

FWC Response To Environmental Events



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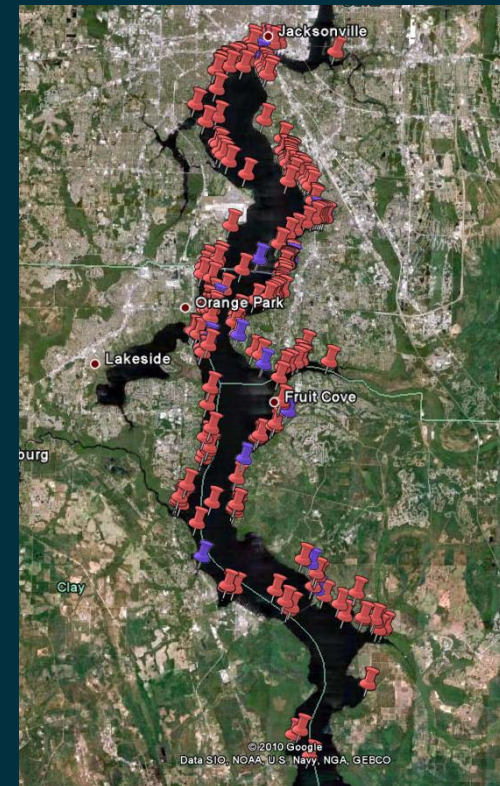
Types of events FWC responds to:

- FWC is responsible for all fish and wildlife in Florida
- FWC will respond to natural and anthropogenic events that impact resources under FWC's jurisdiction
- FWC will also provide assistance in case of extreme natural (hurricanes) and man-made disasters (oil spills/toxic chemical spills)
- **Aquatic fish kills and harmful algal bloom events**, the FWRI Fish and Wildlife Health (FWH) and Harmful Algal Bloom (HAB) groups respond to aquatic animal disease, mortality, and HAB events; Fisheries-Independent Monitoring (FIM) program will aid in response as needed

The typical response for FWC:

- Contacted about fish and wildlife disease and mortality events:

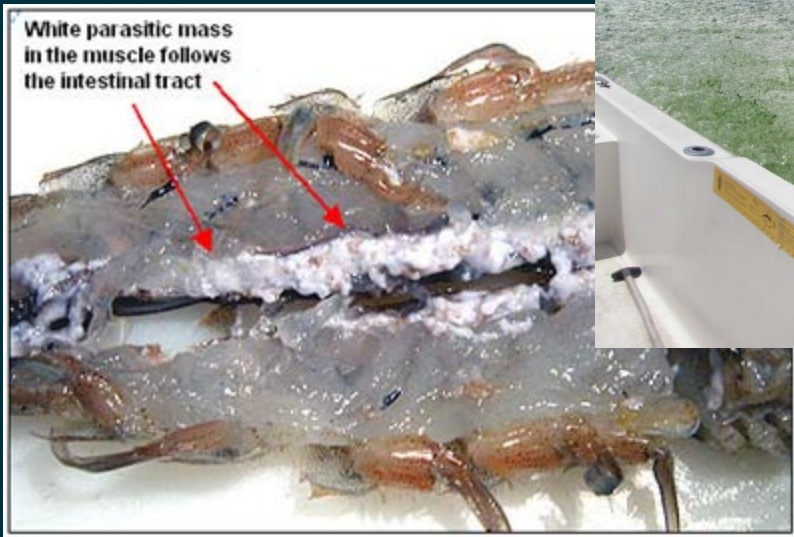
FWC Staff
Outside Agency
Public



>300 Reports to Fish Kill Hotline from end of May 2010 to end of June 2010

The typical response for FWC:

- Once FWRI is aware of a fish kill or diseased animals, we investigate or work with partners to obtain water quality and environmental data, water samples for detection of algal blooms and toxins, and moribund animals to conduct diagnostic tests.



The typical response for FWC:

- Once our researchers perform their analysis, information is shared with other agencies particularly if there is a potential human health concern.
- Reports regarding federally managed species (marine mammals and sea turtles), the responsible groups within FWRI coordinate a response with federal agencies charged with overseeing those species.



What are FWC's capabilities?

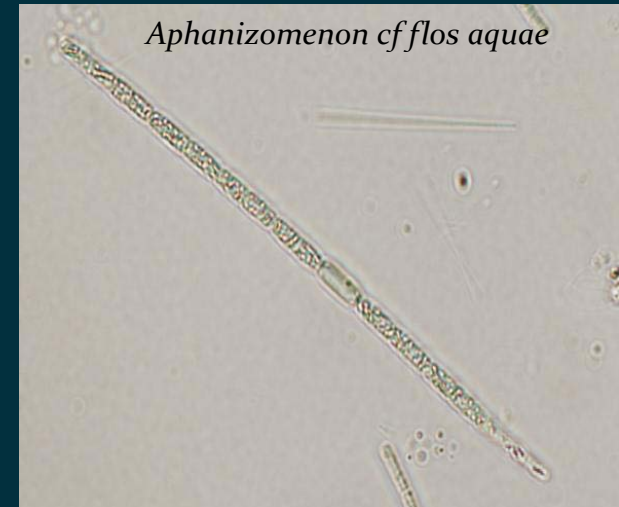
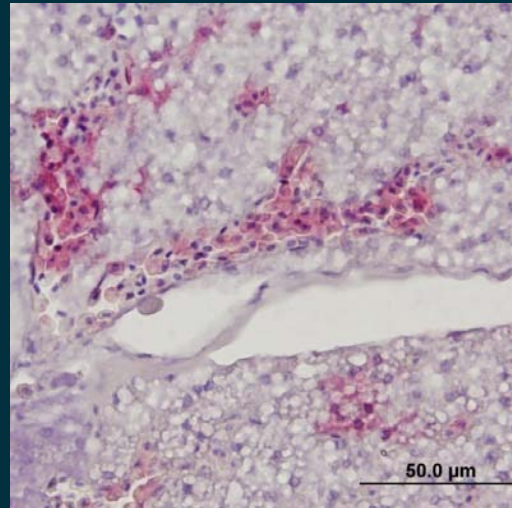
- Fisheries-Independent Monitoring has crews on the water approximately 10-15 sampling days/month and can readily collect samples that are needed by FWRI or other agencies



- Historical fisheries databases (2001 – present) can be used for analysis of data “after-the-fact” to try and understand impacts

What are FWC's capabilities?

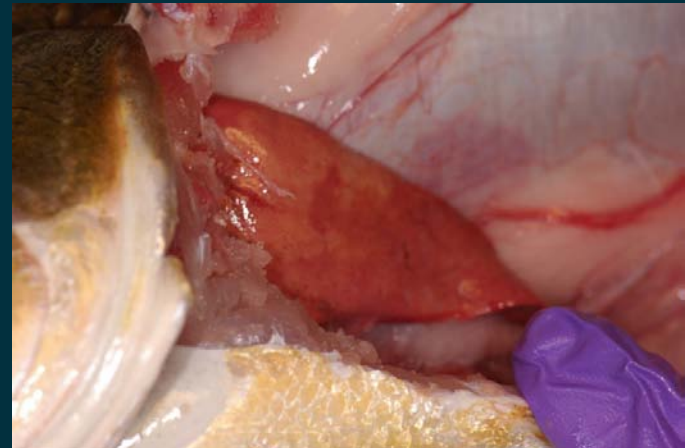
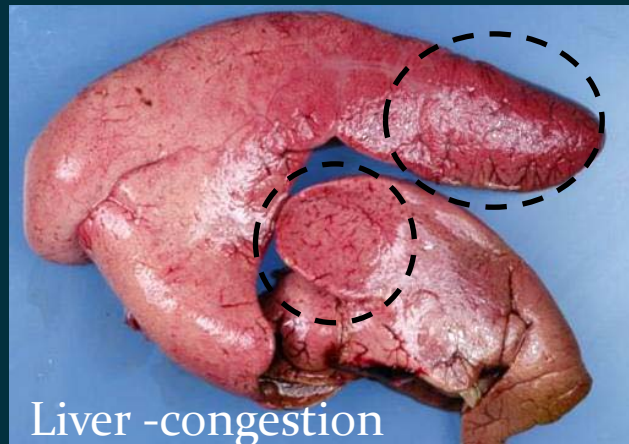
- The FWH and HAB groups have expertise in light and electron microscopy; phytoplankton identifications, bio-toxin analysis; nutrient analyses, and animal health diagnostics (e.g. parasitology; microbiology; and histopathology)



- Availability to many other groups within FWRI that can give specific expertise when needed (Crustacean Fisheries, Molluscan Fisheries, Center for Spatial Analysis)

What services does FWC provide?

- FWRI provides assistance with understanding the causes of fish and wildlife kills and disease by utilizing the specific tools / expertise just referred to



What actions were taken during the events of 2010 by your organization that you feel should be the responsibility of a different organization:

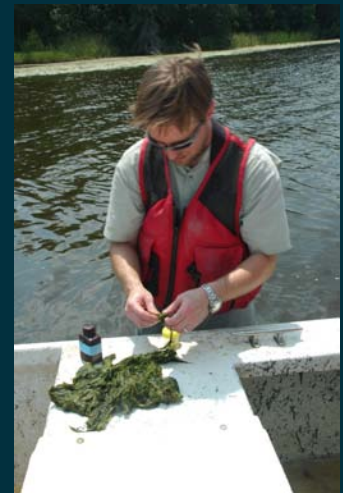
- Groups/agencies have referred human health concerns to us in the past. FWC refers all these concerns to the Department of Health.



- Municipalities will occasionally refer people to us regarding clean-up of dead animals.

Frequency, location, and parameters for sampling related to environmental events:

- This is contingent on type and magnitude of event and spatial and temporal coverage required.
- Attempts are made to take samples of all impacted fish and wildlife species in fresh or moribund condition, pertinent environmental data and samples for testing (e.g. contaminants, toxins, bacteria) as appropriate.



Coordination with other agencies

- FWC has an extensive network of internal and external partners that we are able to call to coordinate a response, utilize for additional diagnostic tests, and obtain expertise on specific species pathology.
 - Contaminants (pesticides, PAHs, PCBs, heavy metals, etc.) we have collaborated with DEP (as well as many others) to pinpoint causes
 - FWH covers a broad range of species from corals to panthers to birds to amphibians to fish.
 - Pathology partners include University of Florida; National Wildlife Health Center (Madison, WI); Southeastern Cooperative Wildlife Disease Study (Univ. GA).

Coordination with other agencies

- For the SJR:
 - Internal groups: Fisheries Independent Monitoring, Freshwater Fisheries Research, FWC Law Enforcement, Harmful Algal Bloom group, and Fish and Wildlife Health group
 - State and federal agencies: DEP, DOH, SJRWMD, NOAA, the City of Jacksonville, and St. Johns County
 - Universities: Jacksonville University and University of North Florida
 - St. John's Riverkeeper