Testimony for LD 493 An Act to Create a Commission on Ocean Acidification

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Thank you Senator Baker and Representative Kumiega and members of the Committee on Marine Resources Committee for the opportunity to speak in favor of LD 493: An Act to Create the Ocean Acidification Council.

My name is Gretchen Noyes-Hull, and I teach at the University of Maine at Augusta, as well as being founder and President of the Gulf Marine Station in Nova Scotia (GAMS). I am in the unique position as an oceanographer who quite literally has a foot in two neighboring 'Gulfs' of water, the Gulf of Maine and the Gulf of St Lawrence, where GAMS is located. I am involved in programs in both Maine and the Maritimes that concern ocean acidification. I also have the unusual combination of direct communications with fishermen and their organizations, with marine researchers in Canada, at both the national and provincial levels, and with an extensive knowledge of ocean chemistry and marine ecosystems.

I strongly support the creation of the proposed Ocean Acidification Commission and its mandate, and wish to speak on one aspect of the latter. I am deeply alarmed by the seemingly unstoppable process of global ocean acidification. We all know that acidification of the world's oceans is occurring today, and that even in the unlikely event that fossil fuel emissions were soon brought under control, the carbon dioxide already in our atmosphere will remain there for decades to come, continuing to dissolve in the oceans for generations.

The seeming inevitability of ocean acidification and the uncertainty of its effects is very disturbing to all of us.

We have sparse observations on the deleterious effects of lowered pH on a very small variety of indicator organisms, primarily those of economic value such as crustaceans and molluscs. And we have less understanding of the ecological impacts of incremental changes in pH. The effects on community relationships within marine ecosystems are virtually unknown. The complexity of the chemical, biochemical, and ecological components of the marine system make the understanding of the impacts of ocean acidification, especially when coupled with the other stressors of climate change such as temperature, intimidating, to say the least.

Although the decreasing pH of the ocean is truly a global problem, there is a very significant local and coastal contribution to ocean acidification. Variation in freshwater runoff and nutrient loading related to watershed land use may greatly amplify acidification in coastal waters. There are little regional data of coastal acidification in Maine, or along other coastlines. and apparently studies of these effects are in their infancy.

The establishment of an ocean acidification commission will provide a number of important opportunities. In particular, I support its ability to establish a Maine coast-wide monitoring program. These are the reasons for that support:

1) Acid Budget: Through the development of a standardized and scientifically rigorous protocol for field measurement of alkalinity/acidity, the State of Maine (and its Maritime neighbors) would be able to establish an 'ocean acidification budget' that will reveal the relative importance of coastal contributions to ocean acidification.

2) Planning: Data provided by a monitoring program may be used to provide land use planning and best practices for mitigating contributions by individual watersheds to acidification and for documenting changes that occur. Decisions made with the use of this data will have significant economic impact on Maine's marine harvesters and farmers.

3) Engagement: The field monitoring program would involve communities and non-profit organizations in the gathering of regional data on acidification and related parameters (nutrients, oxygen, temperature, salinity...). Such monitoring programs are economically desirable, and public engagement through 'citizen science' is a powerful step in environmental education and stewardship. An individual's ability to affect rates of acidification and climate change may seem improbable on a global scale but empowering on a local one.

4) Maine: As is becoming more evident, the Gulf of Maine seems to have a significantly unusual position in global climate change and ocean acidification. In the creation of a monitoring program, Maine will become an important leader and model for other states, and provinces.

In conclusion, I strongly support the passage of LD 493, and am pleased to answer any questions that you might have.

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