

Coastal and Estuarine Research Federation,
22nd Biennial Conference
“Towards Resilient Coasts & Estuaries,
Science for Sustainable Solutions”
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San Diego California, USA

TITLE: Physical constraints and the comparative ecology of coastal ecosystems across the US Great Lakes, with a coda

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PRESENTATION TYPE: Oral

CURRENT SESSION CHOICE:

Kelly was Invited to Submit to Special Session

SCI-040 Synthesis Research in Estuarine and Coastal Science: A Session in Honor of Scott W. Nixon

ABSTRACT BODY:

One of my favorite papers by Scott Nixon (1988) was the story he built around the observation that marine fisheries yields were higher per unit area or per unit primary production than temperate lakes. The story, and the putative agent for the freshwater/marine difference, involved a higher energy of mixing due to tides in marine environments. Interestingly, I and my recent colleagues have taken advantage of the relatively low level of physical energy and mixing between coastal waters and offshore waters in the Great Lakes—this feature allows an accumulation of nutrient loading into nearshore waters. We have developed approaches to identify landscape input signals across strong gradients of watershed condition over the 5 lakes and across ~7500 kilometers of Great Lakes shoreline and can depict associated eutrophication gradients in the water. We are synthesizing the data linking land and water at scales from very local, to lake by lake, to a general model for the entire Great Lakes basin. In addition, I worked with Scott and later took an unusual “anadromous” career path (moving from the study of estuarine/marine ecosystems to those of the US/Canada Great Lakes), so I thought it appropriate in this tribute session to include a “coda” (with which Scott ended his paper). In this, I will emphasize sharing of perspectives and tools across limnology and oceanography, their differences notwithstanding. It won’t be as good as Scott’s stories, but it will be interesting.

Nixon, S.W. 1988. Physical energy inputs and the comparative ecology of lake and marine ecosystems. *Limnol. Oceanogr.* 33(4, part 2): 1005-1025.