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MAINE MARITIME ACADEMY

Corning School of Ocean Studies

November 7, 2022

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Sea-Run Fish Ecosystem Project Coordinator

Insights to the ecological effects in the estuary of a large-scale restoration in the Penobscot River, Maine

Diadromous fish provide a number of ecological services due to their high abundance and seasonal migrations that transport nutrients, energy, and biomass between freshwater and marine ecosystems. The Penobscot River is the second largest river in New England and once had large populations of diadromous fish, and recently has been the focus of various restoration projects aimed at increasing diadromous fish populations and their ecosystem services. Most obviously, Great Works Dam was removed in 2012, and Veazie Dam was removed in 2013 along with many other improvements to fish passage and stocking efforts throughout the watershed resulting in substantially increased abundance of River Herring in recent years. Since 2012, NOAA Fisheries has conducted surveys of the Penobscot Estuary using mobile, multifrequency echosounders and visual counts of piscivorous birds and marine mammals to construct a time series of fish biomass, fish distribution, and abundance and distribution of birds and marine mammals. Numbers and size of fish were generally greater and less patchy after restoration. Coincident with these patterns of fish distribution were increases in observed piscivorous birds and marine mammals over the time series. Together, these patterns demonstrate the changing ecological conditions of this estuary and the importance of long-term monitoring in describing complex changes as restoration proceeds.

3:00 - 3:50 PM

Delano Auditorium, Maine Maritime Academy

Livestream: live.mainemaritime.edu

Full seminar schedule:

<https://mainemaritime.edu/ocean-studies/seminar-schedule/>



Bio:

Justin serves as the [Sea-Run Fish](#) Ecosystem Project Coordinator. He has over 18 years' experience with sea-run fish in Maine and has previously worked for both the NOAA Northeast Fisheries Science Center and the Maine Department of Marine Resources on Atlantic Salmon and other sea-run fish. His research has spanned freshwater habitat and population assessments for Atlantic Salmon to more recent focus on the Penobscot River Estuary. He has lead a survey of the estuary using hydroacoustics to monitor the changes in fish distribution during a period of large-scale river restoration since 2012. His interests are also in the ecology of sea-run fish including Atlantic Salmon, Rainbow Smelt, Alewife, and Blueback herring which utilize the estuary in different ways during their life cycle. He collaborates with various researchers to explore and what may be drivers of growth, survival and distribution for sea-run fish in the estuary.

As part of the Extension team, he communicates regularly with national, regional and local Sea Grant, NOAA- Northeast Fisheries Science Center researchers, Maine Department of Marine Resources, US Fish and Wildlife Service, community members and other stakeholders to foster integration and modernization of human networks and data systems for improved communication and management of sea-run fish.

B.S. Biology, University of Maine, 2001

M.S. Marine Biology, University of Maine, 2019