

# JASM 2022

GRAND RAPIDS, MICHIGAN, MAY 14 - 20

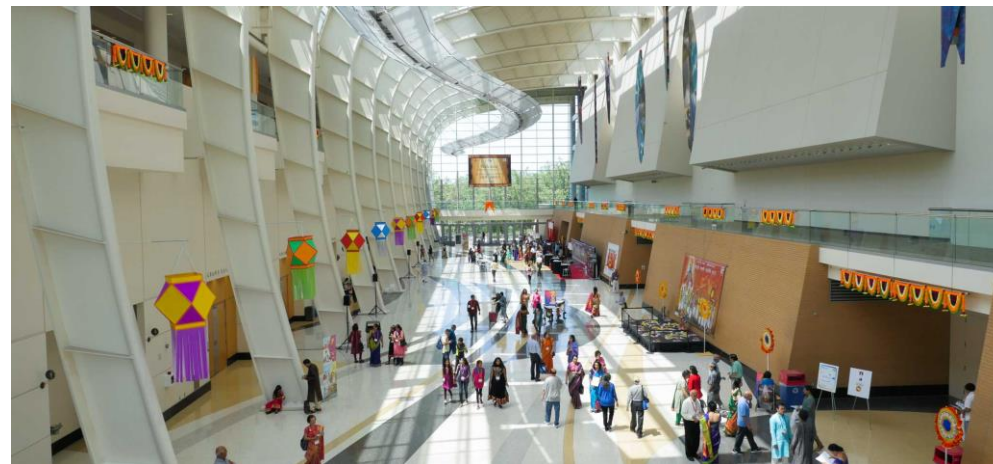


Rapid Changes ~ Collaborative Solutions

[jasm2022.aquaticsocieties.org](http://jasm2022.aquaticsocieties.org)

## Schriever Lab jams out!

In May, Schriever Lab hopped over to Grand Rapids, Michigan for the Joint Aquatic Sciences Meeting (JASM). The JASM 2022 meeting brought together a diverse collection of students, scientists, and experts seeking to collaborate, spread awareness on, and problem solve the complex environmental problems facing our society and planet today.





## Do Established Wetland Communities Influence the Succession of Isolated Created Wetlands?

Adam R. Austin and Tiffany Schriever; Presenting author: Adam R. Austin

**Abstract:** Wetlands created for the purpose of compensatory mitigation are among the few contemporary examples of primary succession, and the patterns of community succession within these ecosystems are not well understood. Given a scarcity of potential wetland locations, mitigation wetlands are often constructed in abandoned agricultural fields amidst a landscape mosaic of high-intensity land coverage, impeding species dispersal and thereby creating isolated ecosystems which may take many years to achieve a desired level of biotic integrity (i.e. diversity and conservation value). We asked whether created mitigation wetlands achieve the same level of biotic integrity as established wetlands, and whether the aquatic communities of mitigation wetlands become more similar to those of nearby established wetlands across space and time. To answer this, we examined the plant, aquatic macroinvertebrate, fish, and herpetofauna communities of a chronosequence of 10 mitigation wetlands located throughout Michigan from June - August 2020, comparing each with its nearest available established wetland for a total of 20 study sites. There were no significant differences in biotic integrity between mitigation and established sites, nor were there any distinct patterns of community assemblages between these two broad categories. Wetland age was not a significant predictor of dissimilarity, but distance between sites was significant to at least two km. These results suggest that mitigation wetlands function as effectively as established wetlands despite their isolation, though both types show clear indicators of anthropogenic degradation. Without direct corridors to established systems, the succession of created wetlands is difficult to predict and warrants further study.





# Wetland Characteristics Influence Anuran Occurrence and Assemblage in Coastal Interdunal Wetlands

Morgan Morin and Tiffany Schriever; Presenting author: Morgan Morin

**Abstract:** Interdunal wetlands are suspected breeding habitat for anurans because they are fishless, open-canopy, and present unique niche opportunities. Interdunal wetlands range from rush-and-sedge dominated pools within open dune fields, to forested pools within wooded dune and swale complexes. Forested pools are recognized as important anuran breeding habitat, however, little is known about amphibian use of interdunal wetlands within open dunes. In this study, we investigate the relationship between the degree of aquatic macrophyte coverage and anuran occupancy and diversity. We performed an exploratory survey of anuran presence in 41 open-canopy interdunal wetlands within the Big Sable Dunes complex in Ludington State Park, Michigan. In each wetland, we visually estimated macrophyte cover and measured macrophyte biomass of each structural category (shoreline, submergent, emergent), measured water quality parameters and benthic organic matter. We calculated the correlation between anuran breeding presence and anuran occurrence with wetland characteristics. Shoreline macrophyte coverage ranged from 2.17 percent/m to 63.89 percent/m and 5.97 g/m to 259.47 g/m ; submergent macrophyte coverage ranged from 1.11 percent/m to 56.56 percent/m and 0.47 g/m to 197.87 g/m ; emergent macrophyte coverage ranged from 0.06 percent/m to 11.52 percent/m and 0 g/m to 26.68 g/m . Four anuran species were detected: *Hyla chrysoscelis/versicolor*, *Pseudacris crucifer*, *Lithobates clamitans*, and *Anaxyrus* sp. Breeding presence of *Anaxyrus fowleri*, a Michigan species of special concern, was discovered at seven sites (17%). Study results will provide critical baseline information regarding distribution, assemblage, and abundance of anuran communities in relation to wetland vegetation within the Big Sable Dunes complex.



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