

March 29, 2010

To the EVOS Trustee Council Members,

My name is Seth Danielson. I first came to Alaska in the summer of 1989 – between my last two years of undergraduate study – and worked on a small longline fishing vessel based out of Whittier. Alaska got in my blood that summer; I returned to Whittier for the summer of 1990 and I moved to the state in 1993. In 1996 I finished a master's degree in Oceanography at UAF and have since worked at UAF as a field technician, analyst and research project manager supporting grant-funded oceanographic studies around the state, from the Gulf of Alaska, Glacier Bay and Prince William Sound to the Bering, Chukchi and Beaufort seas. Over the course of the last two decades, I have come to appreciate the value of quality long term data sets so I am writing to urge you to consider funding an extended oceanographic measurement program.

Long-term data sets are rare but they provide a primary tool for assessing, predicting and responding to environmental changes and impacts. Although we have 40-year observational time series of physical parameters at station GAK1, we do not have a similar length time series that includes chemical and lower trophic level measurements. Environmental monitoring is expensive, labor intensive and repetitive. Yet without it, we lose the ability to assess future impacts or separate anthropogenic from natural variability.

The benefits of a monitoring program are numerous, though not all are measurable in dollars. A properly designed program will harvest returns from the data, including:

- Researchers will be able to better discover the mechanistic inter-coupling of the ecosystem's components.
  - Studies carried out over the last 40 years have provided great insight (such as the combined role of winds and fresh water in directing oceanic transport pathways) but we have also gained new appreciation for complexities that we do not yet understand (such as the role of iron in mitigating primary production).
- Resource managers will have the data they need to make better decisions.
  - Without data-based advances in ecosystem models, we will continue to have failures – such as salmon runs experienced recently in western Alaska or herring populations in Prince William Sound since the oil spill – that result in dire local economic hardships.
- Students – from elementary to graduate – require environmental data to complement and support place-based and inquiry-based learning approaches.
  - Placing the current state of the world into a time series context provides a strong foundation for promoting new insight and understanding.
- Communities that utilize Gulf of Alaska resources rely on the condition and state of the ocean and can realize benefit from the data.
  - Individuals who make their living based on tourism, fishing and other resource extraction all understand that the ocean is a dynamic domain and that monitoring

data provide important insight to its ever changing ways. Time series data help put environmental assessments into temporal context for various activity permit applications. Data help form the basis for evaluating causes of and mitigation efforts needed to protect endangered populations.

- UAF graduates will obtain a state of the art training opportunity. Our graduates take their knowledge to careers in Alaska in management, research and private industry. National attention will remain on the quality ongoing research taking place in Alaskan waters.
  - Our marine science program at UAF will be at the forefront of oceanographic research with the arrival of the R/V Sikuliaq in 2014. Applying this vessel's capabilities to the research questions of the Gulf of Alaska will generate world-class research and advances. This attention will be good for attracting quality students and researchers, and thus further enhance UAF's ability to serve the State.

A worthwhile measurement program could take on many forms, including an ambitious 25 year effort that spends all available funds. Alternately, a more modest program could be endowed such that the measurements are spent below the inflation rate and the program could be carried out on a 100+ year time frame. Both implementations have great merit if done properly (low administrative costs and most funds spend directly on data collection activities).

Lack of data led the National Research Council to conclude that we may never know the root cause of Stellar Sea Lion population declines. Lack of data collections before 1989 hindered our ability to completely understand changes in Prince William Sound after the oil spill. The creation of the EVOSTC and the funds directed toward research provided a singular chance to address this problem of missing data for future generations. Must we have another oil spill before we actually implement a long-term monitoring program?

Here we have an opportunity to give future generations the gift of knowledge. Knowledge that will be used for unlocking the secrets of how our state waters are connected to the global ocean, the secrets of how our marine ecosystem is able to support such diverse and valuable fisheries and the information that resource managers will need to have in order to successfully direct sustainable levels of resource extraction from our waters. Don't miss this opportunity.

Thank you for your attention.

Seth Danielson