Audubon Great Lakes Marsh Bird Survey Summary:

Lakeview Marsh Wildlife management Area

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Introduction

From May of 2022 to July of 2024 Audubon conducted secretive marsh bird surveys based on a widely recognized "Standard North American Marsh Bird Monitoring Protocol" (Conway, 2011). The survey consisted of 5 min passive + 5 min broadcast; unlimited radius, only focal species (primary and secondary) are recorded, exact distance from observer is recorded; three survey periods surveys must be 10 days apart.

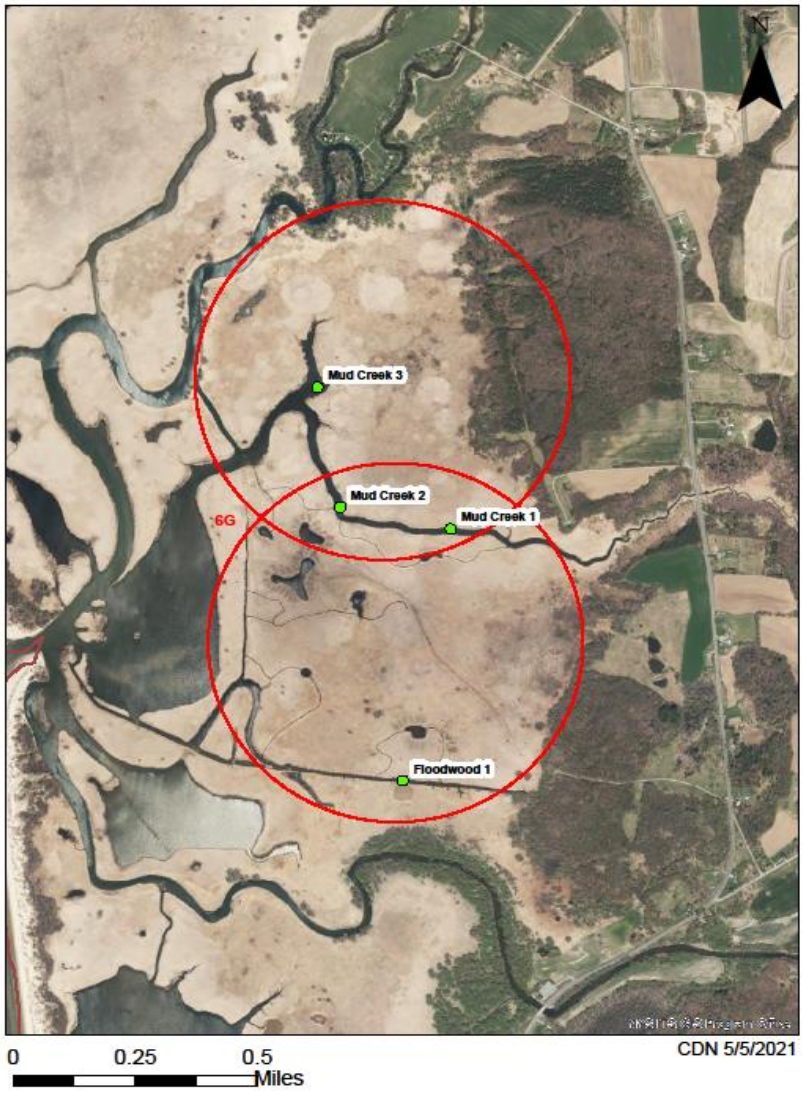
These surveys were designed to detect a shift in the presence or absence of a wetland reliant guild of migratory birds, secretive marsh birds, that act as excellent indicators of freshwater wetland quality. Several species are in steep decline across the great lake's region. Making their use of this site, both pre and post restoration, informative as to the ecological health of the habitat.

Methods

Each point consisted of two parts, beginning with an initial 5-minute passive listening period followed by six 1-minute segments. Each 1-minute segment contains 30 seconds of vocalizations broadcast for one target species, followed by 30 seconds of silence (response time). The call order was Least Bittern, Sora, Virginia Rail, King Rail, Common Gallinule, then Pied-billed Grebe. For the Primary Species, observer recorded during which intervals each individual was detected, going across the datasheet (i.e. during the initial 5-minute period, or any of the 30- second call periods or any of the 30-second silent periods). For the Secondary Species, each individual of each species was recorded on a line on the datasheet. the FIRST (and only the first) minute in which that individual was detected. Then, rather than estimate an exact distance for each individual (as done for primary species) observers placed each bird into one of three distance bins, i.e. <50 meters, 50-100 m, >100 m, based on when you first detected the bird. Full methodology can be found in the QAPP.

Figure 1Looking North Along Mud Creek Near MC2

Figure 2. Avian Monitoring Point Locations



Results

Between 2022 and 2024 at Lakeview Wildlife Management Area, 4 points were surveyed over 3 periods each year for a total of 36 10-minute marshbird surveys, or 6 hours. Overall richness was highest in 2022 and 2023 (6) and lowest in 2024 (4) with a total richness of 6 species across all years. The number of detections was highest in 2024 (71), followed by 2022 (62), and 2023 (53), with a total of 186 detections across all years. From 2022-2024, Marsh Wren was most frequently observed (106 detections), followed by Swamp Sparrow (49) and American Bittern (12) (Table 1).

By point, MC1 had the highest overall richness from 2022-2024 (6), with all other points detecting a total of 5 unique marshbird species. Across 2022 to 2024, the points with the highest number of detections in descending order were MC3 (60), MC2 (61), MC1 (45) and FW1 (20) (Table 2).

Table 1. Summary of raw number of detections by year and marshbird species.

Year	Marsh Wren	Swamp Sparrow	American Bittern	Virginia Rail	Sora	Pied-billed Grebe	Grand Total
2022	46	6	5	2	2	1	62
2023	24	12	7	7	1	2	53
2024	36	31		2	2		71
Grand Total	106	49	12	11	5	3	186

Table 2. Summary of raw number of detections by year, point, and marshbird species.

Point	Year	Marsh Wren	Swamp Sparrow	American Bittern	Virginia Rail	Sora	Pied-billed Grebe	Grand Total
FW1	**2022**	5	1			1		7
	2023	2	3	1			1	7
	2024	1	5					6
	Point Total	8	9	1		1	1	20
MC1	**2022**	9	1		1	1	1	13
	2023	4	1	3	1	1		10
	2024	11	10		1			22
	Point Total	24	12	3	3	2	1	45
MC2	**2022**	16	1	3	1			21
	2023	12	2	3	2			19
	2024	10	9			2		21
	Point Total	38	12	6	3	2		61
MC3	**2022**	16	3	2				21
	2023	6	6		4		1	17
	2024	14	7		1			22
	Point Total	36	16	2	5		1	60
Grand Total		106	49	12	11	5	3	186

Table 3. Summary of Species Richness each Year.

Year	Richness
2022	6
2023	6
2024	4
Grand Total	6

Table 4. Summary of Species Richness each Year.

Year	FW1	MC1	MC2	MC3	Grand Total
2022	3	5	4	3	6
2023	4	5	4	4	6
2024	2	3	3	3	4
Grand Total	5	6	5	5	6

Discussion

The data collected represents two years pre and only one year post construction, because of delaying construction by one year to accommodate gather preconstruction veg data. The data, while limited in duration, provides good information about the species using lakeview, and maybe equally important the species not detected. Of the species detected the secondary species like marsh wren and swamp sparrow were more frequently detected, this is not surprising given their vocal and curious nature, in addition some of those species, while associated with hemi-marsh are not as stringent about their habitat configurations, while larger secretive marsh birds seemed in low supply throughout the site but present at all locations. This is potentially an indication that the habitat is not in the desired condition to entice these birds to stay and breed in larger numbers. Dense, near monocultures of cattail can be found throughout the marsh. This of course was one of the reasons lakeview was considered for restoration actions. we believe that in time, the potholes and channels should provide more interspersion of water and vegetation, along with improved vegetative diversity adding to a more open and varied structural condition, allowing improved foraging and movement though cover.

It's also worth noting that the target species declined in detection post construction. While this may seem initially alarming it's important to note that the data was only collected one year post construction, as opposed to the two that were initially proposed. It takes time following excavation for the marsh to revegetate and provide improved habitat. Therefore, in a growing season following a large disturbance like pothole and channel construction, we do not believe it to be unusual to see slightly lower numbers. The habitat has been altered to a large degree, but enough time has not passed for the potholes and channels to become revegetated and provide improved interspersion, one of the key habitat parameters for site selection in secretive marsh birds.

These vitally important wetland complexes support many migrating and breeding species, including at-risk species such as the American Bittern, American Black Duck, Black Tern, Common Loon, Common Tern, Least Bittern, Northern Harrier, Pied-billed Grebe, and Sedge Wren. Additional wetland dependent species use the area as a migratory staging and feeding area, including the Caspian Tern, various shorebird species, and a diversity of waterfowl. The area hosts thousands of ducks, including the American Black Duck, Common Goldeneye, Common Merganser, Mallard, and Long-tailed Duck. It will be important to continue monitoring avian response at this site into the near future to fully assess avian response to restoration.