

MINUTES
HARMFUL ALGAL BLOOM WORKGROUP
September 13, 2007
10:00 a.m. – 12:15 p.m.

TPWD Freshwater Resources Building, San Marcos

Attending the meeting were Dave Sager, Meridith Byrd, Joan Glass, Janet Nelson, Steve Twidwell, Cindy Contreras (TPWD), David Villarreal (TDA), Cheryl Gilpin (consultant), Joe Stinus (NOAA-Austin), Dewayne Hollin (Sea Grant), Mimi Wallace (USGS). Attending by phone were Rebecca Love (NOAA-Charleston, SC), Lythia Metzmeier (TCEQ) and Lisa Campbell (TAMU).

Updates:

Bloom Updates

On Friday, August 31, TPWD received a report of discolored water approximately one mile offshore of Mustang Island. The water sample was found to contain *A. sanguinea* and no fish kills or other impacts have been observed. Over the same weekend a large fish kill including gulf menhaden, silver perch, star drum, Atlantic bumper, hardhead catfish, gafftopsail catfish, and Atlantic cutlassfish was reported on Bolivar Peninsula. Water samples confirmed a bloom of *A. sanguinea*. Biologists also saw a bloom inside the Galveston jetties at the intersection with the Galveston Ship Channel. Two additional reports were received of dead gulf menhaden on the bay side of Rollover Pass and in the Gulf Intracoastal Waterway. On Thursday, Sept 6 NOAA sent a satellite image to Meridith Byrd and Tracy Villarreal showing a large swath of high chlorophyll stretching along Padre Island and into Mexico. No fish kills or other effects were reported.

Also on Friday, August 31 TPWD Kills and Spills biologist Alex Nunez responded to a report of a fish kill in the lower Laguna Madre. Samples taken between Port Mansfield and the Arroyo Colorado appeared to be dominated by *Rhizosolenia* sp.

Joan reported that Possum Kingdom Reservoir water was to be used to test a control method of *P. parvum*, but that conductivities were so low (~400) that no *P. parvum* could be cultured. The next step is to collect some water from the reservoir and bring its conductivity up to the range seen last year (~6000) and then culture the *P. parvum*.

Golden Alga Fact Card

Chris Kolbe (TCEQ) has submitted to job to the printer and the 100,000 cards are due to be finished near the end of the month. Once they are available an announcement will be sent to TexHAB.

HABSOS

Meridith has been in contact with HABSOS' Jason Stradtner, who offered his group's services to enter the Texas *K. brevis* bloom data from 2005 and 2006 into the database. Meridith promptly sent the 2005 data to him and will send 2006 once they are finished with 2005. Meridith has recently been asked about the possibility of entering volunteer Phytoplankton Monitoring Network data into HABSOS in the

event of a *K. brevis* bloom and that is something that the HABSOS folks are in support of. Joe Stinus asked if expanding the database to include all phytoplankton would be useful and the group agreed. He pointed out that a long-term goal is to create one comprehensive database for all Gulf of Mexico phytoplankton blooms. Similar databases are in the works for hypoxia and mercury.

Golden Alga State Wildlife Grant (SWG) Pre-proposals

TPWD is meeting tomorrow to discuss the proposals that will be funded with SWG money. Projects include toxin work, genetic analysis, a continuing of earlier work using clay flocculants, a study of pre-bloom conditions, use of circulation equipment on hatchery ponds, and continuation of the multiuniversity consortium studies.

TPWD Golden Alga Workshop

TPWD hosted an international Golden Alga Researchers' Workshop in 2003. At that time the goal was to gather all the researchers who were currently working or had previously worked on *P. parvum* to provide a starting point from which Texas research should and could begin. Plans are underway to host a second workshop in early 2009. The goal of this workshop is to continue building upon the research that has been done and to help guide where any new research funds should be spent. Invited speakers will present their research and a large poster session is planned as well. Date and location have yet to be determined.

David V. asked whether *P. parvum* can be considered an invasive species, but with *P. parvum*'s worldwide distribution it is almost impossible to answer. Mimi asked when the first bloom was confirmed in Texas, which was in 1985 along the Pecos River. Cheryl asked about the possibility of analyzing old NES (USGS study) samples, but it is virtually impossible because distinguishing characteristics of the cells disappear pretty quickly. However, the work that John LaClaire is doing in the field of DNA might make analysis of old samples feasible in the future.

Other Updates

Meridith received an e-mail regarding a fish kill off Sabine Pass reported by a recreational fisherman. On Tuesday Sept 11, he and his father observed hundreds of dead, floating bull reds along the current line, about 1 mile west of the Sabine Pass west jetty and about 2 miles off the beach. When asked to quantify hundreds the man said that they "could see white bellies of bull reds all along the current line as far as we could see in both directions." The man noted that lots of bait fish were active in the area as well as one shrimp boat, but he did not see a menhaden boat. Lisa pointed out that the large influx of freshwater might be a factor in the kill.

And last but not least, TPWD's Golden Alga Staff Coordinator Liz Singhurst had a baby girl, Ava Jean, on August 29. She is at home on maternity leave.

TPWD HAB ID Workshop

Meridith was granted the use of \$15,000 from TPWD restitution funds to host a 3-day HAB taxonomy workshop similar to one she and Cheryl attended in Florida in June. Participation will be limited to roughly 15 and will be offered to TPWD response biologists first, with other agencies offered 1-2 spots each as well. Tracy offered UTMSI

as a possible host site but does not have enough microscopes for each person. Lisa suggested looking into borrowing or renting scopes but also offered TAMU as a host site, noting that she might be able to go around the biology department and round up enough scopes for everyone. Lythia noted that some people might be able to bring their own scopes as well. Lisa suggested looking at UT's culture collection as a source. Cheryl suggested a number of people who might be interested in teaching the portion on cyanobacteria. The workshop will occur next year, though no specific date has been confirmed. Meridith will continue to plan the workshop and send out details as they become available.

Lisa Campbell, TAMU

Rob Wilson of WHOI has developed an [Imaging Flow CytoBot](#) in cooperation with Lisa. The IFCB, which is 40 inches tall and 12-15 inches in diameter, was deployed on Tuesday, Sept 1 at UTMSI's pier on the Corpus Christi Ship Channel, which is part of the Mission-Aransas National Estuarine Research Reserve (MANERR). Photos are shown at the above link.

The goal of the project is to quantify plankton in the water using flow cytometry in near real-time. All optics and electronics are housed inside the IFCB. Lisa can stop and start the equipment, as well as load data, remotely. 15 mL of water is analyzed per hour. Organisms pass by a laser causing those with chlorophyll to fluoresce; fluorescent cells will trigger a camera to take a photo. An automated classifier program IDs the cells down to genera. Knowing the volume of water analyzed allows the IFCB to compute concentrations of cells. Although this was developed as an early-warning tool for *Karenia brevis*, it will also be used to look at phytoplankton community structure. The image quality is very good and the process allows fragile cells such as ciliates and flagellates to remain in good shape for identification. The IFCB can perform size-scattering but this ability is not used since phytoplankton is the focus. Because of the large influx of freshwater into the system, Ed Buskey of MANERR reports much less fouling than expected on his equipment, so Lisa hopes this will be the same for her IFCB. Right now the IFCB costs about \$50,000 to make and flow cytometry companies are being approached to gauge their interest in building them. With 26 NERR sites nationwide there could be a market if this prototype is successful.

Karenia brevis Monitoring by Charter Boats

As their presentation at the March 2006 TexHAB meeting indicated, Lisa and Rob Hetland (also of TAMU) hypothesize that downwelling winds concentrate *K. brevis* along the Texas coast. The next step in confirming Rob's model is to collect random samples offshore to 20 km from July through September 2008. Lisa is submitting an ECOHAB proposal for funds to allow for monitoring by volunteers, charter boat operators, and/or agency biologists. Meridith will approach TPWD Coastal Fisheries offices to ask if they will take water samples during their offshore trips. All sampling equipment would be provided and live samples would be shipped overnight to Lisa at no cost to the sampler. Dewayne suggested talking to marina harbormasters for contacts, and David added that TDA could provide contacts as well as sending out a call for volunteers in a publication. David also said that contacting TSCC's Fish Advisory Subcommittee might be of use as well.

Texas HAB Response Plan

The purpose of this plan is to distribute to agencies and entities, especially those who might not routinely deal with HABs, so that it can guide them if they do happen upon a bloom.

Changes suggested:

- Update Appendix A (Kills and Spills staff list).
- Find replacement for Dr. Carmichael (contact for blue-green confirmation) who is retiring. Cheryl suggested a number of possibilities.
- Add wording suggesting the use of beta iodine (store-bought medicinal iodine) if Lugol's cannot be obtained.
- Add the word "iodine" after each reference to Lugol's.
- Specify that samples should not be put on ice and should be kept in the dark.
- Pfiesteria section: Meridith will confirm with UNC that these procedures are still correct.
- Appendix B: Meridith will check with Kirk Wiles whether this is still the most current version.
- Appendix C will be removed or replaced if the new contact for blue-green confirmation has a specific submission form.
- Appendix D: specify the use of buffered rather than acidic Lugol's.
- Add photos of blooms and cells.
- Add physical descriptions of blooms, foaming, irritation, etc.
- Recommend the use of gloves when sampling.

Dewayne brought 3 handouts: a Texas hurricane survival guide (not available on the web), a [NOAA Extreme Weather Info Sheet](#) for Texas, and an info card on [Vibrio vulnificus](#). Contact Dewayne (dhollin@neo.tamu.edu) if you are interested in any of the items.

Action Items

1. Meridith will approach TPWD Coastal Fisheries offices to ask if they will take water samples during their offshore trips.
2. Meridith will make the suggested changes to the HAB Response Plan and send it out to the group for comments before making it final.

Next Meeting

The next TexHAB meeting will be held Thursday, December 6 in the Corpus Christi area.