DeZoZoo Workshop

December 6-7, 2012
Horn Point Laboratory

Attendees

Decker, Mary Beth	Jahn, Ginger	Pierson, Jamie
Elliott, David	Liu, Katherine	Roman, Mike
Houde, Ed	McGinnis, Sean	Stoecker, Diane

Objectives

The purpose of the meeting was to discuss DeZoZoo and make a plan to synthesize the data, with the hope that at the end we have a couple of products and deadlines, including:
1. Tentative list of papers with associated authors
2. Discuss possible special-volume or other coordinated effort
3. Deadlines for those papers
4. Input and feedback about a database we'll be putting together (more on that later)

Outcomes

1. Major Findings
   A short list of some of the major findings was developed at the end of the meeting, including the following ideas and thoughts:
   a. 2010 was a fairly dry year, whereas 2011 was a fairly wet year
   b. 2010 was mildly hypoxic, whereas 2011 was strongly anoxic for a large portion of the summer
   c. Phytoplankton differed between the stations and over seasonal cycles. Specifically, *Karlodinium* was observed more at the northern (hypoxic) station, whereas *Prorocentrum micans* was more abundant at the southern (oxic) station.
   d. There may have been a seasonal shift from autotrophic to heterotrophic biomass, with peak autotrophic biomass in spring.
   e. The "blue hole" of zooplankton was confirmed – lower abundance of *A. tonsa* was observed in summer than in spring and autumn.
   f. Ctenophores were much more abundant than sea nettles. Also, the year with lower river flow had higher ctenophore abundance, perhaps contrary to what might be expected from previous work.
   g. Positive relationships were seen between dissolved oxygen concentration and larvae abundance. Weaker relationships were seen for eggs, but they often existed. Anchovy guts were dominated by *A. tonsa* and invertebrate eggs, but during periods with bottom water anoxia there were also "worms" found in the guts, likely similar to the polychaetes observed zooplankton samples.

2. Papers
   Potential papers were discussed and a number of potential topics were discussed
   including:
   - Broad patterns in biomass to look at food web structure at our stations for
     our years (Stoecker proposed it, Pierson to lead it, everyone to contribute)
   - P_{crit} paper (Elliott, submitted to PLOS One)
   - Neutral Red and non-predatory mortality of copepods (Elliott)
   - Z-Traps data and migration behavior of *Acartia* (Barba)
   - Nauplii and Egg distribution and mortality (Roman)
   - Ctenophore and Sea Nettle gut contents, compared to fish gut contents to
     explore hypoxia effects on competition between fish and gelatinous
     zooplankton (Liu, Decker, Houde)[*]
   - Grazing of copepods (Stoecker)

3. Database
   Sean McGinnis, HPL data management expert, presented an example of another
   database he is currently developing, which will be relational and have a web front
   end. We will prepare our data and Jamie will work with Sean to get the data into the
   database. Accessibility will be limited initially but we can work around it.

Expectations
1. Data dictionary and definition of layers
   Data were collected on various vertical frequencies, and we will first define the
   depths that account for various layers. Generally speaking we will use the following
   terms:

   > Above pycnocline
   > Pycnocline
   > Below pycnocline

   Jamie will work with the data to better define those terms and even categorize
   specific CTD bottles and nets for those layers.

2. Standardization of some data visualization formats
   There was agreement that certain means of presenting data were more helpful than
   others, in particular from Katherine's data on Jelly abundance. We will develop some
   specific guidelines for some of the data types so that they can be presented and
   easily compared.

3. Data will be continue to be processed and prepared for inclusion in the database
   that will be developed for the whole project.

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[*] Part of this discussion occurred at the end of the meeting between Pierson, Decker, and
Liu, and is proposed here to be part of the Liu dissertation, to make best possible use out of
fish and gelatinous zooplankton data.