

MINUTES
HARMFUL ALGAL BLOOM WORKGROUP
June 10, 2009
10:00am – 2:00pm

Carlos Truan Natural Resources Center Room 2010
Texas A&M University-Corpus Christi

In attendance were Tracy Villareal (UTMSI), Barbara Dorf (TPWD), Cindy Contreras (TPWD), Christine Kolbe (TCEQ), Erin Hill (TAMU-CC Center for Coastal Studies), Jackie Skaggs (TPWD), Janet Nelson (TPWD), and Meridith Byrd (TPWD). Attending via phone were Luci Cook-Hildreth (TPWD) and Winston Denton (TPWD)

Ciguatera presentation, Tracy Villareal

Tracy Villareal gave a presentation on Ciguatera in the Northern Gulf of Mexico. The ciguatoxin (CTX) can bioaccumulate up the food web and cause Ciguatera Fish Poisoning (CFP) in people who consume affected fish. Though it is historically tied to island complexes rather than continental shelves, this is not the case in the Gulf, where the species has been found on oil platforms and *Sargassum*. Cases of CFP can be hard to diagnose and individual fish are hard to track. Evidence is pointing to possible local food web accumulations of ciguatoxin.

Ciguatera discussion

Following the presentation the group discussed the Texas situation and what, if anything, needs to be done at this point. One suggestion was to ask the TPWD Environmental Contaminants Lab in San Marcos if they would look into the ability to detect ciguatoxin. It was pointed out that this could be a daunting task, as ciguatoxin is the most complex toxin and the standards are only available through Bob Dickey at the FDA. Lab staff would need to be trained in mass spectrometry by Dickey.

All Texas CFP cases have come outside Texas territorial seas. Charter fishing captains might already have an awareness of CFP, as some have been telling customers for years not to eat big barracuda.

Andy Reich called in to give an update on Florida's Ciguatera efforts. He said that Florida has been dealing with CFP for many years and that it is by state statute a required reportable disease. CFP is very hard to diagnose, as there is no particular test for it, so it is likely often misdiagnosed or not-diagnosed. Florida usually has 12 or so CFP cases yearly; to be reported a patient must have the classic symptoms as well as documented ingestion of tropical reef fish. There has been a recent rise in reported cases, though officials are not sure if this is due to awareness or better diagnoses. Florida had 50 reported cases last year (mostly from the Keys). Many people can be sickened by the same fish. Florida is working with the FDA to get samples of fish to be tested for CTX, so their message is now "if you have a fish, give it to us." The FL Aquatic Toxins Hotline is a very good resource, employing people specially trained on HAB-related illness. Those who call the hotline are told to hold on to the suspect fish and not throw it out.

Florida is working with Bob Dickey to export his technology for CTX analysis to labs in their state so that they can do analysis for their reported cases. Most CFP cases are in Miami and Palm Beach County and most cases are from recreational harvesting. There is a real need for outreach in tropical Florida. The Cuban population likes to eat high-risk fish so they are targeting outreach to this community. Materials have been developed to be distributed through county health departments and similar information is available on the [Florida DOH website](#).

Tracy asked how the fishing community has responded to Florida's outreach efforts and how the issue is put into perspective for the St. Pete area v. the Key West area. Andy responded that they are careful not to make "a mountain out of a molehill" and don't want to scare people off eating fish, but they haven't received much feedback yet. It is hard to communicate that CFP is fairly rare but can have serious health implications. However, the local fishing communities do not seem to care because the risk is low compared to total amount of fish sold.

Mannitol can be given via IV to treat CFP if caught early, otherwise the only other treatment is for the symptoms. Many people recover fairly quickly, but some symptoms can take a year or more to subside and can recur.

Tracy asked how to measure the effectiveness of outreach materials. Andy suggested the following:

- better understanding of CFP by health care providers
- awareness among fishing community of which fish are at risk
- long-term goal: in 10 years be able to ID reefs with highest potential for *Gambierdiscus toxicus* and get people to avoid those reefs
- fluctuations in number of CFP cases is *not* a measure because so few cases are reported anyway

There is no financial support for large-scale outreach efforts, so the only media announcements are via the web. Webcasts have been developed for MDs through the University of Miami. Florida is revising their MERLIN epidemiology surveillance system to include long-term CFP followup.

A suggested first step for Texas is to get CFP listed as a reportable disease and to possibly enlist Lorrie Backer of the CDC for assistance. Perhaps all Gulf states and, Mexico, if possible, should pursue the listing of CFP.

The TPWD HAB website needs to be changed to include the following:

- break out Ciguatera into its own page
- include Florida's Aquatic Toxin hotline number
- links to the Flower Gardens FDA advisory
- Cite Texas literature
- link to Florida and other CFP sites
- include PDF fact sheets: Dinophysis, CFP, etc
- link to Sea Grant's Vibrio fact card

Updates

Bloom Updates

Golden alga has caused no fish kills since March. In the Red River basin, Lake Diversion and Lake Baylor have both had low cell counts and no toxicity. Lake Childress had high cell counts but the water has not been toxic; cell counts dropped during the last week of May. Possum Kingdom (Brazos basin) had slightly toxic water during April and May; toxicity dropped to zero by June. The Pecos River at Coynosa (Rio Grande basin) had moderate cell counts & toxicity in April but no fish kills. The Colorado River at Colorado City, Moss Creek and Lake E.V. Spence had highly toxic water but no fish kills in March. By April the cell counts at these sites were moderate. Colorado City had both high counts and toxicity in May.

Dan Roelke e-mailed an additional Brazos River update to Meridith, saying that *P. parvum* continues to be present in Lakes Granbury, Whitney and Waco. Toxic waters have been found near the Whitney and Granbury dams.

Chris Kolbe visited the Rio Grande area in March and reported her findings to the group. Conductivities at Black Gap were around 2000, the benthics were very diverse and the water was light green. Upstream at Santa Elena Canyon the water was very dark with conductivity at 3700. Large numbers of black fly larvae were seen. Chris went to Lajitas in May and found a fish kill that followed to spike in flow (14,000 cfs) and spike in conductivity. River carpsucker and freshwater drum were seen with blood oozing from their head, opercum, and fins. Chris wondered if it might be golden alga-related and contacted Stephen Twidwell, who said there was no way to tell without cell counts. If the same thing happens again next year Chris will ask the National Park Service to collect a water sample.

The TPWD Golden Alga Task Force (GATF) met May 4 to discuss the expansion/reorganization of the group in the wake of January's Symposium. The GATF hopes to include a wider variety of TPWD staff (fisheries biologists, etc) and include non-TPWD staff, such as researchers and staff of other agencies, as well. The group has been working on a reprioritization of research needs and aims to have an RFP out by the end of June. The GATF met again yesterday to put together a list of selection criteria for funding proposals, including special projects of interest.

There have been a couple of *Trichodesmium* sp. blooms along the lower coast.

Other Updates

NOAA HAB Program regional rotation

Regional Group	Geographic Regions	Year 1	Year 2	Year 3
1	Gulf of Mexico, Caribbean/Pacific Islands	MERHAB	ECOHAB	PCM HAB
2	West Coast, Alaska, Great Lakes	ECOHAB	PCM HAB	MERHAB
3	South Atlantic, Mid-Atlantic, Gulf of Maine	PCM HAB	MERHAB	ECOHAB

For more information about the NOAA HAB programs, go to <http://www.cop.noaa.gov/stressors/extremeevents/hab/welcome.html>

Quay Dortch, NOAA ECOHAB coordinator called in to give an update on NOAA's HAB funding programs including the new PCMHAB: Prevention, Control and Mitigation of HABs. The ECOHAB and MERHAB programs provide national HAB research funding. ECOHAB funds projects to improve the understanding of HAB ecology, to develop tools, models, and prevention strategies, and to understand toxins. MERHAB funds research in local governments and in the private sector. Both programs are competitive and proposals go out for peer-review. Ultimately about 10% of submitted proposals get funded. PCMHAB will be competitive and peer-reviewed for the development, demonstration and transfer of HAB knowledge. Quay will send Meridith the PDF of the federal register that includes the funding announcement.

NOAA will rotate the 3 programs around the country, so each region is only eligible for one program per year. The RFP will come out later this year; NOAA will be requesting letters of intent, which can be a brief description via e-mail, to be due 1 month after the RFP is announced. NOAA will respond within 2 weeks to advise authors on the applicability of their submitted proposal. NOAA will accept proposals even if the letter of intent is rejected, but suggests authors try to make their research fit the funding program. The Federal Register notice defines exactly what kinds of modeling & method development fit into which program to avoid confusion. Event response funding isn't competitive and will not go away. All 3 programs require the project to have a management or end-user application. Quay suggests authors call and talk to funding program managers about tailoring projects to the particular program.

NOAA Phytoplankton Monitoring Network (PMN) – Jeff Paternoster, Program Coordinator

The PMN is part of the NOAA Marine Biotoxins group. Volunteers range from scientists to teachers to laypeople. Texas currently has 20 active monitoring sites: Galveston (3), Lake Jackson (3), Matagorda (3), Port O'Connor (2), Corpus Christi area (7) and South Padre Island (2). This core group of samplers has been whittled down from the original number of 35. Jeff tries to visit all his volunteers yearly and plans to make a trip to Texas in August to meet individually with volunteers, practice ID, visit sampling sites, and update equipment. (Update: Jeff has since found out that he does not have any more travel funds for 2009.)

Jeff reports that a second toxic *Pseudo-nitzschia delicatissima* bloom was found this year at Port O'Connor containing 16ng of domoic acid/ml. Drum Bay had a similar but nontoxic bloom occurring at the same time. This same species bloomed in October 2007 at the Port O'Connor fishing pier with 22ng of domoic acid. Steve Morton of the PMN is working on paper on domoic acid in the Gulf of Mexico that may or may not include Texas. Jeff will let Steve know that we would like Texas included in the paper.

Jeff is happy with the caliber of the Texas volunteers, who are good at identification and want advanced trainings and more knowledge. He likes to mine the Master Naturalist groups for volunteers and even targeted Florida Master Naturalists when the PMN branched into the Florida panhandle. Since 2008 the PMN has offered more web-based verification of plankton species. Steve Morton can use his SEM online, so volunteers can see the ID as it happens.

TPWD Kills and Spills Biologist

Melissa Tidmore was recently hired as a Kills and Spills biologist in Waco. She replaces Joan Glass who retired in February. Prior to TPWD Melissa worked for TCEQ in the water quality program.

Advising the Public on Eating Fish During Red Tides

At the March meeting Tracy informed the group of new research that suggests brevetoxin does accumulate in the tissues of fish (rather than only in the gut.) The question was posed to the group of whether the public should still be advised to eat healthy fish caught during red tides. Meredith contacted Cindy Heil (FWRI) and Andy Reich (Florida DOH) and both said that Florida continues to advise the public that fish fillets are okay to eat if the fish was behaving normally (i.e. doesn't seem sick) when caught.

Red Tide Coordination Meeting

Meridith discussed putting together a red tide coordination meeting to include all agencies and entities who may respond or otherwise need to be kept up to date in the event of a bloom. The group suggested a list of invitees; Meredith will put together a Doodle poll to come up with a meeting date.

Suggested agenda items:

- Fixed stations along the coast?
- Who would be handling fish kills, other monitoring
- Who should receive data
- Review of HAB Response Plan (send in advance)
- How to get information to public – new avenues to pursue?
- Red tide card distribution
- Overflights

Action items

1. Meredith will contact the TPWD Environmental Contaminants Lab in San Marcos regarding their ability to detect ciguatoxin.
2. Meredith will put together a Doodle poll to come up with a date for the red tide coordination meeting.
3. Meredith will contact Quay Dortch to get a copy of the PDF of the federal register with the NOAA HAB funding announcement.
4. Meredith will contact Lorrie Backer and Kirk Wiles to talk about getting CFP listed as a reportable disease.

Next meeting

Thursday, Sept 10

TAMU College Station

Lisa Campbell, guest speaker