

Madison Audubon Society's Goose Pond Sanctuary



2019 Annual Management, Research and Education Report



Record high water on March 16. Photo by Josh Kluge from J1:9 Aerial Media



Flooded train tracks (left), drainage ditch that fills Goose Pond (right). Photos by Graham Steinhauer

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Section I: Staff, Committee & Board Members

Goose Pond Staff

Susan Foote-Martin and Mark Martin, Resident Land Managers
Graham Steinhauer, Resident Land Steward

Goose Pond Sanctuary Committee

Curt Caslavka	Jim Shurts
William Damm	Susan Slapnick
Janet Flynn	Greg Tiedt
Arlene Koziol	Topf Wells
Chuck Pils	

Madison Audubon Central Office Staff

Matt Reetz – Executive Director
Carolyn Byers – Director of Education
Brenna Marsicek – Director of Communications
John Minnich – Financial Manager

Madison Audubon Board of Directors

Roger Packard – Board President	Susan Knaack
Galen Hasler – Vice President	Lisa Lepeak
Topf Wells – Secretary	Olivia Pietrantoni
Joanne Jones – Treasurer	David Rihn
Pat Clark	John Shillinglaw
Patrick Eagan	Mareda Weiss
Matt Fortney	

Section II: Introduction

A.) Overview of 2019

This annual report provides information on community engagement, conservation activities, and other achievements that occurred at Goose Pond, Erstad Prairie, and Otsego Marsh for the year 2019. Thanks to everyone who volunteered on restoration, management, research and educational projects, and also to members and donors that provided funds or in-kind contributions to support the Sanctuary. In total this year, volunteers worked a staggering 2,754 hours! Volunteers and donors make it possible to peruse additional projects with real benefit to wildlife and people.

Volunteer Activity	Hours
Seed Collection	283
Prescribed Burning	88
Christmas Bird Counts	205
American Kestrel Project	1032
Songbird Box Monitoring	144
WI Breeding Bird Atlas II	800
Monarchs Tagging	38
Prairie Planting	64
Miscellaneous	100
TOTAL	2,754

B.) In Memoriam - John Kaiser (1942 - 2019)



John Kaiser. Contributed photo

We want to remember and recognize John Kaiser, a special friend to Goose Pond Sanctuary who passed away in July. John and Marlen proposed erecting the “Wingspan” observation area along Prairie Lane in honor of their family and Mark & Susan Foote-Martin, and contributed \$25,000 that was matched by others.

The Kaiser’s five generations of family history with Goose Pond goes back over 70 years. In the late 1960’s John joined the Madison Chapter of Ducks Unlimited (DU) and remembers when DU provided a generous donation to help acquire the first parcel at Goose Pond. John and his family became close friends of the Martins in the 1980s and we always enjoyed their visits. We miss John and remember him especially when we see large flocks of geese and mallards returning to Goose Pond. John wrote of his memories of Goose Pond Sanctuary:

“Over the years I have stood at Goose Pond in the fall during a sunset and felt the awe of literally thousands of Canada geese and ducks returning to their safe resting area. Often the spectacle brought tears to my eyes! I now look over the fantastic restored prairie with wonder and appreciation for the vision of the Martin’s and Madison Audubon... One recent year I brought my grandson Hayden from Ohio to the pond at sunset to experience the majestic return of the waterfowl to Goose Pond.... As the birds returned, they literally covered the beautiful western sunsetting sky. As they approached Goose Pond and started circling, the sound was so loud you could not hear to talk. He was alone about fifteen feet in front of me looking skyward and was simply spellbound by the experience. My heart exploded as I witnessed this as I knew he felt the same experience that I have known throughout my life - the magic of Goose Pond.”

C.) Year of High Water – Highlight of the Year

Goose Pond is a prairie pothole that is fed by precipitation and surface water run-off. Because of this, water levels change usually only two or three days a year during major run-off events. Goose Pond is normally four feet deep, but this spring it was at least seven-feet deep.



Goose Pond Road Looking north. Photo by Graham Steinhauer

On March 15, deep snow cover and ice, frozen ground, rain, and high temperatures resulted in record flooding and runoff levels. There was damage to road infrastructure, and many low-lying roadways in the area were closed or had high water advisories. In the 42 years that the Martins have resided at Goose Pond, water has only flowed west out of the pond to Lake Mendota on one other occasion. This year, 65 million gallons of water flowed west for four days lowering the water level on 200 acres by 12 inches. Forty-eight ephemeral springs were counted and springs were only seen once before in 1993. There was so much water that you could canoe or kayak from Ankenbrandt Prairie (northeast of Goose Pond) into Lake Mendota and only have to portage around bridges and culverts.

Small water bodies at Goose Pond dry up by late spring in most years. The open water of Goose Pond is usually about 60 acres, but this spring its shoreline expanded onto farmed wetlands and



Smartweeds in a flooded field. Photo by Graham Steinhauer

lowlands to encompass 200 acres. Smartweed, water plantain, and sedges germinated and flowered in crop fields that have been in corn or soybeans for over 20 years, illustrating the seed longevity of some wetland plant species. The 200 acres of water/ice are still present this winter. Wetland birds and muskrats were the primary beneficiaries of the high water that provides greater foraging opportunities, more space for individuals, and a higher diversity of wet habitats.

Section III: Interns, Education & Outreach

A.) Interns & Employees

Goose Pond Summer Intern – Tanner Pettit

Tanner Pettit is pursuing his degree in Wildlife Ecology at UW-Madison. He worked as a Prairie Partner intern during the summer of 2018. Because of his hard work, experience, and can-do attitude, Tanner was asked to return as the Goose Pond intern during the summer of 2019. Tanner and Graham worked together every day and killed more wild parsnip, sweet clover, and reed canary grass than any pair east of the Mississippi. Tanner also helped with bird banding, bird counts, and bat surveys.

Tanner Pettit working on the BBA II. Photo by Graham Steinhauer



Prairie Partners Summer Interns

Madison Audubon, Groundswell Conservancy, Lakeshore Nature Preserve, Pheasant Branch Conservancy and Pope Farm Conservancy dubbed *The Prairie Partners* specialize in habitat restoration and again collaborated to fund five interns. Interns rotate to different sites each day of the week and work for 12 weeks. They work at Goose Pond every Friday. The goals of this



internships are to provide valuable field experience, educate prospective conservation advocates, and achieve land management goals of the Prairie Partners. We appreciate the work of these interns during 2019 and wish them well in finding future employment in the field of natural resources.

Prairie Partner interns (left to right) – Rachel Mortensen (UW Stevens Point), Margaret Johnson (UW Madison), Calla Norris (UW Madison), Dane McKittrick (UW Madison), Tucker Sanborn (UW Madison). Contributed photo

Fall Seed Collection Employees

We hired Jean Traeger, Rachel Barker and Calla Norris to collect prairie seed this fall. They did an excellent job collecting seeds and leading volunteers. Fall seed collection is probably the single best way to become familiar with plant identification and the requirements for planting a prairie. All are pursuing jobs in conservation.

Jean Traeger surrounded by seeds. Photo by Graham Steinhauer



B.) Wings over Water – IMAX Production Comes to Goose Pond Sanctuary

We were contacted by Archipelago Films of New York to discuss the idea of their company filming wetlands and migrating birds at Goose Pond as part of an IMAX production. We welcomed the opportunity to learn more about the production that would contain footage of the property and



IMAX crew. Photo by Arlene Koziol

have a chance to work with this enthusiastic and professional group of filmmakers.

Wings over Water is a high-quality production and you can view the trailer at: <https://vimeo.com/367287013>. The production follows the life history of sandhill cranes, mallards, and yellow warblers to illustrate the importance of prairie pothole wetland ecosystems in the United States heartland. The crew was at Goose Pond for four days of filming and focused on mallards, sandhill cranes, Canada geese and other

wildlife. Chris Dorsey, Executive Director of Dorey Pictures headquarter in Denver, grew up in DeForest and is the Executive Producer of the IMAX film. The film will be released in 2021.

C.) Presentations and Tours

- February- Mark gave a presentation at the Wisconsin Wetlands Association Conference on installing wetland scrapes using the scrapes created at Goose Pond in 2018 as a case study.
- April- Tour of Goose Pond for residents of Oakwood Village
- May- MAS field trip tour of Erstad Prairie
- June- Graham presented at the Energy Fair in Custer, WI on the process, methods, and tips and tricks for making a prairie restoration successful.

- June- Toured the sanctuary with Russ Hefty (Goose Pond’s first intern and recently retired Conservation Resource Supervisor for Madison Parks), Natural Resource Conservation Service Biologist Tally Hamilton, and MAS board members
- July- Mark and Matt Reetz gave a tour to Rebecca Sanders, Executive Director of Great Lakes Audubon (our regional Audubon office)
- August- Graham and Tanner led an education talk for Conservation Academy Operation Fresh Start at Goose Pond with a focus on careers in natural resources. They also discussed bird banding, prairie burns, and land management.

D.) Friday Feathered Features

Madison Audubon’s *Friday Feathered Feature* is a weekly column. We feature birds, other animals, and events related to Goose Pond. We try to make the features educational and encourage visitors to come out and view the birds. For the most recent Friday Feathered Features from both Goose Pond and Faville Grove, visit [Friday Feathered Feature](#) on the Madison Audubon [Website](#).

Date	Title
13-Dec	Goose Pond: then and now
22-Nov	Wings over Water - IMAX Production Comes to Goose Pond Sanctuary
8-Nov	Cedar Grove turns 70
25-Oct	Not-So-Spooky Bats
11-Oct	The (ongoing) tale of the elusive Whooping Crane and Goose Pond Sanctuary
27-Sep	Welcome to Fall Migration
13-Sep	Monarch Mania
30-Aug	Breeding Bird Atlas II – Thanks for The Memories
16-Aug	Rusty patched bumble bee
2-Aug	Great Egret
19-Jul	American Bittern
5-Jul	Green-winged Teal
21-Jun	Red-shouldered Hawk Banding
31-May	American Kestrels: 2019 adult banding results
17-May	Sora
3-May	A Banner May: Goose Pond bird count
4/19	Sandhill Crane
5-Apr	Scaup
22-Mar	Common Goldeneye
8-Mar	Crows, and Blue Jays, and West Nile, oh my
22-Feb	The 2019 Great Backyard Bird Count in a Tough Winter
8-Feb	Puerto Rico: Winter Habitat for Birds and Humans
25-Jan	Snowy Owls Galore
11-Jan	Goose Pond's 2018 Christmas Bird Count

If you are not viewing this report electronically but wish to access these FFF articles, simply google “Madison Audubon Friday Feathered Feature” followed by the article title.

Section IV: Wildlife

A.) Birds

Wisconsin Breeding Bird Atlas II, Fifth and Final Year

The field work for the five-year Atlas II project is in the books. We were very pleased with the effort put forth by 192 participants who submitted 2,445 checklists and confirmed 136 species nesting in Columbia County. A highlight this year was Brand Smith finding the first pair of black-necked stilts nesting in Columbia County. The pair ended up raising four youngsters.

A core team of birders spent many days this past summer working in teams to complete the 18 priority blocks, surveying other blocks and surveying for selected species. Volunteers spent additional time surveying Morrisonville Central West and Morrisonville Northeast which are not priority blocks and contained Madison Audubon property. Much of Goose Pond Sanctuary lies within the Morrisonville CW block where 81 atlasers searched 118 hours, submitted 215 checklists and confirmed 60 breeding species.

Wetland birds of note confirmed nesting at the pond include northern shoveler, gadwall, green-winged teal, hooded merganser, ruddy duck, Virginia rail, sora, common gallinule, American coot and American bittern. Green-winged teal were only found nesting in 22 blocks state-wide. In addition to the brood found at Goose Pond there was another brood in the adjacent block within one-half mile from our Sanctuary.

Two rare finds were a pair of eared grebes and a pair of black-necked stilts that were listed as “probably” nesting. If the eared grebes had been successful this would have been only the second confirmed nesting in Wisconsin with the other pair found with a brood in 1968 in Dunn County. The pair of stilts set up a territory in shallow wetlands on the north side of the west pond and were observed copulating but then moved on.



Black-necked stilt. Photo by Arlene Koziol



Hen green-winged teal found with a brood at Goose Pond. Photo by Richard Armstrong

The Morrisonville Northeast block contains Madison Audubon's Erstad Prairie Sanctuary and Schoeneberg Marsh Waterfowl Production Area. Ninety-five atlasers searched 147 hours, submitted 180 checklists and confirmed 74 breeding species. Interesting wetland birds confirmed nesting include trumpeter swan, gadwall, redhead, ruddy duck, red-necked grebe, Virginia rail, common gallinule, American coot, American woodcock, American

bittern, least bittern, black-crowned night-heron, and yellow-headed blackbird. One interesting find around the wetlands in dead snags were red-headed woodpeckers nesting in four areas.

Now the data tabulation begins along with preparation for publication of the Breeding Bird Atlas II book. The Breeding Bird Atlas III project will begin in 2035. We hope that at least as many or more species and numbers will be found then as were found this time. Thank you to all the atlas volunteers. They dedicated an extraordinary amount of time and effort to this project.



Red-shouldered hawk banding. Photo by Arlene Koziol

Red-Shouldered Hawk Banding

As part of the WI Breeding Bird Atlas II, we focused on red-shouldered hawks and found eight nesting pairs. Red-shoulders prefer floodplain forest habitat and the birds/nests we found were around the confluence of the Baraboo River and the Wisconsin River. Gene and John Jacobs and Goose Pond staff and volunteers banded at two nests on June 6.

Three healthy young were banded at the first nest. An aggressive parent that landed in the nest tree to feed young scolded John while he was at the nest. A single individual was found at the second nest along with a youngster that had fallen out of the nest before we arrived into several inches of water. After drying the youngster, it was banded and placed back in its nest. More information on this banding effort can be found online at the [Red-shouldered Hawk Banding](#) Friday Feathered Feature on the [MAS website](#).

Purple Martins

The best purple martin nesting box is a cross-shaped structure with 14 deep nesting cavities, commonly referred to as a “T-14” box. One Amish business constructs and sells boxes and posts. Plastic gourds that imitate the traditional gourds used by Native Americans to host purple martins but now feature screw-off sides for ease of cleaning, are also used for nesting structures. A culture of family involvement and family pride in caring for purple martin colonies is a huge contributor to the success of the colonies at Amish homesteads. Many families make it a weekly activity to monitor, clean, and remove house sparrow nests from their boxes.



*Banded purple martin young.
Contributed photo*

Dick Nikolai of the Wisconsin Purple Martin Association joined Goose Pond staff, volunteers, and field trip attendees on July 16 and 17 to band young and assess colony health. We focused on the Amish country where Columbia, Green Lake and Marquette counties meet. We ended up banding 526 young at six Amish homes. The three-year data set contains information on 1,851 banded purple martins (468 in 2018, 45 also were banded with red colored bands, and 839 in 2017).

Songbird Nest Boxes



Tree swallow. Photo by Arlene Koziol

Every year Goose Pond staff and volunteers monitor and maintain songbird nest boxes. Data were also reported to the Bluebird Restoration Association of Wisconsin. At Goose Pond Sanctuary and Erstad Prairie, a total of 92 boxes were monitored and they fledged 5 bluebirds, 19 house wrens, and 321 tree swallows.

We fledged very few bluebirds, but this is not surprising considering bluebirds prefer short or even mowed grasses as opposed to the tallgrass prairie that covers most of Goose Pond. We're proud to have fledged this many tree swallows, especially since tree swallow numbers [declined 49% between 1966 and 2014](#).

American Kestrel Nest Box Program

Madison Audubon couldn't be prouder of our American kestrel nest box program. We have the largest system of monitored boxes in the state, and perhaps the second largest in North America. Brand Smith coordinates the program with assistance from 40 volunteers who erect and monitor boxes. Thanks to all, especially Brand Smith and William Damm for building the boxes! Fifty-five of our 171 boxes in an eight-county area were used by kestrels in 2019. Many of the boxes are located in south-central Columbia County, especially around Goose Pond Sanctuary. Other species including eastern bluebirds, tree swallows, house wrens, screech owls, and even hooded mergansers and wood ducks have used the nest boxes. Thanks to Pat Ready who found that if you remove a starling nest and cover the hole with a paper cup for about 10 -14 days that in some cases kestrels will return and nest in the box.



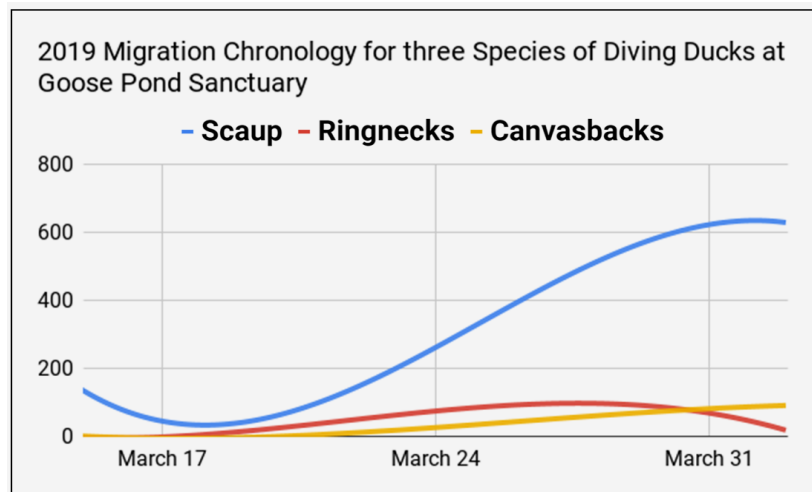
American Kestrel chicks. Photo by Graham Steinhauer

Janet Eschenbauch and her crew from the Central Wisconsin Kestrel Research Center banded 89 chicks (48 females and 41 males) and caught 26 adults (20 females and 6 males) in south central Columbia County. Seven of captured adult females were already banded and the remaining 19 adult received bands. A young male kestrel fledged in the summer of 2019 from a box at the UW – Research Farms was found dead 10 miles directly south on a runway at the Dane County Airport on July 29. MAS members were invited to assist with and observe the banding of young kestrels as part of a MAS field trip. Nest locations and data were provided to the Western Great Lakes Bird and Bat Observatory and data were also entered in the Breeding Bird Atlas II.

Spring Migration

On March 29, we counted 620 lesser scaup at Goose Pond, a record high count since MAS staff started regular waterfowl surveys here in 1980. To be fair, the all-time high count of 800 scaup was reported by William Hilsenhoff on April 9, 1960. Scaup could be seen from Goose Pond Road or Kampen Road at ten yards or less

associating with canvasbacks, redheads, and ring-necked ducks. Runoff from snowmelt caused Goose Pond water levels to rise to unprecedented levels, and waterfowl of all kinds utilized the flooded landscape for food and rest. Scaup populations are in rough shape, but seeing hundreds of them wheel around Goose Pond sparks optimism for the future of this striking species.



As the birds of early spring moved out, they were replaced by huge numbers of later migrants like blue-winged teal, northern shovelers, pied-billed grebes, and American coots. Mark and Graham conducted a 3.5-hour bird survey on May 2, with a focus on waterfowl pair counts, and found 1,048 birds from 42 species! Duck pair counts included a record high number of 108 mallard pairs, 36 blue-winged teal, 15 northern shovelers, four green-winged teal, and 1 hooded merganser. Six pairs of ruddy ducks were counted later in the season.

Fall Migration

On December 1, Mark and J D Arnston counted 12,500 mallards (a record for Goose Pond) and 3,800 Canada geese. The previous high count of mallards was 5,000 seen by John Romano on November 11, 2010. In the early afternoon on December 2, Mark found a picked cornfield with 1,560 swans about 2.5 miles southwest of Goose Pond. Mark returned to Goose Pond and counted 1,050 swans on the pond. Graham watched the swans that were feeding in the cornfield return to Goose Pond near dusk and join the group that was already on the water. This means that the total

count was 2,610 tundra swans, which shattered the previous all-time high record of 1,100 swans set by Carl Schwartz's on November 9, 2017.

Many people frequently tell us "we saw a ton of birds at Goose Pond!" For December 1 and 2, this is an understatement. Actually, one could see 53 tons of birds at Goose Pond. The 2,610 tundra swans @ 15 pounds each = 19.6 tons, 3,800 Canada geese @ 8.6 pounds each = 16.3 tons, 12,500 mallards @ 2.2 pounds each = 13.8 tons, and 733 sandhill cranes were seen in migration heading southeast - 733 @ 9.5 pounds each = 3.5 tons. Grand total = 53 tons of water birds!

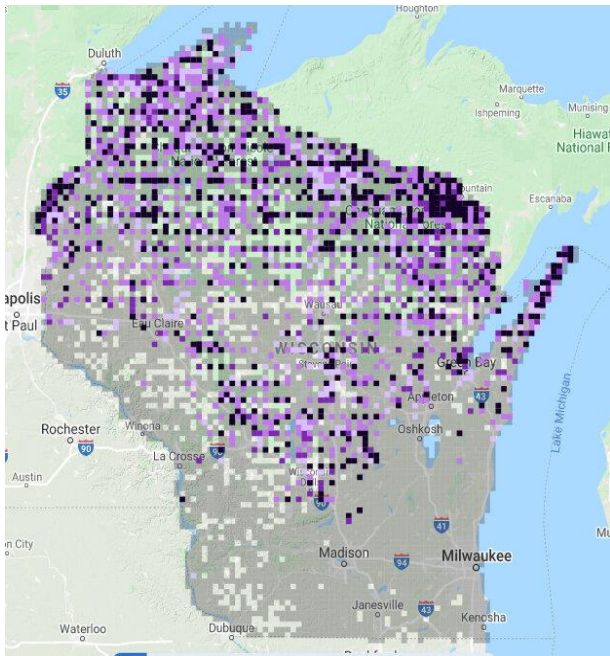


Swans and geese. Photo by Mark Martin

Poynette Christmas Bird Count (CBC) including Goose Pond Sanctuary

The count was postponed until January 4, 2020, due to weather conditions. Thirty-four field observers walked 17 miles and drove 495 miles and 11 families counted at feeders. Fifty-two species and 7,792 individuals were found. Count numbers were lower than normal partly due to warm weather that kept birds in the field and not at feeders or roadsides.

The highlight was finding the first common raven in the 49-year history of the count. Diane and Becki Tomlinson had reported hearing a pair of ravens this fall from the woods that runs east of the DNR MacKenzie Environmental Education Center for about 1.25 miles. Finding the bird was a focus for this CBC. Becki Tomlinson took a hike in the wooded area on Tomlinson land, and within an hour she had a raven fly overhead that was calling. The first "common raven" for the Poynette Christmas Count was in the record book! Ravens are not "common" in Columbia County, and this



is the southernmost breeding area for them in Wisconsin. Other interesting finds were 15 tundra swans, 57 bald eagles, 140 sandhill cranes, 1 snowy owl (Columbia), and 1 ruby-crowned kinglet.

The four counters in the Goose Pond unit found 22 species and 651 individuals. Highlights included 125 Canada geese, 2 rough-legged hawks, 3 short-eared owls, 280 American tree sparrows, and 79 house finches. Thanks to everyone that helped. We are looking forward to the winter of 2020 which will be the 50th anniversary of the Poynette Christmas Bird Count.

BBA II map of common raven breeding. Black = confirmed, dark purple = probable.

Great Backyard Bird Count

In 2019 we kept a close watch at the bird feeders at both Madison Audubon residences at Goose Pond Sanctuary on Monday, February 18, the last of the four-day time period. The Martins also counted birds at feeders at their cabin (Wildland) north of Rio in Columbia County on Sunday, February 17. The GBBC gives us a snapshot of bird usage at our feeders in late winter. Despite the name, birds can also be counted and reported from anywhere, not just backyards. Nine of the 14 species observed at three feeder locations were in the top 10 species recorded world-wide in 2019.



Goldfinches on disease resistant feeder (left). Quality woody cover (right). Photos by Mark Martin

Factors contributing to the higher species count and higher number of individuals included cover from harsh winter wind, diverse habitat, the number and types of feeders, and the variety of seeds present. We find that the best seeds for us are black-oil sunflowers, medium sunflower chips, white millet, and suet. This year our sunflower chip feeders were new Wild Birds Unlimited Eco-clean feeders, which reduce disease transmission when birds congregate in high densities.

Great Backyard Bird Count (2019)	Kampen Road Residence	Prairie Lane Residence	Wildland
Wild turkey			8
Mourning dove*	58	50	23
Red-bellied woodpecker			1
Downy woodpecker*	1		3
Hairy woodpecker			1
Blue jay*			7
American crow*	2		4
Black-capped chickadee*	2	6	4
White-breasted nuthatch*			1
American tree sparrow	20		25
Dark-eyed junco*	10	10	65
Northern cardinal*	3		3
House finch*	15	15	3
American goldfinch		6	34
House sparrow	10		
Total Species	9	5	13
Total Individuals	121	87	182
*species that are usually found in the top ten species on the GBBC			

Banding Mourning Doves

Sara Kehrli, Columbia County Wildlife Biologist, banded mourning doves at Goose Pond for the **13th year** in a row in 2019! The DNR has a quota of mourning doves that must be banded every year to help determine harvest numbers. The excellent habitat at Goose Pond helps produce a lot of young mourning doves every year, and it is therefore easier to band them here.



Banded mourning dove. Photo by Mark Martin

In 13 years of banding, Sara has banded 646 mourning doves at Goose Pond. In the first 11 years of banding, 11 of these doves were reported by hunters, 8 from Wisconsin, and one each from Georgia (848 miles), Louisiana (904 miles) and Mississippi (775 miles) with a recovery rate of 2.0%. Last year Sara banded 10 birds with \$100 reward bands to check on recovery rate returns. Goose Pond staff and interns were lucky enough to be able to help with this project. Part of the assistance we lend is in emptying the traps throughout the day of brown-headed cowbirds, red-winged blackbirds and other non-dove species.

B.) Project Snapshot

Goose Pond Sanctuary has participated in the Department of Natural Resources (DNR) [Snapshot Wisconsin](#) program since the fall of 2017. Trail cameras are distributed state-wide and are placed on public or private land. Once the photos are uploaded, we classify them by species (or flag blank or human photos). The DNR uses this data to monitor wildlife populations across the state. Thanks to Jim Otto and Bob Bennicoff for helping classify the photos.



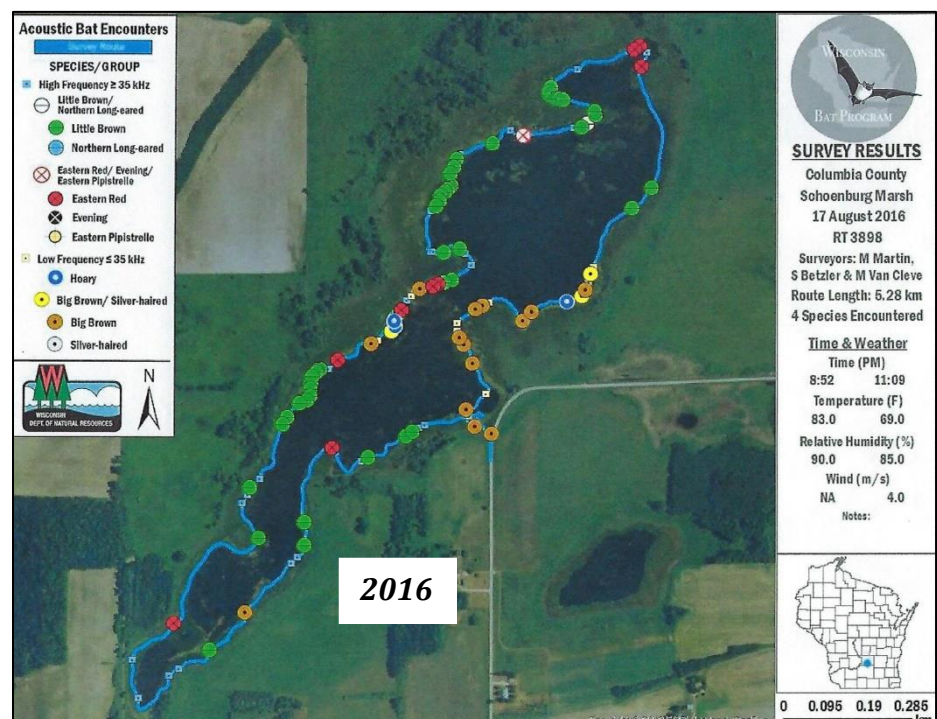
Our camera is in Jill's Prairie where three trails intersect, adjacent to restored prairie and cropland/wetlands. Our goal is to see the diversity in wildlife, seasonal use, and yearly changes in wildlife numbers. Common sightings in 2019 are deer, coyotes, sandhill cranes and ring-necked pheasants. With the high water this year we had numerous photos of Canada geese, mallards along with northern shovelers, a belted kingfisher, an American bittern, a snowy owl, and a short-eared owl.

Belted kingfisher. Photo by snapshot camera

C.) Mammals

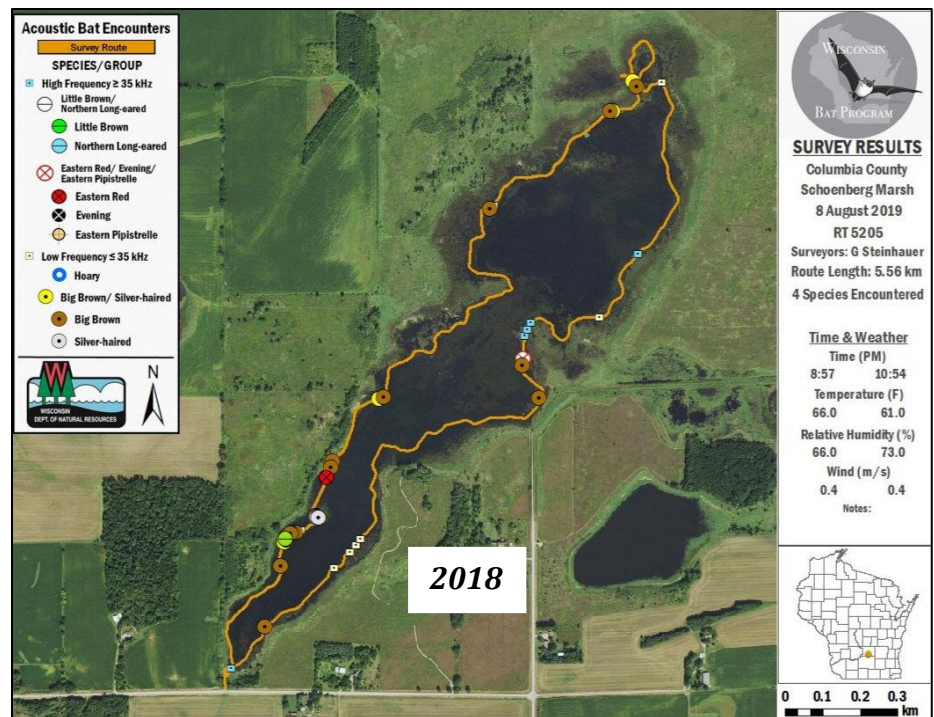
Bat Survey

Each species of bat emits their own distinct frequency while searching for food. Scientists developed bat survey equipment with this auditory footprint in mind. The machine “listens” for bats, determines what species was present, and adds the associated coordinates to create a bat survey map. Mark Martin, Sue Foote-Martin, and Brand Smith started conducting bat surveys at Goose Pond Sanctuary and Schoeneberg Marsh in 2008



and 2016. Bats found on past surveys in our area have included big and little brown, hoary, and eastern red bats. This baseline data is valuable in determining what bat species are declining most heavily.

On August 6, 2019, Tanner Pettit (summer Goose Pond intern) and Graham replicated a bat survey from 2016. Each symbol on the map represents one bat encounter. The results were sobering. As you can see from the bat survey map of Schoeneberg Marsh, bats of all species have declined sharply except for big brown bats since 2016. We found similar declines in densities and species composition of bats at Goose Pond.



Muskrat House Count



Due to the record high water levels, muskrat numbers greatly increased in fall of 2019. Graham counted 116 muskrat houses as compared to forty-nine houses in 2018. Muskrat biologists estimate that there are five muskrats living in each house. They are frequently seen grooming on the ice. Muskrats living in bank dens were not counted as their homes are not conspicuous.

Muskrat houses. Photo by Graham Steinhauer

D.) Amphibians

Frog and Toad Survey – 35 years and counting!

Data from the [survey](#) goes to the DNR Bureau of Natural Heritage Conservation. Mark and Sue have been completing the same ten stop survey route since 1984. There is an early, middle, and

late count to incorporate species during their unique calling phenology. Only the early survey was conducted this year due to prioritization of the Breeding Bird Atlas II, but chorus frogs, spring peepers, American toads, and Cope's gray treefrogs were found in high numbers. While this is not incorporated in the survey, Calla and Graham found 50 eastern gray treefrogs or Cope's gray treefrogs on the Prairie Lane house on a single night. These two species have identical physical characteristics, and can only be differentiated by call. A healthy gray or Cope's treefrog was found while doing shrub work with striking blue coloration.

Treefrog at the Prairie Lane house. Photo by Aidan Bakken



E.) Insects

Rusty Patched Bumble Bee

The rusty patched bumble bee was the first bee listed as endangered in the continental United States when it was official added to the federal endangered species list in 2017. In the 1900's, the rusty patched was abundant across the Midwest, eastern US, and southeastern Canada. Major contributors to declines in rusty patched populations are habitat loss, pesticide use, and pathogens. Recent surveys show that the range of the rusty patched has decreased dramatically over the last decade, and their overall population has decreased by at least 87%. This is one of the



reasons that we were ecstatic when Taylor Tai, a graduate student from UW Madison whose focus is on bumble bee habitat requirements, successfully captured and identified a rusty patched bumble bee at Goose Pond during a field trip. More bumble bee surveys in the future will shed light on the population, distribution, and density of rusty patched bumble bees at Goose Pond.

Bumble bee field trip. Photo by Graham Steinhauer

North American Butterfly Count

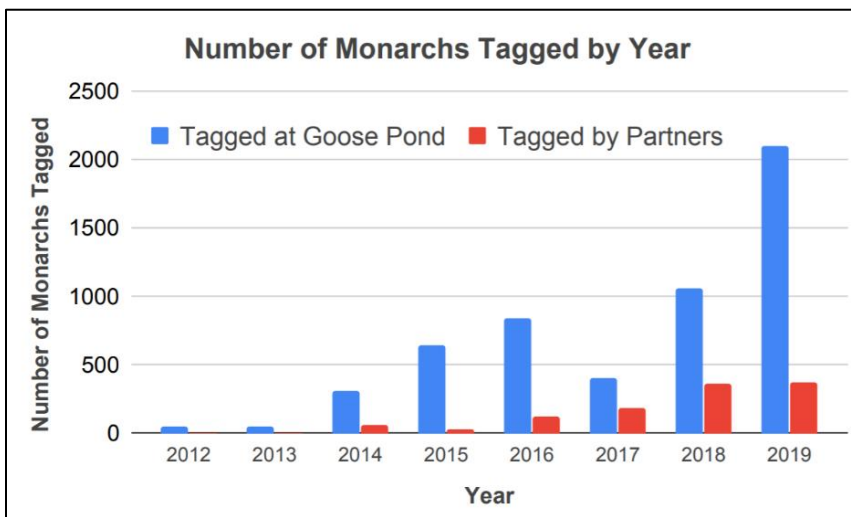
This was the sixth year we have participated in the National Butterfly Count. The count took place on July 1, and we found 14 species at Goose Pond. The first bronze copper was spotted since we've been participating in the count. High numbers of crescents and monarchs were observed.

Bronze copper. Contributed photo



Monarch Butterfly Tagging

This has been BY FAR our best year for monarch tagging. Throughout September and October, 2,100 monarchs were tagged at Goose Pond and 374 were tagged by partners in the Madison Area.



A whopping 735 butterflies were captured and tagged on September 14 alone. Thank you to volunteers and field trip attendees for making this possible. Since 2012, 5,456 monarchs have been tagged at Goose Pond. As we have found in previous years, showy goldenrod and meadow blazing star are the undisputed champions for monarch food sources.



2019 roost counts shattered records in previous years. September 9 and September 16 tie for the high count of 1,800 individuals, and roost counts averaged 920 monarchs throughout their migration season. These stats represent some very welcome news considering the drastic monarch population declines over the last two decades.

*Roosting monarchs.
Photo by Arlene Koziol*

Red-tailed Leafhopper and Prairie Dropseed

The red-tailed leafhopper (*Aflexia rubranura*) is a state-endangered prairie-obligate insect that uses prairie dropseed as its host plant. In line with our mission to increase invertebrate biodiversity, it is our goal to reintroduce the red-tailed leafhopper to Goose Pond Sanctuary. Past surveys have showed that there are approximately 35,000 prairie dropseed plants at Goose Pond which occur in high enough densities to support the red-tailed leafhopper. Scott Sauer, leafhopper expert, has been contracted to conduct the reintroduction.



Red-tailed leafhopper. Contributed photo

Twenty-five leafhoppers were transported from the Westport Drumlin, a unit of the Empire Prairies State Natural Area, to Goose Pond in 2018. One individual was netted at the release site in 2019. While that doesn't sound promising, remember that these individuals are very difficult to find, and the survey was not extensive. It means that the red-tailed leafhopper is indeed reproducing at Goose Pond. We introduced another 50 individuals (25 each from Westport Drumlin and Ziegler Prairie) to the same area in 2019 to better establish their population.

Section V: Plant Life

A.) Focus Plant Species - *Wood betony* (*Pedicularis canadensis*)

Tall grasses like Indian grass and big bluestem are aggressive plants that can take over prairies over time and decrease the density and diversity of forbs. Wood betony is hemi-parasitic on tall grasses meaning that it steals energy from them and makes the grasses less competitive, but also gets some of its energy through photosynthesis. We already have a well-established seed source for this plant, and we plan to interseed it into our existing prairies that currently lack wood betony. Wood betony promotes more pollinator forage, higher plant species diversity, and heterogeneous structure within grasslands.



Wood betony. Photo by Prairie Moon Nursery

B.) Plantings

Shortgrass Prairie Planting at Lapinski-Kitze Prairie

After being plowed up in the 1800s for wheat production, a 116-acre tract of land was purchased for industrial uses. The Arlington Canning Company (later called Del Monte) began operation in 1924, and it employed students, veterans, and even German POWs in 1944. Wastewater was piped out of Arlington and spread on the land using a center pivot irrigation rig on the northwest corner of Kampen Road and Goose Pond Road. During this time, the tract was dominated by reed canary grass that was cut weekly for livestock feed. Del Monte Arlington Canning closed its doors in 1997 and the tract returned to row crops. In 2003, the land was annexed from the Town of Arlington to the Village of Arlington and zoned for 168 homes.

Thanks to many generous donations, especially those provided by Elsie Lapinski and Louis Kitze (namesakes), the land was purchased by Madison Audubon in 2004. As of 2018, 63 acres had been restored to prairie and 53 remained in row crop. Rusty patched bumble bees (federally-endangered), silphium borer moths (state-endangered), northern harriers, short-eared owls, and a plethora of other wildlife have been observed in the LK Prairie restorations since the 2004 purchase.

On December 19, sixteen volunteers along with Goose Pond staff planted another 20 acres of the LK tract to prairie. Soils within the 20 acres range from dry mesic to wet habitats, and 102 native prairie species were mixed and hand broadcast over the area. **Some seeds of note include compass plant (7.5 lbs.), prairie dock (18 lbs.), prairie dropseed (40 lbs.), and rough blazing star (14 lbs.).** The view from Kampen Road facing north will be fantastic when the plants mature. We appreciate the hard work of volunteers who attended. It would have taken weeks without your help! In the near future we plan to restore the remaining 33 acres of the LK tract.



20 acres planted in the Lapinski-Kitze Prairie. **RED**- dry mesic, **ORANGE**- mesic, **YELLOW**- wet mesic, **PURPLE**- wet

Partner Planting- Prairie Planting at Koshkonong Prairie

David Gunnulson owns 330 acres of grassland on what was originally the Koshkonong Prairie. He currently uses the land to cut hay for horses. While this is excellent bird habitat in its current condition and bobolinks are a common resident at his property, we wanted to help him establish a diverse prairie planting for the benefit of insects, small mammals, and birds that prefer taller grass. Fifty-two prairie species were planted on 7.6 acres this December. Soils range from mesic to dry mesic conditions. Goose Pond has already planted prairie on 13 acres on the same property in other years. Thank you to the 13 volunteers who helped with this planting.



Planting crew. Photo by Calla Norris

C.) Invasive Plant Species

Shrubs

Invasive shrubs aren't prominent on the landscape when they're young, but if you don't eliminate them through burning or cutting, suddenly they're EVERYWHERE. That's why we're cutting and treating honeysuckle, sumac, cottonwoods, and others very aggressively. Brown Prairie, Wood Family Prairie, and Ankenbrandt Prairie were all completely cleared of invasive shrubs in 2019.

Reed Canary Grass

Reed canary grass is highly aggressive in wetter areas. For the past two years we've been focusing on burned areas. Here are the steps that we've been using.

1. Burn a prairie as usual
2. Spray resprouting reed canary grass in the spring with an herbicide that has residual properties. This kills off a good portion of the plant and suppresses germination of seeds in the seed bank.
3. Revisit the sprayed areas in late summer or fall and spray any remaining green leaves.

Other Herbaceous Plants

Wild parsnip, sweet clovers, and others continue to be a problem, but these plants are decreasing over time. It is highly effective to spray them in the spring after a burn and dig out any survivors in the summer. Leafy spurge is a "cancer on the prairies." Its growth habit and resistance to herbicides makes it almost impossible to kill. We found a 30' by 30' patch of it in 2018 and we're

throwing everything we've got at the leafy spurge to kill it and keep it from spreading. Always remember to clean the mud off of your boots and equipment as you travel between sites!

Section VI: Other Management

A.) Prescribed Burns

With the help of volunteers and Goose Pond staff we burned 78 acres on nine units at Goose Pond and 27 acres on five units on partner properties. Jeb Barzen of Private Lands Conservation LLC taught a prescribed fire class in the spring of 2019 through the UW Madison. He requires that each of his students participates in three burns with different organizations to gain experience. Seven of those students joined us on burns this spring. A separate class from the Community Environmental Scholars Program at the UW Madison Nelson Institute also joined us to help burn Sue Ames Prairie. The university wrote an article about the event called [Nelson Institute CESP students fired up to help at Goose Pond](#).



CESP student on a burn. Photo by Steven Touney

B.) Seeds

Seed Collecting

The main reasons that we collect seed at Goose Pond are to use in our own restorations and to assist partners with their plantings. Goose Pond staff and volunteers collected the seeds from 102



Seed collection volunteers. Photo by Graham Steinhauer

species and in no small amounts. **Some of our major hauls included stiff goldenrod (13 sacks), wild lupine (8 lbs.), cream gentian (5 lbs.), water plantain (48 lbs.), and white baptisia (152 pounds of pure live seed).**

We held seed collection days on eight Saturdays throughout the fall and averaged eight volunteers per day. On October 12, 49 volunteers from three groups (Goose Pond, UW Madison Biocore, and Poynette High School) helped with seed collection. We cleaned

more than 45 pounds of pure white baptisia seed from that day alone! Some of these volunteers are familiar faces that have been with us for many years and others were brand new. This resulted in a high-quality learning experience for newcomers, a fulfilling social opportunity, and efficient seed collection.

Partner Seed Cleaning

We allow partners to use our seed-cleaning equipment to help them create additional prairie habitat. Partners using the equipment this year included Pleasant Valley Conservancy, Middleton Parks, Department of Natural Resources (Adams, LaCrosse, and Green Bay State Natural Area crews), Pope Farm Conservancy, and the Town of Dunn.

Seed Donations

Dane County Parks manages over 12,000 acres of land for wildlife and the public. These areas include wildlife areas, cultural sites, dog parks, and others. We donated 150 pounds of pure live Indian grass seed and a lesser amount of big bluestem to Dane County Parks. This should be enough grass seed to help restore at least 60 acres.

In the fall, we donated \$11,000 worth of seed to the WI DNR to be planted on 40 acres at the French Creek Wildlife Area. Columbia County Pheasant Forever members also helped with collecting the seed. This dollar value will be leveraged by DNR Pheasant Stamp funds to generate \$20,000 in funding to be used for prairie burns on state wildlife areas in Columbia County.

Section VII: Erstad Prairie & Otsego Marsh

A.) Erstad Prairie

Erstad Prairie is a 60-acre parcel that is adjacent to the U.S. Fish & Wildlife Service's 726-acre Schoeneberg Marsh Waterfowl Production Area. We interseeded prairie species into a 16-acre brome field in 2018. This summer we mowed that field to keep young seedlings from being outcompeted by the brome grass. Aggressive sand willows were also mowed to keep them from expanding into the brome field.

Invasive plants at Erstad Prairie include wild parsnip, spotted knapweed, and sweet clovers. These plants were controlled with a combination of herbicide and hand digging. There is also a small patch of crown vetch at Erstad Prairie within a high quality seven-acre dry mesic prairie. This patch is being monitored closely and new stems are sprayed with herbicide.



Common milkweed at Erstad Prairie. Contributed photo

B.) Otsego Marsh

Otsego Marsh is composed of wetlands, an oak woodland, and a declining pine plantation. Because the pines are dying, more light is hitting bare ground over time and allowing invasive plants to take hold. This spring we planted swamp white oak, paper birch, red osier dogwood, and other saplings into the area to help develop a healthy forest and compete with invasive plants.

Section VIII: Past Highlights

For many years Mark and Sue picked one important event to be the highlight of the year. These highlights tell of important natural events on the property and also show the great progress that has been made as a result of expanding the sanctuary. Below is a selection of these highlights from past years:

1990 – 30,000 mallards use Otsego Marsh as staging area during migration

1991 – 1,200 snow geese in fall at Goose Pond

1993 – Record rainfall – 16 inches in June and July

1994 – Large numbers of waterfowl, pheasant and gray partridge broods

1996 – Sandhill cranes return to nest at Goose Pond Sanctuary after 100-year absence

1997 – Snowy owl invasion in January and February on the Arlington Prairie

2000 – Willy Hutcheson’s sighting of six species of geese at one time at Goose Pond

2002 – Goose Pond went dry – lowered water levels provided excellent shorebird habitat

2003 – Acquisition of 1,730 acres at Goose Pond, Rose Lake & Zeloski Marsh

2004 – Acquisition of the 116-acre Northern Prairie (now known as Lapinski-Kitze Prairie)

2005 – Great gray owl added to Goose Pond bird checklist

2006 – A flock of 41 American avocets sighted in April at Goose Pond

2007 – Acquired the 17 – acre Kampen Road residence.

2012 – Tagging 50 monarch butterflies at Goose Pond.

2014 – Sighting seven snowy owls at Goose Pond at one time

2015 – Silphium borer moths (state-endangered) discovered at Goose Pond and tagging of a snowy owl named “Goose Pond”

2016 – Graduate student Heather Inzalaco documents 51 species and 1,663 pairs of breeding birds at Goose Pond

2017 – Construction of “Wingspan” viewing pavilion, and seeing six species of geese at one time on Goose Pond, including a brant in March

2018 – Goose Pond Sanctuary celebrated its 50th anniversary. In recognition, seven wetland scrapes were installed as a lasting gift to wildlife.

2019 – Record high water levels from March 15 through December 2019, and at the end of the year over 200 acres of water was still present. We also detected the federally-endangered rusty-patched bumblebee for the first time.