

Bird community assembly in human-modified habitats



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How do birds communities assemble in manipulated wetlands, and what are the implications for wetland management in Atlantic Canada?

Since the 1600s, saltmarshes have been dyked and converted to agricultural land. Today, about 80% of saltmarsh along the Bay of Fundy has been lost. To compensate for habitat loss, wildlife managers began creating artificial wetlands throughout Atlantic Canada. However, after a few years, these wetlands appear to no longer be productive habitat for wildlife, a phenomenon known as “wetland senescence”. Water level drawdown is one option used by wildlife managers to rejuvenate productivity. We will test if this is an effective management technique for artificial wetlands in the Maritimes where these freshwater wetlands were built on former saltmarsh.

How do communities assemble when the successional cycle is “reset”? We will consider the importance of stochastic (e.g., priority effects) and deterministic (e.g., habitat filtering) drivers of community assembly. We hypothesize that bird assembly in human-altered wetland habitats is more influenced by stochastic processes than deterministic ones.

We will be monitoring bird communities in several artificial wetlands in New Brunswick and Nova Scotia starting Spring 2021. In Fall 2021, we will completely draw down the water level in some of these wetlands . In 2022 and 2023, we will monitor the experimentally manipulated and the control wetlands to see how bird communities use the wetlands throughout the year. We are particularly interested in documenting how bird communities assemble in the recently manipulated wetlands.

Results will have implications for wetland management that will be useful to our research partners. Knowledge on how bird communities assemble in wetlands can provide important information that wildlife managers can use to target specific species or groups when considering habitat restoration or alteration.

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