Characterizing black tern nesting response to changing water levels in Lake St. Clair


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CORE QUESTION:
How do black terns nesting around Lake St. Clair respond to changing water levels?

A SHOREBIRD IN DECLINE

Black terns, a threatened species in Michigan, nest in places vulnerable to flooding and water level fluctuations. Each year, these migratory shorebirds leave winter feeding grounds in South America to breed in North American freshwater wetlands. Great Lakes breeding colonies of black terns have plummeted since the 1960s, due in large part to habitat loss and degradation. Black terns are now listed as endangered or "of special concern" in most Great Lakes states.

Black terns breed in habitats with enough vegetation to protect nests from predators and storms, and with enough access to open water that they can take flight to forage or escape predators. Previous research has studied the negative effects of low water levels on black tern nests and colonies; less understood are the effects of high water levels and flooding, conditions that have characterized the Great Lakes since the historic lows of 2013.

Southeast Michigan's St. Clair Flats house one of the largest black tern colonies in the Great Lakes region. Water levels in Lake St. Clair have risen well above average since 2018, and spring and summer precipitation in the area has increased substantially since 2013. Climate change is likely to bring still more intense storms and water level fluctuations – dire news for vulnerable black tern nests.

ODDS OF SURVIVAL

Michigan Sea Grant Graduate Research Fellow Jennifer Fuller from the University of Michigan will work with the Audubon Society to study how water levels affect black tern colonies in the St. Clair Flats near Lake St. Clair.

She will use Audubon colony surveys and aerial imagery of tern habitat to compare nest success – whether or not an individual nest produced a surviving chick – against local weather and water level patterns. She will also analyze the effects of flooding and high water on the overall colony's long-term ability to survive and reproduce. This research will inform conservation management strategies for these vulnerable bird populations.

CONTACT

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