

Calumet Marsh Bird Monitoring 2015-2016





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The Calumet wetland working group consists of: The Forest Preserves of Cook County, The Chicago Park District, Illinois Department of Natural Resources, Audubon Great Lakes, The Wetlands Initiative, The Field Museum, The Nature Conservancy, Illinois Natural History Survey and the U.S. Fish and Wildlife Service.

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The Field
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Introduction

The Calumet wetland working group is an informal coalition of land managers, scientists, and conservationists working together to restore the valuable wetlands of the Millennium Reserve in northeast Illinois. A long history of industrialization and urbanization has highly altered hydrology in the region creating threats to the long-term sustainability of wetlands and, in particular, marshes, which depend on natural and dynamic water conditions. Invasive species such as common reed (*Phragmites australis*) and narrowleaf cattail (*Typha angustifolia*) further degrade marsh conditions as reflected by documented declines of the region's marsh-dependent birds (W. Marcisz 2016).

Marsh birds serve as a primary indicator of wetland quality and their charismatic nature also promotes great public interest which serves to raise the profile of this large collaboration. This report summarizes the result of monitoring established in 2015 and expanded in 2016 with the goal of documenting marsh bird breeding populations and distribution to serve as a baseline for goal-setting within the conservation action planning process of the Calumet wetland working group.

Methodology

During 2015, Audubon Great Lakes organized the monitoring of ten urban wetlands in northeastern Illinois. In 2016 with additional funding, an additional 16 sites were added (12 of which were in Northwest Indiana and four of which were in Illinois). Together these 26 sites represent the

Calumet marsh complex, identified based on existing hemi-marsh or potential hemi-marsh conditions. Audubon relied on staff, partners and a network of experienced volunteers to conduct the surveys. The surveys were conducted using the widely-recognized "Standardized North American Marsh Bird Monitoring Protocol" (Conway, 2011), developed by the U.S. Fish and Wildlife Survey as a continent-wide, standardized protocol for measuring breeding marsh bird densities. In addition to using this protocol, surveyors also conducted territory mapping at each site with the goal of counting how many pairs of each focal species were present. Territory mapping provides an actual count of the numbers of each nesting species at each site, which will serve as a baseline against which future restoration efforts can be gauged on a site by site basis.





Species

The four primary focal species for this study were selected due to their indication of quality hemi-marsh habitat. They regularly occur in the region, are in the core of their breeding ranges, and respond to improved habitat conditions (Table 1). Secondary focal species are less reliable indicators of hemi-marsh due to either being range peripheral or extirpated colonial nesting species

(Table 2). Secondary focal species may or may not respond to future hemi-marsh restoration. Three of these species are colonial or semi-colonial nesters not suited for territory mapping and dependent on stochastic processes out of land managers' control (e.g. the presence of suitable rookery trees). American Bittern is a strong indicator of marsh habitat quality but breeds primarily north of the Calumet. Black Tern and Yellow-headed Blackbird are

both breeding range peripheral and may be absent for reasons outside of land managers' control. Finally, we also collected data for several additional incidental focal species (Table 3), without producing territory maps. Some of these species breed primarily north of the Calumet and others are generalists not requiring hemi-marsh (Blue-winged Teal nests in upland meadows adjacent to marshes; Sora and Virginia Rail occur in both marsh and wet

meadow/ditches; Marsh Wrens occur in *Phragmites* monocultures in addition to hemi-marshes). Black-crowned Night-Heron requires suitable nesting trees (or occasionally tall *Phragmites* or cattail stands) for its rookeries, but even then rookeries may not be occupied for stochastic reasons. However, since these species use hemi-marsh habitat during all or part of their life cycles, they are included. Figures 1-4 show the four primary focal species.

Table 1. Primary Focal Species.

Species	Good hemi-marsh indicator	Moderate hemi-marsh indicator	Poor hemi-marsh indicator
Pied-billed Grebe (<i>Podilymbus podiceps</i>)	✓		
Common Gallinule (<i>Gallinula chloropus</i>)	✓		
King Rail (<i>Rallus elegans</i>)	✓		
Least Bittern (<i>Ixobrychus exilis</i>)	✓		

Table 2. Secondary Focal Species.

Species	Breeding range peripheral	Extirpated colonial breeder	Good hemi-marsh indicator	Moderate hemi-marsh indicator	Poor hemi-marsh indicator
Snowy Egret (<i>Egretta thula</i>)	✓				✓
Yellow-crowned Night-Heron (<i>Nyctanassa violacea</i>)	✓				✓
Little Blue Heron (<i>Egretta caerulea</i>)	✓				✓
Yellow-headed Blackbird (<i>Xanthocephalus xanthocephalus</i>)	✓	✓		✓	
Black Tern (<i>Chlidonias niger</i>)	✓	✓			✓
American Bittern (<i>Botaurus lentiginosus</i>)	✓			✓	

Table 3. Incidental Focal Species.

Species	Breeding range peripheral	Wetland generalist	Good hemi-marsh indicator	Moderate hemi-marsh indicator	Poor hemi-marsh indicator
American Coot (<i>Fulica americana</i>)	✓		✓		
Blue-winged Teal (<i>Anas discors</i>)	✓				✓
Black-crowned Night-Heron (<i>Nycticorax nycticorax</i>)					✓
Marsh Wren (<i>Cistothorus palustris</i>)		✓			✓
Sora (<i>Porzana carolina</i>)		✓		✓	
Virginia Rail (<i>Rallus limicola</i>)		✓		✓	

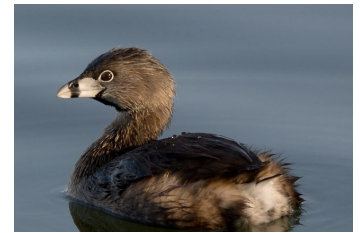


Fig. 1. Pied-billed Grebe.

Photo: Nick Chill (used under Flickr Creative Commons).



Fig. 2. Common Gallinule.

Photo: Caleb Putnam.



Fig. 3. Least Bittern.

Photo: Caleb Putnam.



Fig. 4. King Rail.

Photo: Andy Jones.

Data Collection

Following the Standardized North American Marsh Bird Monitoring Protocol (Conway 2011), participants conducted three regular point counts at each assigned point three times each season (first during May 1-15, then again May 16-31, and finally June 1-15). The number of points varied from two to thirteen depending on the size of the site and the amount of marsh habitat

therein. Points were distributed at a spacing of one point per 200m grid cell, at an accessible location within the marsh. Kayaks were used to survey seven of the sites, as no land-based access was available to most of the points. Each point was visited for 14 minutes in sequence starting 30 minutes prior to sunrise and finishing at the latest three hours post-sunrise. At each point, a pre-recorded playback including vocalizations of each of the four

primary focal species was broadcast, with periods of silent listening before and after the recordings. All visual and audio responses were recorded on the datasheet. After each survey, the observer sketched the boundaries of each territory on a satellite imagery map based on their interpretation of territory locations. Photos of our monitors working in the Calumet are shown in Figures 4-6.



Fig. 4. A rainy day for training - NIRMI Stewardship liaisons Axel Dutton (center), Libby Keyes, and Linda Magyar (right) at Wolf Lake with Thomas Barnes and Nat Miller of Audubon Great Lakes (left). Photo: Peter Avis (NIRMI).



Fig. 5. NIRMI Stewardship Liaison Axel Dutton surveying birds at Kennedy to Cline West. Photo: Peter Avis (NIRMI).



Fig. 6. NIRMI Stewardship Liaison Libby Keyes conducting a bird survey at Kennedy to Cline West. Photo: Peter Avis (NIRMI).

Table 4. Sites included in Calumet wetlands bird surveys from 2015-2016.

***Gibson Woods was not surveyed during 2016, due to access problems.**

Site	# points	Kayak survey	Surveyed 2015	Surveyed 2016
Eggers Grove	6	✓	✓	✓
Burnham Prairie	11	✗	✓	✓
Hegewisch Marsh	8	✗	✓	✓
126 th St. Marsh	3	✗	✓	✓
Heron Pond	5	✗	✓	✓
Park 564 (Big Marsh)	13	✓	✓	✓
136 th St. marsh	3	✗	✓	✓
Powderhorn	7	✗	✓	✓
Park 565 (Indian Ridge North)	5	✓	✓	✓
Park 565 (Indian Ridge South)	4	✗	✓	✓
Park 562 (Van Vlissingen)	7	✗	✗	✓
Park 576 (Whitford Pond)	8	✗	✗	✓
Calumet Conservation Area 2	7	✗	✗	✓
Lake Calumet Conservation Area	11	✓	✗	✓
Hyde Lake	8	✗	✗	✓
Roxana Marsh	6	✓	✗	✓
Strawberry Island	10	✓	✗	✓
DuPont	5	✗	✗	✓
Ivanhoe	11	✗	✗	✓
Pine Station Nature Preserve	6	✗	✗	✓
Clark and Pine	11	✗	✗	✓
Tolleston Ridges & Gibson Woods*	6	✗	✗	✓
Kennedy To Cline East	6	✗	✗	✓
Kennedy To Cline West	10	✗	✗	✓
Wolf Lake Pool 6	7	✗	✗	✓
Wolf Lake Pool 5	7	✗	✗	✓
Wolf Lake Management Unit 9	2	✗	✗	✓
Sand Ridge Nature Center	2	✗	✗	✓

Conway density estimates

We report two Conway protocol density metrics. First, the raw number of detections of primary focal species divided by the number of survey points divided by the number of surveys per season. The raw number of detections only includes independent individual birds recorded during an active point count, and excludes birds recorded only between points and those thought to be duplicative observations. Second, we report the proportion of sites with at least one detection of each primary focal species (Table 6). These metrics will be sensitive to actual abundance changes in the

future, but do not directly measure breeding birds, since all detections are included (both migrant individuals and breeding individuals).

Estimating territory numbers

Conway densities are useful for standardizing the dataset across North America and for broad abundance and trend estimates, but their strongest site-level value is with large wetlands where survey effort cannot cover the entire site. With relatively small sites in the Calumet, in addition to densities, we also pursue territory counts in order to obtain a more precise metric of abundance and

trends for each species, and to closely measure breeding occupancy, rather than breeding/migrant density. To do so, each datasheet and territory map from each of the three survey periods were compared in order to determine the maximum well-documented number of breeding territories for each non-colonial species for the 2016 season. We created cutoff dates for each species and only use birds observed after these cutoffs in order to exclude migrants (Table 5). In cases where our surveys missed a species, but other data were discovered showing presence (eg. eBird or personal observations of outside individuals), such data were used to fill in information gaps.

This yields a reliable minimum territory count for each site for each year. We acknowledge that some or all of these counts may be lower than the actual number of territories present, but because the sites are limited in extent and allow a complete survey of the available emergent habitat, we argue these counts are reasonable metric of actual occupancy. In combination with the two density metrics above, we have a very reliable indicator of the success of future marsh restoration. American Coots occasionally breed in the Calumet but are rare, however migrant flocks of up to 10-20 birds can linger in the region until at least June 1, so birds were not counted as territo-





rial until after June 1. Black-crowned Night-Herons forage in many of the Calumet marshes but do not currently breed. This is a result of arbitrary processes and the absence of proper nesting trees, not the condition of the hemi-marsh. Marsh Wrens begin arriving in the Calumet in late April, and are highly vocal throughout the survey period, suggesting the interpretation of territory numbers is straightforward. Additionally, this species nests in any tall emergent vegetation, including invasive common reed (*Phragmites australis*) monocultures, rendering it of low value to assessing the success of hemi-marsh restoration.

Table 5. Migration cutoff dates for selected focal species

Species	Date	Explanation
Pied-billed Grebe	May 10	C. Putnam/W. Marcisz, pers. obs.
Least Bittern	May 25	C. Putnam/W. Marcisz, pers. obs.
Common Gallinule	May 25	C. Putnam/W. Marcisz, pers. obs.
Virginia Rail	May 20	C. Putnam/W. Marcisz, pers. obs.
Sora	May 20	C. Putnam/W. Marcisz, pers. obs.
American Coot	June 1	C. Putnam/W. Marcisz, pers. obs.
Black-crowned Night-Heron	none	Early migrant. Use of habitat for foraging, not territories.
Marsh Wren	none	Counts do not vary significantly between survey periods.

Results

Conway densities for each primary focal species are given in Table 6. Pied-billed Grebes are the most prevalent primary focal species, with several sites showing consistently high detection rates. No King Rails were observed during 2015 or 2016. Least Bitterns were detected at three of the 28 sites in 2016 and none of the ten sites surveyed in 2015. Common Gallinule observations were few, and only at a few sites, with almost all observations likely being migrants rather than breeders.

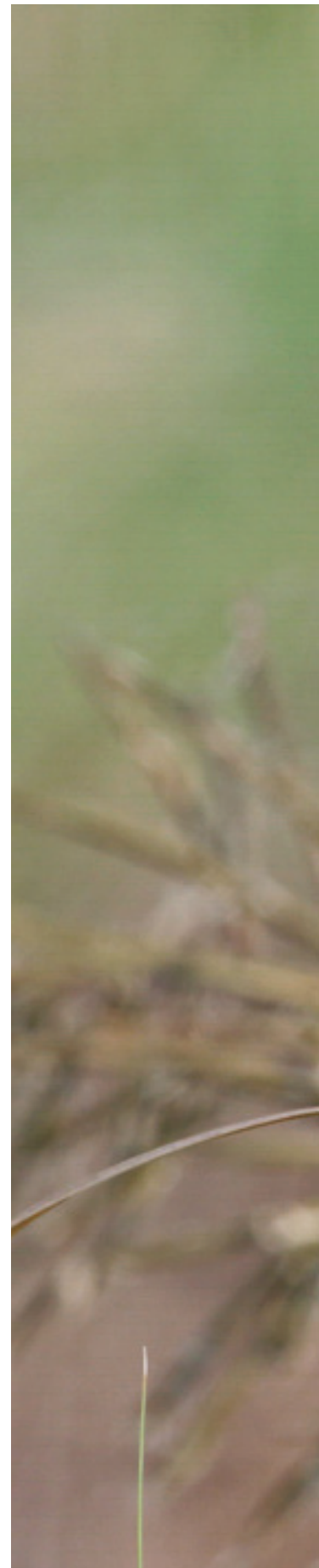
Table 6. Conway density estimates for primary focal species in the Calumet wetlands by year. Density estimates consist of the raw number of independent individual detections per point per survey, and thus incorporate both migrants and breeders, unlike territory counts. Duplicate individuals and those recorded between point counts are excluded. PBGR=Pied-billed Grebe. COGA=Common Gallinule. KIRA=King Rail. LEBI=Least Bittern.

Site	PBGR 2015	PBGR 2016	KIRA 2015	KIRA 2016	COGA 2015	COGA 2016	LEBI 2015	LEBI 2016
Eggers Grove	0.278	0.167	0	0	0	0	0	0
Burnham Prairie	0.061	0.212	0	0	0	0	0	0
Hegewisch Marsh	0.292	0.875	0	0	0.125	0	0	0
126 th St. Marsh	0	0	0	0	0	0	0	0
Heron Pond	0	0.133	0	0	0	0	0	0
Park 564 (Big Marsh)	0	0	0	0	0	0	0	0
136 th St. marsh	0.111	0.500	0	0	0	0	0	0
Powderhorn	0	0.143	0	0	0	0	0	0.286
Park 565 (Indian Ridge North)	0	0	0	0	0.067	0	0	0
Park 565 (Indian Ridge South)	0	0	0	0	0	0	0	0
Park 562 (Van Vlissingen)	-	0	-	0	-	0	-	0
Park 576 (Whitford Pond)	-	0	-	0	-	0	-	0
Calumet Conservation Area 2	-	0	-	0	-	0	-	0
Lake Calumet Conservation Area	-	0	-	0	-	0	-	0
Hyde Lake	-	0	-	0	-	0	-	0
Roxana Marsh	-	0	-	0	-	0	-	0
Strawberry Island	-	0	-	0	-	0	-	0
DuPont	-	0.267	-	0	-	0	-	0
Ivanhoe	-	0.030	-	0	-	0	-	0
Pine Station Nature Preserve	-	0.167	-	0	-	0	-	0.083
Clark and Pine	-	0.303	-	0	-	0.030	-	0.060
Tolleston Ridges/Gibson Woods	-	0	-	0	-	0	-	0
Kennedy To Cline East	-	0	-	0	-	0.056	-	0
Kennedy To Cline West	-	0	-	0	-	0	-	0
Wolf Lake Pool 6	-	0	-	0	-	0	-	0
Wolf Lake Pool 5	-	0	-	0	-	0	-	0
Wolf Lake Management Unit 9	-	0	-	0	-	0	-	0
Sand Ridge Nature Center	-	0.833	-	0	-	0	-	0

The proportion of sites containing at least one individual of each primary focal species is offered in Table 7. Observed occupancy was relatively high both years for Pied-billed Grebe, low for both Common Gallinule and Least Bittern, and zero for King Rail.

Table 7. The proportion of Calumet wetland sites occupied by each primary focal species by year, using Conway density estimate data.

Species	2015 (n=10)	2016 (n=28)
Pied-billed Grebe	0.40	0.39
King Rail	0.00	0.00
Common Gallinule	0.20	0.07
Least Bittern	0.00	0.11





Territory counts for each of the 28 sites surveyed during 2015 and 2016 are given in Tables 8 and 9. Black-crowned Night-Herons, which are colonial nesters and do not stake out territories, did not breed in the Calumet and were recorded as present (i.e. using the habitat for foraging) or not detected.

Table 8. Territory counts for 2015. PBGR=Pied-billed Grebe. COGA=Common Gallinule. KIRA=King Rail. LEBI=Least Bittern. VIRA=Virginia Rail. SORA=Sora. BCNH=Black-crowned Night-Heron. AMCO=American Coot. MAWR=Marsh Wren. Asterisks represent totals populated or supplemented from data outside our Conway protocol dataset, including eBird, Bird Studies Canada protocol data, and personal communications with Walter Marcisz.

Site	PBGR	COGA	KIRA	LEBI	VIRA	SORA	BCNH	AMCO	MAWR
Eggers Grove	2	0	0	2	0	0	Present	1*	9*
Burnham Prairie	0	0	0	0	1	0	Not detected	0	8
Hegewisch Marsh	3	0	0	0	0	2	Not detected	1	9
126 th St. Marsh	0	0	0	0	0	0	Present	0	0
Heron Pond	0	0	0	0	0	0	Present	0	0
Park 564 (Big Marsh)	0	0	0	0	0	0	Present	0	4
136 th St. marsh	0	0	0	0	1	1	Not detected	0	1
Powderhorn	0	0	0	0	1	0	Not detected	0	12
Park 565 (Indian Ridge North)	0	0	0	0	0	0	Present	4	1
Park 565 (Indian Ridge South)	0	0	0	0	0	0	Present	0	0
Total	5	0	0	2	3	3	n/a	6	44
% sites occupied	40	0	0	10	30	20	60	30	70

Table 9. Territory counts for 2016. Codes as in Table 8. Codes and asterisks as in Table 8.

Site	PBGR	COGA	KIRA	LEBI	VIRA	SORA	BCNH	AMCO	MAWR
Eggers Grove	2	1*	0	0	0	0	Present	1*	7
Burnham Prairie	1	0	0	1	1	0	Present	0	16
Hegewisch Marsh	4	1*	0	0	0	1	Not detected	2	10
126 th St. Marsh	0	0	0	0	0	0	Present	0	1
Heron Pond	1	0	0	0	0	0	Present	0	0
Park 564 (Big Marsh)	0	0	0	0	0	0	Not detected	0	10
136 th St. marsh	1	0	0	2	1	0	Present	0	0
Powderhorn	0	0	0	1	0	0	Present	0	18
Park 565 (Indian Ridge North)	0	0	0	0	0	0	Present	0	2
Park 565 (Indian Ridge South)	0	0	0	0	1	1	Present	0	0
Park 562 (Van Vlissingen)	0	0	0	0	0	0	Present	0	8
Park 576 (Whitford Pond)	0	0	0	0	0	0	Present	0	0
Calumet Conservation Area 2	0	0	0	0	0	0	Not detected	0	2
Lake Calumet Conservation Area	0	0	0	0	0	0	Not detected	0	4
Hyde Lake	0	0	0	0	0	0	Not detected	0	3
Roxana Marsh	0	0	0	0	0	0	Present	0	0
Strawberry Island	0	0	0	0	0	0	Present	0	11
DuPont	3	0	0	1*	1	10	Present	2	13
Ivanhoe	0	0	0	0	1	0	Present	0	0
Pine Station Nature Preserve	2	0	0	0	0	0	Present	0	0
Clark and Pine	2	0	0	0	0	0	Present	0	3
Tolleston Ridges/Gibson Woods	0	0	0	0	0	0	Not detected	0	0
Kennedy To Cline East	0	0	0	0	0	0	Not detected	0	0
Kennedy To Cline West	0	0	0	0	0	0	Not detected	0	0
Wolf Lake Pool 6	0	0	0	0	1	3	Present	0	1
Wolf Lake Pool 5	0	0	0	0	0	0	Present	0	0
Wolf Lake Management Unit 9	0	0	0	0	0	0	Present	0	1
Sand Ridge Nature Center	1	0	0	0	0	0	Present	0	0
Total	17	2	0	5	6	15	n/a	5	110
% sites occupied	32	7	0	14	21	18	64	11	57





Incidental observations of secondary focal species

Little Blue Heron

A review of eBird data and other outside observations discovered the following significant observations within the Calumet region. An adult Little Blue Heron was observed at Indian Ridge Marsh north on June 4-5, 2016. A juvenile Little Blue Heron was photographed at Big Marsh on August 6, 2016.

Snowy Egret

An adult Snowy Egret was present at 126th St. Marsh from late May 2015 to early July 2015. Another was present at Wolf Lake Pool 5 in late April 2015. Another adult was alternating between Wolf Lake Pool 5 and Strawberry Island during April-June 2016. Walter Marcisz photographed a single Snowy Egret at Burnham Prairie on June 12, 2016. NIRMI volunteer Libby Keyes recorded a single Snowy Egret at Kennedy to Cline West on June 6, 2016 (not during her official survey).

Yellow-headed Blackbird

Two Yellow-headed Blackbirds lingered at Big Marsh until early May 2016 but did not attempt to breed.

American Bittern

One American Bittern was seen at Big Marsh on May 1, 2015 by Walter Marcisz and Caleb Putnam, and was clearly a migrant. Migrants were also observed at Hegewisch Marsh on May 3, 2016, at Burnham Prairie on April 18, 2016, and Sand Ridge Nature Center on May 3, 2016. Much more surprising was the presence of two individuals at DuPont on June 8, 2016, strongly suggestive of attempted breeding, and two individuals at Powderhorn on May 15, 2016, also somewhat suggestive of breeding (but possibly late migrants). Finally, American Bitterns summered at DuPont during 2013, 2014, and 2015 (P. Labus, pers. comm.) and were observed during summer at both Clark and Pine (three on June 16, 2016), and Pine Station Nature Preserve (two on June 16, 2016) during 2016. These represent evidence of attempted breeding, though no nests have yet been discovered.

Conclusions and Discussion

The marsh bird community of Calumet is in poor condition indicating a poor condition of the overall Calumet wetland system. The four primary focal species are all at or near historic lows and occupy a small proportion of Calumet's wetlands. Determining the habitat related bottleneck for each species and addressing it is the primary focus of this coalition's work. Relevant factors are: 1) a lack of water level management leading to either monocultures or open water lakes, 2) an over-prevalence of invasive plants, particularly common reed (*Phragmites australis*) and hybrid cattail (*Typha angustifolia x latifolia*), 3) lack of native vegetative diversity, 4) carp infestation leading to low food abundance, turbid waters, and decreased emergent cover, and 5) the presence of slag in the soil bed changing water chemistry and negatively influencing flora and fauna. Understanding the extent to which these factors limit avian use at each particular wetland will lead to effective site-specific strategies for improving and maintaining better habitats in the Calumet region.

There were no significant changes between 2015 and 2016 in site occupancy rates of primary focal species and key incidental focal species in the Calumet wetlands (Tables 5 and 6). This was expected because habitat rarely changes on the scale necessary to severely impact marsh bird populations within a one year timeframe. High occupancy for Pied-billed Grebes, Marsh Wrens, and foraging use by Black-crowned Night-Herons were evident both years. Low use was observed for Least Bittern, Sora, and Virginia Rail, and near zero use for Common Gallinules. King Rails, as expected, were not observed.

Secondary focal species continue not to breed in the Calumet wetlands (American Bittern is the important exception), but some are observed in small numbers annually. Occurrences of Little Blue Heron, Snowy Egret, and migrant Yellow-headed Blackbirds are somewhat indicative of quality hemi-marsh, but are largely dependent upon factors outside the control of land managers, especially random factors dictating northward vagrancy. American Bitterns, which primarily breed well north of the Calumet, were a pleasant surprise, and appear to be attempting to nest at more well-managed sites. This is a moderate indication of quality hemi-marsh, but may only be possible at sites with relatively large portions of habitat. We do not believe occupancy can be expected based solely on good habitat restoration work.

There are notable exceptions to the overall poor condition of the ecosystem. Several sites have received recent management actions to which secretive marsh birds have quickly responded. Hegewisch Marsh, for example, after a long period of no management action in the early 2000s, quickly became a cattail monoculture following a string of drought years. Water levels eventually returned to higher levels, and subsequent depletion of cattail by over-abundant muskrats and low cattail regrowth created an open water lake by 2010. In 2010 and 2011 active water level manipulation by Chicago Park District returned cattails as the dominant vegetation by lowering and raising the water level in response to changing cattail growth. At this site, active management of water levels, muskrat controls (ie. complete drawdown), and elimination of common reed, was what was needed to maintain a healthy proportion of emergent plants to open water and maximize secretive marsh bird occupancy.

Burnham Prairie tells a similar story, though with some notable differences. This site lacks a water control structure, and hence its water level is largely dependent upon rain. As of 2011 the site had become infested with common reed, so the first step was herbicide treatment. This was successful in removing this invasive from key areas of the marsh. However, subsequent high water levels since then have limited the regrowth of cattails and the main area of potential hemi-marsh is becoming increasingly open. Gaining the ability to manage the water levels, establishing native emergent plants, and continued treatment of common reed, has great potential to return this site to a more productive hemi-marsh and maximize avian occupancy.

Comparably, Eggers Grove also has no water level management structure, and so is also subject to rainwater inflow. Hemi-marsh still exists, but currently cattails are receding and water level control will need to be gained in order to moderate the downturn of emergent cattails. Any net loss of hemi-marsh is extremely difficult to reverse without this. Additional attention to any effects from beaver dams and potentially abundant muskrats also merit monitoring and quick response.

An additional threat to about half of the Calumet's wetlands is common carp (*Cyprinus carpio*). Carp deplete food resources directly and indirectly, prevent emergent plant growth and limit vegetative diversity by disturbing the benthos, and increasing water turbidity. The effects this has on the Calumet's secretive marsh birds is currently being investigated, but negative effects have been demonstrated on marsh birds in other regions, and we suspect carp management will be an important component of restoring the Calumet wetlands. This may require dikes or other structures to prevent re-entry of carp following control measures.

In 2017 we recommend several changes to the Calumet wetlands protocol. First, we recommend removing King Rail as a primary focal species, and adding both Sora and Virginia Rail as primary focal species. King Rail, although it is very rare at this latitude, is a very important species for the project, as any occupancy would be extremely noteworthy. It is state endangered in both Illinois and Indiana. But because it often responds to Virginia Rail "kek-hurrah" vocalizations (C. Putnam, pers. obs.), we recommend removing it from the recordings. Sora and Virginia Rail are both moderately good indicators of hemi-marsh quality, although they occur in other cover types, and belong as primary focal species. Finally, we recommend adding Swamp Sparrow as an incidental focal species, as it is a good indicator of hemi-marsh habitat.

The Calumet wetland system presents a phenomenal opportunity for effective restoration. The partners of the Calumet wetland working group working and its partners look forward to developing collaborative management recommendations and strategies for land managers and measuring the resulting avian response.

Recommended Citation

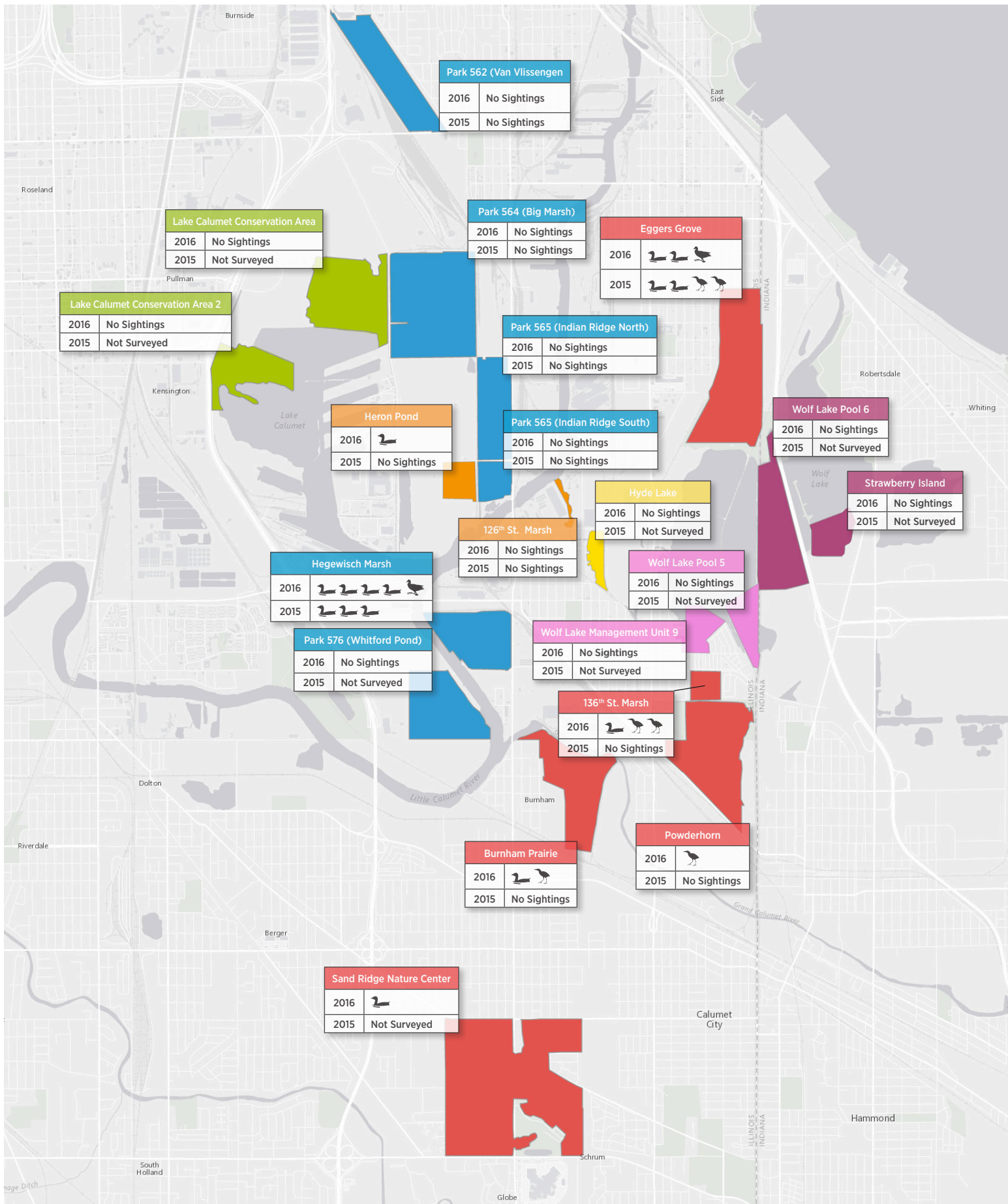
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CALUMET WETLANDS BIRD MONITORING



Primary Focal Species Territory Counts in 2015 and 2016.



Pied-billed Grebe



King Rail



Least Bittern



Common Gallinule



