CARA-GCOOS-SECOORA
Ecological Modeling Workshop

R. Weisberg

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Ecology is not Biology

Ecology is the whole shebang, a truly multidisciplinary topic
Ecologically Based Management is not about fishes

EBM is about ecology of which fishes are but one part.
Large Marine Ecosystems is a empty set of words

For instance, the Caribbean, Gulf of Mexico, and the Southeast U.S. are not independent form one another; they are connected by the Loop Current – Florida current – Gulf Stream System
Required for all of this is:

“Coastal ocean state variable estimation,”

where the state vector includes all relevant variables: $\eta, V, T, S, \text{nats}, O_2, \text{light, phyto-} \& \text{zoo-plankton +.}$

- To accomplish this we need a coordinated program of observations and models linked by data assimilation.
- There must be a recognition that no single sensor (ADCP, HF-radar, etc) or sensor delivery system (moorings, profilers, gliders, etc.) is adequate, nor is any single model (nesting across different scales is required).
- Implementations of these tools (observations and models) must be science-based; in other words, distinctive dynamical regimes must be adequately sampled, versus simply placing resources based on someone’s favorite location.
• Such placement will enable us to gain improved understanding on coastal ocean system workings (as necessary for societal problem solving) as well as providing data for quantitatively assessing model performance across the various dynamical zones: boundary current, outer shelf, inner shelf, mid-shelf (if the shelf is broad enough), nearshore, surf zone, and estuaries.

• While this is a large task, accomplishment is guided by the subregion physics. Recognizing that we cannot do everything, the trick is to distribute resources in a manner that is complete enough to be (i) useful and (ii) to provide a backbone on which to build in the future.

• As a starting point we need to distribute resources that will begin to accomplish the above and allow for providing a set of products that will capture the public’s attention.

• Many products already exist, but these remain unknown to the public, even to the various CRA, GCOOS, and SECOORA Boards. We must enable the use of all such products, even if they may not directly supported by the individual RAs.
A few more observations

1. There is no dearth of funding; rather money is being squandered by too many agencies with independent, uncoordinated agenda, glossy (but empty) brochures, and unending workshops.

2. The problem will not be solved by the agencies (left to their own devices), who have repeatedly brought us 1. above instead of what was previously enumerated.

3. There is enough work to go around and hence a basis for true interactions (versus competition) between CARA, GCOOS, and SECOORA.

4. We must begin by enabling those who are performing, adding to such efforts rather than working to supplant them with something new.
The real question is:

How do we collectively get the attention of those who can actually support what is needed?
The answer is:

Politics, with the adage that all politics are local. Eschewing earmarks, as the academic community did in 2007 onward, has not worked.

In the same way that all politics are local so is most ecology. This is not at odds with my previous statement about the LC-FL-GS system, but rather that ecological problems while linked are local – they require local involvement.

If NOAA wants to be the lead IOOS agency in the US, then NOAA must begin to lead. If not then we must find another way.