Abstract for SWS (Society of Wetland Scientists) meeting to be held in Duluth, MN, June 2-6 2013. Invited talk, for a symposium chaired by Arnold van der Valk et al, tentatively titled “Ecosystem services and benefits in Great Lakes coastal wetlands”.

FUNCTIONAL VALUES OF GREAT LAKES COASTAL WETLANDS: WHAT WE KNOW AND WHAT WE CAN BE WORKING TOWARDS.

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Water quality improvement, shoreline protection, carbon sequestration, and lake productivity subsidy are among the functional values commonly attributed to Great Lakes coastal wetlands (GLCWs). There is much less information concerning these than there is concerning habitat and fish/wildlife support, because the latter lend themselves to quantifying via structural indicators and synoptic surveys whereas the former do not. Nutrient dynamics and sediment retention have been studied in a few systems, but these may inadequately represent the range of GLCW types. Retention/removal of nitrogen and phosphorus is spatially and temporally variable but can account for ¼ to ½ of growing-season loading. GLCWs appear not to accrete sediments long term, but do settle out suspended particles. There is one study showing GLCW retention of herbicide pollutants. GLCWs probably subsidize nearshore productivity via export of carbon in dissolved or biomass form but their fish nursery function is more significant for coastal productivity. Carbon sequestration and shoreline protection are probably relevant in just certain GLCW types and locations but data are conspicuously lacking. Patterns of ecological condition in relation to anthropogenic stressors are well-characterized for GLCWs, but the degree to which functional values vary with condition is not. Water quality improvement and flood protection are particularly needed in proximity to urban and agricultural development but these are also locations where GLCWs have been heavily degraded. There is renewed interest in quantifying the services GLCWs provide and the potential for enhancing these through remediation and restoration. *This abstract does not necessarily reflect EPA policy*.