**Cook Inlet Modeling Working Group**

**July 22nd Telecon**

*Notes by Darcy Dugan*

Participants: Molly McCammon, Gaurav Singhal, Kris Holderied, Jim Nelson, Angie Doroff, Megan Murphy, Bob Jensen, Carl Schoch, Brett Jokela, Peter Olsson, Darcy Dugan, David Oliver

**Bathymetry**: Kris Holderied provided an update on the effort to pull together the best bathymetry for Cook Inlet. The reasoning behind this effort is to provide a consistent bathymetry grid to modelers so they have the ability to work with data consistent with their peers. On NOAA’s Coast Survey site, only surveys through 2004 are visible, but there are several others that exist. The 2008 NOAA survey will be available sometime in the next month and the 2009 surveys are currently being processed by NOAA’s hydrographic branch.

A lot of new data will be made available that models are not currently using. The 2008 survey is mostly a repeat (update) of the 2004 survey.

*Who will use the updated grid?* Gaurav Singhal is currently using the tsunami inundation DEM, and Kris said she’d look to see if this included the 2004 NOAA survey data. It was mentioned that Rich Patchen will probably need the new bathymetry for his circulation model. Bob Jensen at USACE will check to see if Ray Chapman would also use the new grid. The upper inlet holds the most interest for wave modelers – Turnagain Arm and Knik Arm where there is very little bathymetry. The lower inlet will be more straight forward.

Right now it is unclear how much it will cost to assimilate the bathymetry. At present, we have a graphic of survey coverage, and a spreadsheet with the status of the various Cook Inlet surveys. Molly McCammon will talk to CIRCAC about potentially providing some funding for this effort, and Kris will talk to Rich Patchen. We could also ask Margaret Spahn at ADFG if she could compile the data, as she has done this type of work previously. Darcy Dugan will talk to Terrasond and Fugro about what other surveys are available, and potential cost estimates for compiling and gridding the data.

David Oliver of Terrasond arrived after the bathymetry portion of the telecon, but has other non-NOAA surveys (though geographically-limited). He is interested in being the entity to compile the surveys into one grid. More information on this will be distributed in a forthcoming email.

**NOAA’s Circulation Model**

Rich Patchen, the lead for NOAA’s new circulation modeling effort in Cook Inlet, was not available but provided some updates through Darcy. Rich’s model will be a hindcast based off 2000-2005 data when NOS was conducting surveys. He is currently looking for boundary conditions during that time period to run the model. The information he is most interested in is:

* + What fields to use
  + Incorporating the weather forecast model, collaborating with Peter Olsson at AEFF
  + Historical river data
  + Water level data. (They have some but it is limited. They are looking for data in addition to that from NOS)
  + Scott Pegau’s CTD data, to be used for validation

Rich also wanted to note that the ADCP’s they are deploying have bottom pressure sensors. This was a bonus they had not anticipated.

Rich is interested in talking with anyone that has data on the items above. There were suggestions during the discussion that he should contact Terrasond or Fugro about additional water level data. Also, Dave Aldridge is collecting water level data for ADFG using ADCPs in the Chugach Islands near the entrance to Cook Inlet, but his instruments would likely only be in the water for 10 days. Kris Holderied noted it would be very helpful to have them in the water for 35 days, but it would require funding to pick them up. There was some brainstorming about which boats might be available to do that – perhaps the Pandalus or Tiglax. Molly offered to contact them and ask. If that doesn’t work out, there will be many boats enroute to Seward and Seattle in early October, and its possible one could help opportunistically.

Additional water depth measurements are also available through the Kachemak Bay Research Reserve (KBERR), and potentially through contractors for Pebble Mine on the other side of the inlet. They may not be as precise as the NOS data.

*Update on Kachemak Bay Instrumentation*

Rich Patchen and NOAA were working with the City of Homer on a renewable energy contract whose funding was reduced by the governor. As part of the contract, the plan included implementing a high-resolution nested grid in Kachemak Bay. Despite limited funding, they are still pushing hard to get the high-res model up with the Kachemak Bay domain but are lacking the data to do it. Rich talked to Laura Rear at COOPS to see what suite of instruments would be best and how much they would cost (HF radar, ADCPs). After getting the cost estimate, they will attempt to leverage get funds from COOPS to purchase the instruments. They have good data for the rest of CI, just not Kachemak Bay data, to validate the model.

*Time Period with Best Data to Run the Model*

Rich had talked earlier about trying to organize a time when the hindcast model could be run, taking advantage of the most corresponding data. Peter Olsson has weather data for 2002 onward but it is not a trivial task to extract the data, and he would like a specific window. Gaurav noted that May-Aug 2005 might be optimal since there were 16 or 17 active current meters operating.

**Cook Inlet Datasets for Historical Database**

One of the subgroup tasks as an outcome of the March 2010 Cook Inlet Modeling Workshop was to identify and assemble historical Cook Inlet datasets. This effort has begun, and will eventually be housed on the AOOS website. A spreadsheet is attached of datasets that have been identified so far. Please look through this document and email Darcy at [dugan@aoos.org](mailto:dugan@aoos.org) with any additions or changes.

This fall, the working group will discuss what datasets AOOS should archive themselves vs. provide links to the current location. Top priorities will be datasets that are not currently in a sustainable or safe location. Brett Jokela with the Municipality of Anchorage noted that the Muni has datasets they will try to extract from their contractors (including bathymetry for wetting/drying).

**New Wave Buoy Update**

Carl Schoch provided an update on the new WaveRider buoy funded by AOOS that will be placed in Cook Inlet this spring. WaveRiders don’t do well with high currents, so it will replace the NDBC buoy off Anchor Point. Deployment will be in April 2011 to avoid the risk of losing it in rough winter conditions. The buoy will strictly measure waves, not meteorology.

**Looking Forward – Next Meeting and Other Progress**

* The next telecon will be held in the first half of September. Please sign up on the Doodle Poll: <http://www.doodle.com/xsmb9ez6yes8ahcy>
* AOOS would like to work with a small volunteer working group n August to talk about what types or projects and corresponding funding should go into their upcoming 5-year funding plan. If you are interested, please email Darcy, [dugan@aoos.org](mailto:dugan@aoos.org)
* The circulation modeling group is revving their engines and planning to meet in the next two weeks!

***Note: please see attached list of identified datasets and provide any feedback you may have***