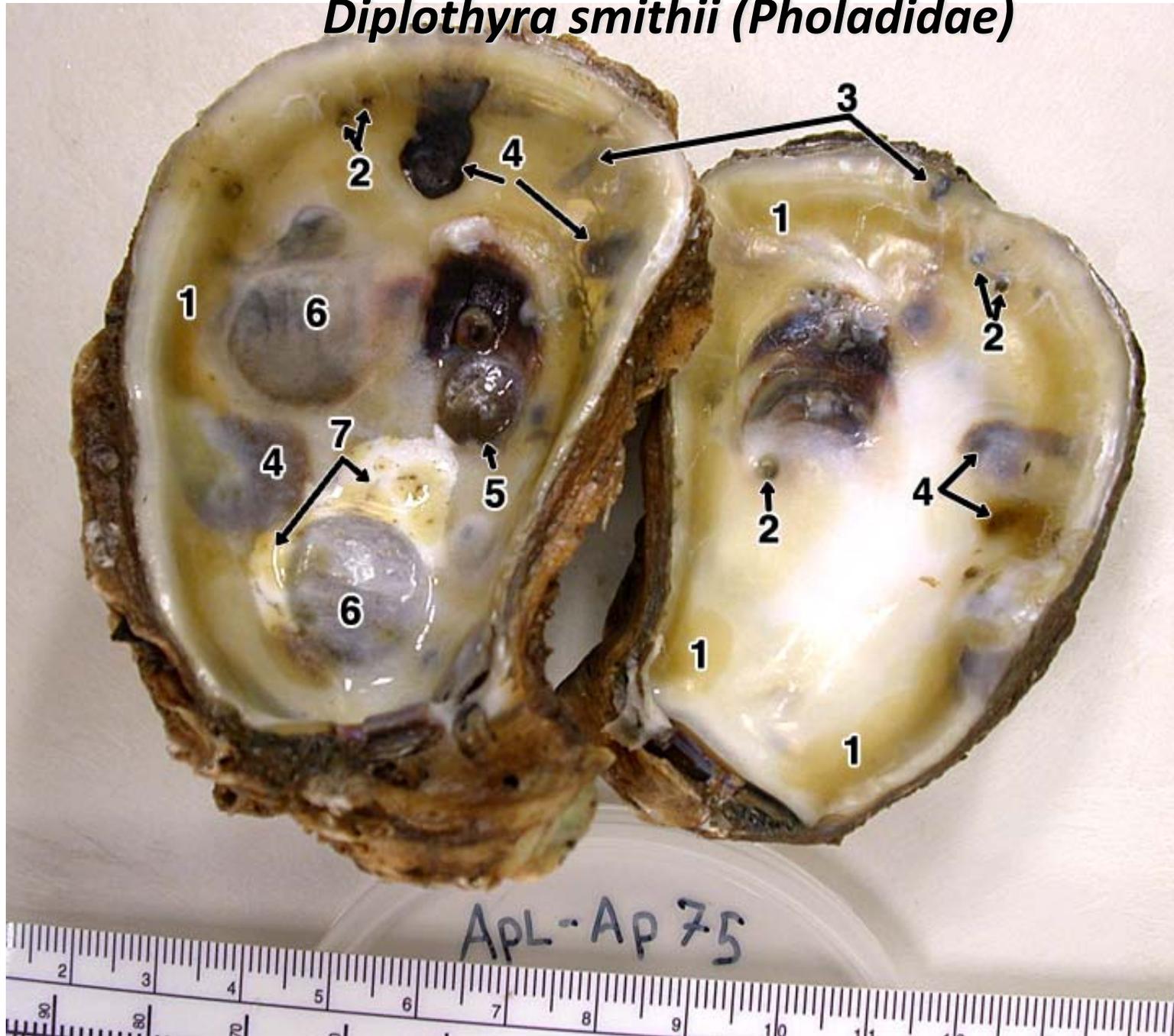




# AP Oyster Condition Index



*Diplothyra smithii* (Pholadidae)





## Water Quality & Flow

**USGS WaterWatch**

Duration hydrograph of daily average streamflow for USGS 02358000  
(Drainage Area: 17200.00 square miles, Length of Record: 89 years)

