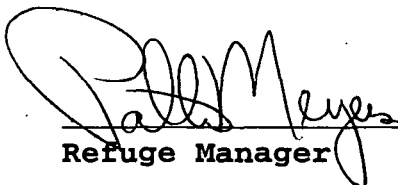


Horicon National Wildlife Refuge

Mayville, Wisconsin
Fiscal Year 2002

 4/21/03
Refuge Manager Date

 4.28-03
Refuge Supervisor Date


 4.28.2003
Regional Chief, NWRS Date

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Introduction

Horicon National Wildlife Refuge was established in 1941 for the protection and preservation of migratory waterfowl. It is located on the west branch of the Rock River in southeastern Wisconsin, 43 miles west of Lake Michigan and 65 miles northwest of Milwaukee. The Refuge comprises the northern two thirds (21,417 acres) of the 32,000 acre Horicon Marsh, a shallow peat-filled lake bed gouged out by the Wisconsin Glacier thousands of years ago. This basin is 14 miles long and from 3 to 5 miles wide. Horicon Marsh is bounded on the east by a sharply rising ridge of the Niagara escarpment which rises approximately 250 feet above the marsh to an elevation of 1,100 feet. The land to the west of the Refuge rises slowly and is dotted with many small potholes and several shallow lakes. Horicon Marsh is located in the upper reaches of the Rock River watershed. Major land types identified on the Refuge include 16,956 acres of wetland, of which the majority are classified as deep, freshwater marsh; and 4,301 acres of uplands, including 410 acres of forest land and brush land habitat. The southern third (11,000 acres) of Horicon Marsh is managed by the Wisconsin Department of Natural Resources as a wildlife area and fur farm for hunting, fishing and other public use activities. In 1990, Horicon Marsh was designated a "Wetland of International Importance" by the Ramsar Convention, an intergovernmental treaty that obligates 45 signatory nations to consider wetland conservation through land use planning, wise use of wetlands, establishment of wetland reserves, and wetland research and data exchange. In 1997, the Horicon Marsh was accepted as a Globally Important Bird Area in American Bird Conservancy's United States Important Bird Areas program. The marsh was accepted for this recognition for several reasons, one being that more than 30 percent of the Mississippi Flyway Canada geese migrate through the marsh during the fall, and approximately two percent of the biogeographic population of mallards migrate through during the fall, with impressive numbers of other waterfowl.



Climate Data

Climatological Review - 2002

<u>Temperatures (in Fahrenheit)</u>						
Month	2002 Average		Normal *		2002	
	High	Low	High	Low	Highest Recorded	Lowest
January	36.0	20.8	26.0	13.3	52.9, Jan 10	-1.1, Jan 19
February	39.4	22.2	30.2	15.8	58.8, Feb 25	4.8, Feb 4
March	38.5	21.6	39.2	24.9	54.0, Mar 9	-11.4, Mar 4
April	57.4	38.6	53.5	35.6	87.3, Apr 16	21.6, Apr 6
May	65.0	44.0	64.8	44.7	84.2, May 31	29.7, May 18
June	79.4	59.5	75.0	54.7	90.9, Jun 30	45.0, Jun 3
July	86.3	63.7	79.8	61.1	94.8, Jul 22	52.3, Jul 12
August	82.3	59.9	78.4	50.2	91.4, Aug 1	49.8, Aug 18
September	77.7	54.5	71.2	52.5	91.0, Sep 8	36.5, Sep 24
October	55.7	38.6	59.9	41.9	83.5, Oct 1	25.9, Oct 16
November	45.4	27.3	44.7	29.9	69.8, Nov 19	11.5, Nov 27
December	37.1	20.6	32.0	18.2	52.9, Dec 31	4.6, Dec 4

* Data from the National Weather Service Bureau, Milwaukee, Wisconsin

Rainfall (in inches)

Total for the year
Greatest in 24 hours

Actual

27.49
1.42" on June 14

Normal

18.01

Snowfall (in inches)

Calendar Year 2002
Greatest in 24 hours

Actual

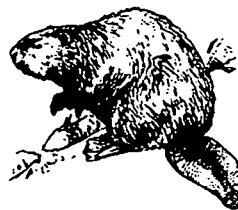
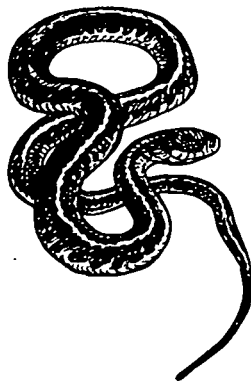
31.5
9" on March 2

Normal

47.6

Climatic Highlights

Winter was mild this year. January's temperatures were much warmer than normal in the thirties and forties, even hitting the fifties. Because of the warmer temperatures, many of the waterfowl never left the area. Over 300,000 Canada geese and other waterfowl were counted in southeast Wisconsin during the mid-winter waterfowl count. February and March saw temperatures hitting the upper forties and lower fifties. The mild temperatures made winter time much easier on the wildlife. Spring and summer weather patterns were typical with average temperatures and precipitation. Fall was extremely mild with November temperatures during the nine-day deer gun season in the forties and fifties. December remained mild with temperatures mostly in the forties and fifties, ending the year December 31st at 53 degrees. With the warmer temperatures in fall and winter, instead of receiving snow, precipitation fell as rain. There was no measurable snow during October, November, or December. Drought conditions were increasing with the lack of precipitation during fall and early winter.



1

Monitoring and Studies

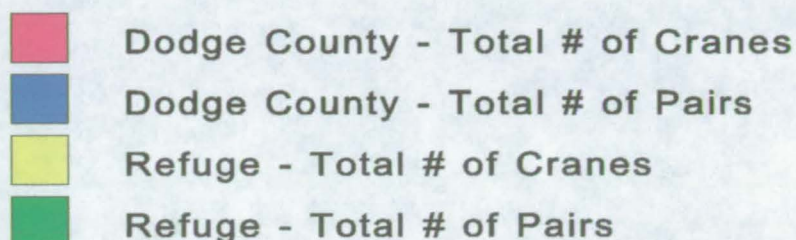
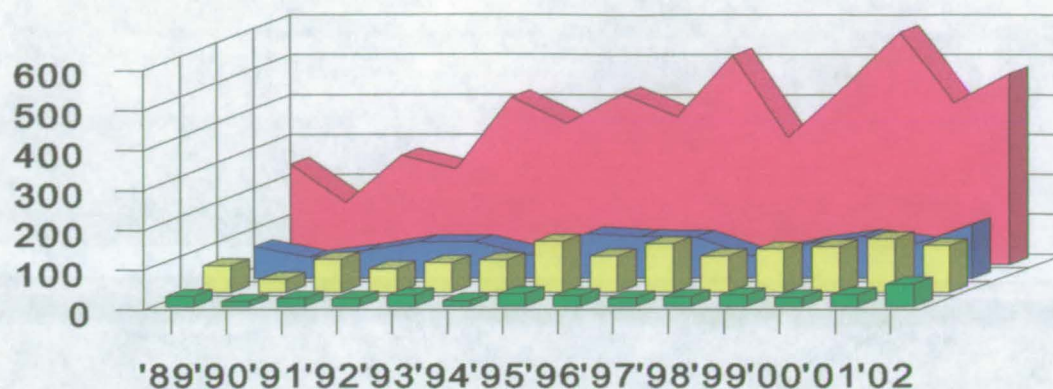
1a. Surveys and Censuses

The **waterfowl and rail data** for this section has not been compiled yet due to the vacant biologist position. The missing 2002 data and information for this section will be compiled by the new biologist and added into the 2003 narrative.

American white pelicans have been seen routinely during the summer since 1996. The first nesting attempt occurred in 1999 with 13 nests with eggs found on Hilton and S. Bush Islands. Unfortunately, none of the nests were successful. With the carp treatment in 2000 and the subsequent reduction of easy fishing, the 2000 summer population of pelicans did decline but another nesting attempt was made. Nesting in 2001 was excellent and even better in 2002. In 2002, the number of young found on the **colonial bird nesting survey**, conducted on July 5, 2002, was 335, compared to 152 in 2001. Peak populations in both 2001 and 2002 have been well over 1,100.

A pair of **bald eagles** successfully nested in 2000 for the first time, fledging two young. However, no activity was found when that nest was checked several times spring of 2001 and 2002. In spite of no "apparent" nests, bald eagle sightings were frequent through most of 2001 and 2002. In 2002, both adults and immature bald eagles were seen frequently on the northern part of the refuge. Finally in early December of 2002 during the wildfire, a nest was discovered on the Potato unit, south of Old Marsh Road.

Sandhill Crane Count



The refuge again coordinated the Dodge County Sandhill Crane Count as part of the 27th annual midwestern count coordinated by the International Crane Foundation. This year, 127 people participated, counting 58 sites (out of a total possible 62 sites), including all 13 refuge sites. In Dodge County they observed 479 individual cranes and 136 breeding pairs. On the Refuge, they observed 118 individual cranes and 56 pairs. Fog cloaked much of the county during the count, making birds invisible to the eye and countable mostly only by ear. The count was held on April 13, 2002.



Red-necked grebe, a very unusual sighting for us.



The most exciting sighting of the year was "Number 7" of the whooping crane class of 2001. When the other birds returned in the spring to Necedah National Wildlife Refuge, number 7 decided to stop and stay at Horicon Refuge for the summer. She was monitored daily by Refuge staff via the transmitter that she wore on her leg. She was often seen, first in Radke pool and then later in Teal pool, as well as in surrounding farm fields during the day, although she roosted every night on the Refuge. She was usually seen with a group of sandhill cranes. She was first sighted on the Refuge on June 25 and departed for Florida with the sandhill cranes on November 15. She made the journey in an amazing six days and was the first bird

the first bird to return to the winter roosting pen – as staff were setting it up! Refuge staff and many excited birders hope that she returns in the spring of 2003 and better yet, hopes she returns with a mate!

Since 2001, a **roadkill survey** along Highway 49 has been conducted. The road kill survey is conducted daily most of the year and less frequently in winter. Once the marsh is frozen, dike trapping has started, and/or snow starts to accumulate and become plowed, frequency decreases from M-F daily to M-W-F to not at all. The survey is conducted at the same time of day, between 7:00 am and 8:00 am.

This survey will be conducted for at least one more calendar year. The Friends of Horicon NWR has established a task force to research the traffic safety/roadkill issue and will need relative and comparable data if changes are made on Highway 49 as a result of their efforts.

The results from 2002 follow.

Road Kill on Hwy. 49 – CY2003

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	TOTAL
Muskrat	3	6	50	315	117	33	38	70	44	113	18	35	842
Canada goose				2	18	11	7		1	1		1	41
Painted turtle				11	18	15	3		18	4			69
American coot				13	12	8	2	15	6	8			64
Least bittern					1	2		9					12
Red-winged blackbird				3	12	24	41	4	2		1		87
Yellow-headed blackbird					2	5	2						9
Raccoon	3	1	1	2	5	6	8	4	4	4	2		40
Mallard					6	2	5	3	4	6			26
Virginia opossum		1		3	1	1	2	2	2	10	3		25
Eastern cottontail rabbit	1				2	1			1			1	6
Great horned owl	1						1			1			3
Coyote			1										1
River otter				1	1								2
Ring-necked pheasant				1									1
Sora				1			1	2	1				5

American robin				1									1
Sparrow*				1			3	3		2			9
Blue-winged teal				1	1	1	1		1	1			6
Pied-billed grebe				1	3								4
**Frogs* and American toads				1			29	150	1,084	106			1,370
Common moorhen					8	4							12
Tree swallow					8		3	2	2				15
Redhead duck					1			2					3
Ring-billed gull					1		1		3				5
Warbler*					1								1
Yellow warbler					5	2		1					8
Yellow-rumped warbler					2					1			3
Bank swallow					1								1
Oriole*					1								1
Squirrel*					1								1
Wild turkey					1								1
Barn swallow					2	1	2						5
Snapping turtle					4	10	2	1	4	4			25
European starling						1		2					3
Woodchuck						2							2
Killdeer						1	1						2
Ruddy duck						1	2						3
Virginia rail						3	3						6
Brown-headed cowbird						1							1
Common grackle						1							1
Cedar waxwing							1						1
White-tailed							1		1	2			4

deer													
Gray catbird						1							1
American goldfinch						1							1
Black-crowned night heron						1	1						2
Common yellowthroat						1	1		1				3
Marsh wren							1						1
Thirteen-lined ground squirrel							1						1
Great-crested flycatcher							1						1
Red-tailed hawk							1	1					2
House cat							1		1				2
Great blue heron								1					1
Semi-palmated sandpiper								1					1
Swamp sparrow								1					1
Short-tailed shrew								1					1
Small rodents*								1	1	2	2		6
Snakes, mostly garter*									5				5
Shorebird*									1				1
Swamp sparrow									1				1
Shrew*									2				2
Bird*									1				1
Common snipe									1				1
Duck*										1			1
Red fox												1	1

Grand total: 2,764 (1,394 not including frogs/toads)

*Identified as specifically as possible.

** frogs and toads sometimes too numerous to count

1b. Studies and Investigations

Dr. David Shealer from Loras College in Dubuque, IA, continued working on black terns with his research topic: Population Demographics of nesting black terns. The researchers marked and followed 174 black tern and 21 Foster's tern nests and banded 332 black terns in 2002. Redhead pool and Radke pool supported the largest number of breeding black terns again this year. During the four-year study, black terns nested annually in five to seven discrete colonies and ten separate areas were used over this period (note, impoundments on the State end of the marsh were added this year as a colony). Black tern clutches were initiated as early as May 18 and as late as July 21. In all four years of the study, the distribution of clutch initiations was skewed towards later nests. As in previous years, estimates of productivity for black terns in 2002 were low in most impoundments. Predation was the primary cause of nest loss. Over the 4-year period, predation accounted for at least 48 percent, and possibly as much as 85 percent, of all nest failures.

Evidence from the past four years of this study suggests that certain areas of the Refuge, despite suitable nesting habitat and abundant food, are attractive sinks. Productivity estimates were either at (1999) or well below (2000 and 2001) the replacement value of 1.0 fledglings/pair. The most important discovery that the four years of work has revealed is a consistent negative relationship between colony size and productivity. Larger nesting aggregations (greater than 50 pairs) experience the lowest nest success and productivity, whereas smaller colonies (less than 25 pairs) generally are more productive on a per capita basis.

2

Habitat Restoration

2a. Wetland Restoration

The Refuge Maintenance Mechanic rehabilitated about three miles of the Main Dike Road, which is also the dike for the Main Pool. Trees were removed from the dike and clay and rip rap were used to strengthen the dike, with gravel placed on top. The work was completed for account with the rock obtained from Linck Aggregates of Beaver Dam for a total of \$74,238.00.

2b. Upland Restoration

As part of the Refuge's grassland management program, removal of treelines was initiated in 2001 and continued in 2002. There are several old fence lines on the refuge that have grown up in a line of trees. These trees divide grassland units into smaller fields. Removal of the trees creates larger continuous blocks of grasslands as well as reduces habitat for several undesirable species such as predators and brown-headed cowbirds. In January of 2002, a total of 3,731 linear feet of fence line trees were removed. All stumps were treated with crossbow the day of cutting and proved to be very successful in preventing re-growth. The trees were piled and sold as firewood.

3

Habitat Management

3a. Water Level management

On April 2, 2002, the Refuge Biologist, Diane Penttila, gave a presentation to biologists from the Wisconsin Department of Natural Resources, Natural Resource Conservation Services, and U.S. Fish and Wildlife Service. Her presentation covered cattail ecology, water management, and the marsh cycle. This presentation led to a request for her to appear on a cable television show taped in Oshkosh, Wisconsin, titled, "It's Your Environment" to briefly discuss water management on marshes. The program was taped on April 22, 2002. The cable television show is sold to several small cable channels throughout Wisconsin and nearby states. Penttila was also asked to give a presentation to the Rush Lake Steering Committee and interested landowners on May 7, 2002. Rush Lake, a nearby lake, has a history of containing large stands of hardstem bulrush which in recent years has substantially declined. The Rush Lake Steering Committee has proposed drawing down the lake to regenerate the hardstem bulrush but a couple of groups and individuals do not agree with the proposal.

Following is a summary of the water management on Horicon Refuge in 2002:

The water level for the Main Pool was maintained at an average level of 75.70 for the year, with careful monitoring during the nesting season so that water levels did not fluctuate. The new growth of cattail from 2000 that remained in 2001 was reduced in 2002. The Main Pool in 2002 was estimated at 36 percent open water.

Luehring's water level was kept at a slightly higher level than previous years since new muskrat openings were created in the fall of 2001. An average level of 78.30 through the spring and then 77.80 during the summer was maintained in order to keep the new openings flooded. This unit has a large amount of debris layer, so the unit may function better if forced through a couple of complete marsh cycles quickly or burned after it has been drawn down. Open water in this unit increased this year so that 19 percent of the unit is now open water.

Teal pool was successfully drawn down in 2002, with excellent results. The drawdown was initiated in mid February, with re-flooding started on September 12. Initial levels of the pool were at 78.65. The lowest drawdown level achieved was 76.32. The pool was re-flooded to a level of 77.78. The shorebird use in August and then the waterfowl use in the fall after re-flooding was spectacular, generating dozens of phone calls and e-mails from happy birders!

Redhead was maintained at a 77.60 to 77.85 level through the season. It was important to maintain this level since adjacent units were either in a draw down or planned for one in the near future.

Potato is planned for high water levels for several years in order to push the unit through the water cycle at a fast rate. The cattail is definitely thinning in this unit with the high water. The purple loosestrife has also been reduced significantly. A level of 77.70 was maintained for the summer, with levels rising to 78.30 in the fall in order to encourage muskrat use.

Stoney Island pool has a problem with floating cattail, therefore reduction of cattail is impossible until it re-roots. Water levels were maintained in 2002 at 77.50, with late summer levels dropping below the goal due to the lack of precipitation (low as 76.76). A new carp gate was installed in this unit on May 20.

Frankfurth water levels were dropped to 857.50 to provide better waterfowl feeding opportunities. In October, water levels were allowed to rise to 858.25 to attract muskrats.

I-2 is similar to Stoney Island pool with a floating cattail problem. I-2 would benefit from a drawdown but a method for drawing down this unit is not feasible. In the meantime, water levels were maintained at 77.50 to 77.80. Levels did not reach the goal until mid-July.

I-3 and I-4 are connected units, so they have the same water management. Over the years, the current vegetation has been desirable and the bird response has been good, so the units were maintained again at a spring level of 78.30 and a summer level between 77.50 and 78.00.

I-7 was successfully kept at a level of 79.00 or higher to prevent new willows from re-sprouting, stress the remaining willows, and thin out the emergent vegetation. The highest level achieved was 80.78 in early to mid May.

I-8 was maintained at a 77.30 level during the spring since it was used as a northern pike fry rearing area. After the pike were released into the Main Pool at the end of April, the unit was drawn down in an attempt to re-root the floating cattail. Levels reached a low of 76.08.

I-9, also in need of a draw down to re-root floating cattail, but was held off due to the drawdown of I-8. Levels in I-9 were maintained at a spring level of 77.80, a summer level of 77.50, and a late fall level of 78.00. Fall levels never reached their goal.

I-10 has good aquatic plant production, but waterfowl use is not as good as it should be. A drawdown may help this unit in the near future, but in 2002 the unit was maintained at a water level of 78.00, which has resulted in optimal duck use in the past.

Luebke pool is also in need of a draw down but the crissafulli pump was already in use for 2002. Therefore, a spring level was maintained at 77.75 with the remainder of the year at 77.00.

Radke water levels were maintained at 860.00 or higher throughout the year in order to continue thinning the cattail. This unit has opened up immensely over the last couple of years with the higher water levels, but the eastern half of the unit still needs thinning. A drawdown is planned for 2004.

3b. Moist Soil Management

I-5

This unit had been drawn down for years during spring and summer to promote emergent vegetation. However, each late fall and winter all the emergent vegetation would get wiped out. In 2000, the unit was drawn down for the fall and winter in hopes of sustaining an emergent vegetation cover and compacting the very deep mud layer that may have been the cause of the vegetation decline after re-flooding. In 2001, this unit was allowed to shallowly flood a couple inches in attempts to encourage perennial vegetation growth as well as any annual plant growth, but the ground did not compact. In 2002, pumping via a crissafulli pump was started on April 23 to draw it down to a 77.30-77.50 level. On September 9, stop logs were pulled at the I-4 structure in order to allow re-flooding. Dabbling duck use in the flooded portions of the unit was excellent. Canada geese and sandhill cranes made good use of the drier portions of the unit.

3f. Fire Management

A prescribed burn crew came from Mingo Job Corp Center to assist with our burn season. The crew was here from April 22 to May 6. They assisted with several burns on Horicon NWR and Fox River NWR. They also assisted Leopold WMD with several burns on waterfowl production areas. It was the third time the refuge used a Mingo fire crew to assist with prescribed burning. It is always a learning experience for both refuge staff and the young men and women on the crew. Dan Bell and Justin Cannon were hired on as AD-2's for the prescribed fire season. As part of the crew, they participated in the same classes, physical training, and burning as the staff. The additional help proved invaluable to the refuge staff. They are available at a moment's notice, even taking off of work at their own jobs to help burn.

Severe fire activity out west gave several of the fire staff at Horicon Refuge the chance to go out on crews this year. Mike Madel, Refuge Maintenance Mechanic, went out in late July on an engine detail to Colorado. Dan Bell, volunteer AD firefighter, went out to the Haymen fire in June as a helitack crew member. Refuge Bio-Tech Jon Krapfl and AD Justin Cannon went out west on a hand crew in July to New Mexico and Arizona.



The refuge purchased a 2002 Polaris Ranger from Extreme Motorsports for \$11,956 which included the front and back windshield, brush guard, and tow hitch. A 95-gallon pump unit was fabricated at Vari-tech in Waupun and installed with a Honda engine for \$2,300. This unit replaces a 1996 John Deere Gator that was used for prescribed burning.



2002 Yamaha Kodiak was purchased from Davis Service in Colorado under GSA contract for \$5,827. It replaces a Honda ATV.

Additional fire equipment purchases and upgrades included:

• BB4 pump and parts for 6x6 water tender	\$2,408
• New paint job on Army 6x6 water tender	\$2,410
• Smoke signs, sign stands, and traffic control aids	\$2,580
• 2003 Ford F550 Cab and chassis for Model 52 engine	\$34,525
• Stihl chainsaw and pole chainsaw	\$853
• Foam Unit for 6x6 water tender	\$570
• Motorola headset for use on marsh master II	\$1,138
• Motorola battery maintenance system and extra batteries	\$1,210

The following table shows the units and acres burned:

Burn Unit Name	Acres
Neitzel South	100
Babbitt West	61
Stensaas	100
Fox River South	9
Auto Tour Route - Pull-off #6	35
Milligan East	40
Lehner South	40
Rock River to Potato Dike	230
MDR- North of State Parking Lot	90
Frankfurth - Waas	40
Sommers South - WS	60
Babbitt East	15
Total Acres	820

Prescribed Burn History for Horicon NWR (includes satellites)										
Year	1998		1999		2000		2001		2002	
Season	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall	Spr	Fall
Acres	550	0	582	0	434	0	120	10	820	0

For the second year, the Refuge received Wildland Urban Interface (WUI) money - \$38,720. This program provides money for projects that are needed in order to prevent fire from escaping onto private land or into local communities. Refuge staff have not been able to safely burn most of the west side of the Refuge due to reed canary grass that is contiguous with reed canary grass on private land. This multi-year project was begun last year (see last year's narrative). During 2002, Kinan-n-Kopplin of Beaver Dam was hired for \$10,220 to place four 20-foot, 48-inch culverts and a 20-foot clear span, walking bridge across Mill Creek. Refuge staff supplied all materials including the culverts (Fond du lac Culvert and Supply), 750 tons of clay fill (Navis), and 500 tons of breaker and 100 tons of ¾ inch gravel (Link Aggregates). Refuge staff bought materials for the bridge and constructed it at the shop. The final phase of the project will be completed in 2003.

3g. Pest Plant Control

Many areas of purple loosestrife continued to show a significant decline in purple loosestrife. The area at Potato Lake had increased growth of cattail and now a little bur-reed. It was also discovered that this site had a second generation of *Galerucella* beetles produced but that was the only site where this was found. Other areas where purple loosestrife continued to show decline were Stoney/Boardwalk area, Redhead, Teal dikes, and Ledge Road. The Sterr Road site, which had been the site of the quickest and most severe decline in purple loosestrife, seemed to have a crash in the beetle population. Flooding of the site during the winter or summer during pupation may have been a factor, but that site has had flooding before and beetles continued to do well. The purple loosestrife in this area had a dramatic rebound in robustness. However, loosestrife nearby was still very stunted and likely has a good supply of beetles to re-populate Sterr Road if needed. Many areas of loosestrife became established on the Main Pool during the years of drawdown. Most are located in the northern half, especially near transect 5. It is assumed that as the Main Pool is reflooded, much of the loosestrife will be flooded out and disappear. Other loosestrife that is on drier sites will most likely decline as the beetle population increases. One of the larger plots is off of Sommers Road, along Sommers Ditch and into the cattail spreading north and east. It has had several years of releases of *Galerucella* beetles and two years of *Hylobius* beetles. Hopefully, some decline of loosestrife will be detected soon.

A small patch of leafy spurge, less than 1 acre in size, continues to be a problem on the north end of the refuge just off Oak Center Road. It was treated on September 24 with Plateau. The township mowed the roadsides at the end of July, which made finding the plants for treatment much easier. In areas that were not mowed, it was very difficult to find the spurge. Mowing may have helped make the treatment more effective, but mowing may have also caused the seeds to spread much further.

4

Fish & Wildlife Management

4a. Bird Banding

The banding quota of 400 mallards was reached with 411 mallards banded using a rocket net. The mallard breakdown was AHY-M 124, AHY-F 180, HY-M 48, and HY-F 59. The Refuge coordinated a banding shot again with the Wisconsin Department of Natural Resources Conservation Warden training class.

4c. Re-introductions

As part of the carp control program and to improve marsh health after the carp treatment, predator game fish are being restocked at every opportunity. Restocking with game fish began on April 9, 2002, and consisted of 300,000 northern pike fry supplied from Genoa National Fish Hatchery. These fish were released into I-8 and then later on April 26 stop logs were pulled so that the fish could go into the Main Pool. Other restocking efforts included 12,600 northern pike fingerlings (average 2 inches in length) from Genoa National Fish Hatchery which were released into Strooks Ditch off of Ledge Road on May 8; about 28,000 northern pike fingerlings (average 2.5 inches in length and 104.6 pounds total) and 4,326 northern pick fingerlings (average 3.5 inches in length and 43.7 pounds total), both from the Wisconsin Department of Natural Resources Hatchery, which were released into the Main Pool off of the Frankfurth water control structure on May 21 and into the Main Pool off of the banding site on June 18, respectively; 15,000 yellow perch (average 1.5 inches in length and 17.6 total pounds) from Genoa National Fish Hatchery which were released into the Main Pool off of the airboat launch on July 10; and 105,000 bluegill, 14,000 green sunfish, and 1,000 black crappie (average 1.25, 2, and 2 inches in length, and 104, 57, and unknown total pounds, respectively) from Genoa National Fish Hatchery.

4d. Nest Structures

Refuge staff and volunteers are in the process of checking 85 wood duck boxes during the winter of 2003 for use in 2002. Some success of wood ducks (about 33 percent) has been found.

4e. Pest, Predator, and Exotic Animal Control

On April 16, 2002, and May 2, 2002, the carp trap on the Auto Tour Route was cleaned out, with 800 and 400 carp removed, respectively, averaging four to five pounds each. In addition, 40 northern pike and 100 white suckers were removed from the trap on each of those dates and returned upstream.



Cleaning out the carp trap.

No fish shocking survey was conducted in 2002. The previous year's fish shocking survey conducted on September 21, 2001, had samples of 89% carp and 99% carp at two respective sites (see 2001 narrative for further details).

One small, one-acre spot treatment of rotenone was conducted on April 17, with a successful kill and removal of carp.

Carp barriers were used in all impoundments off the Main Pool when water control structures were open to prevent movement of carp between units.

A new carp gate was designed and several gates were made which allows vegetation to flow through, thus eliminating frequent cleaning of gates. A couple more water control structures need to be replaced with the new carp gate.



A variety of furbearer species are traditionally trapped on the Refuge: muskrat, mink, raccoon, opossum, red fox, and weasel. Trapping units on the Refuge are sold through an open auction held in September. Six dike units and two upland units were sold for the 2001-2002 season for a total of \$770. No marsh units were offered due to the draw down of the marsh. Two years ago, marsh units were offered in spite of the draw down and were sold for the minimum bid of \$25, but in the end, the trappers never even attempted to trap. No youth or senior units were offered this year either.

Shown below are the trapping results for the last several years.

	<u>1997-98</u>	<u>1998-99</u>	<u>1999-00</u>	<u>2000-01</u>	<u>2001-02</u>
Muskrat	7,744	673	2,373	397	2,430
Mink	16	6	10	0	2
Raccoon	73	17	13	162	75
Opossum	86	6	36	75	28
Fox	3	0	0	0	0
Skunk	6	1	3	41	7
Weasel	0	0	2	2	0

5

Coordination Activities

5a. Interagency Coordination

Refuge staff continued their involvement with the **Rock River Headwaters, Inc. (RRHI)**, which began in 1994 under the name, Horicon Marsh Area Coalition. The mission of RRHI, a nonprofit organization, is to serve as a catalyst for cooperation between citizens, businesses, agriculture, and government to protect, restore, and sustain the ecological, economic, cultural, historic, and recreational resources in the Upper Rock River Basin through watershed-based approach. Board members meet twice a month. In addition, Refuge staff continues to work on the water quality work group.

RRHI received a \$10,000 grant for a third year from the Lake Management and River Protection Program of the Wisconsin Department of Natural Resources. An additional \$2,500 will be matched by RRHI. The grant will be used to retain the outreach coordinator, Lorna O'Donovan, who was hired during the first year.

An additional \$2,000 grant was also received from the Rock River Coalition. This grant was used to fund Lorna O'Donovan for coordinating a citizen water quality monitoring program. Eleven citizen work groups volunteered to work on the project which focused on the headwaters area of the Rock River south to the dam in Hustisford. After being provided training, the participants were responsible for monitoring their sites for dissolved oxygen, temperature, turbidity, and flow on a monthly basis for a full year. The data still needs to be analyzed and a report written. The project was very successful and RRHI hopes to obtain a grant for a second year.

The Refuge's involvement with the **Marsh Management Committee**, formed in 1998, has continued. The Committee is made up representatives from non-profit organizations, government organizations, and the private sector for the purpose of guiding the management of Horicon Marsh for the benefit of a healthy ecosystem and the people who enjoy it. In 2002, Refuge staff attended monthly meetings.

Throughout the year, Refuge staff coordinated with the local **Wisconsin Department of Natural Resources** staff on a variety of issues, including public use events and publications; water management; carp control; law enforcement; hunting programs; and trapping programs.

The Refuge participated in the Rural Fire Assistance Program for the second year, which provided financial assistance to **rural fire departments** in the community around the

Refuge. This year five of the six fire departments took advantage of this opportunity, with Knowles Fire Department receiving \$6,500, Brownsville Fire Department receiving \$1,000, Waupun Fire Department receiving \$4,400, Kekoskee Fire Department receiving \$4,530, and Oakfield Fire Department receiving \$9,476. Only Burnett Fire Department did not take advantage of this opportunity. The matching share for each of the fire departments was ten percent. Refuge staff felt that it was a great partnership opportunity and hope to be involved with the program again next year.

5d. Cooperating Association

The Refuge's Cooperating Association, which began in August of 1995, is managed by the **Midwest Interpretive Association (MIA)** based out of Desoto National Wildlife Refuge. In Fiscal Year 2002, "Coot's Corner" generated \$20,748.29 in sales and \$783 in donations for a total of \$21,531.29. This year's total surpassed the previous year, which had been the most successful year since the inception of Coot's Corner! It just keeps growing and growing!

Midwest Interpretive Association provided food, door prizes, guest speakers, and other supplies for special events and teacher workshops held throughout the year at the Refuge; printing of the newsletter, calendar of events, and volunteer flyer; a blue goose costume for the Refuge; trees for the landscaping project; environmental education field trips and supplies for the YCC program; and many other miscellaneous items.

The Friends of Horicon National Wildlife Refuge officially unveiled themselves as a new citizen-based support organization at a public meeting January 10, 2002, at the Refuge visitor center. This event was well-attended by the media. Charter officers announced that the group had already received new members, donations, and two grants. The Friends received a \$2,500 grant from the U.S. National Ramsar Office and a \$500 grant from Superior Landfill of Mayville to develop a logo and develop and print a full-color membership brochure. The purpose of the Friends of Horicon National Wildlife Refuge is to promote conservation, awareness, and appreciation of Horicon National Wildlife Refuge and to provide assistance to Refuge programs. Projects may include fund-raising, education and outreach, and conservation activities on the Refuge. The Friends will help their local communities understand the mission of the Refuge as a place where wildlife comes first. The Friends may also seek public and private contributions for high-profile, long-lasting projects. The Friends may advocate for the Horicon National Wildlife Refuge and the National Wildlife Refuge System.

The U.S. Fish and Wildlife Service signed a cooperative agreement with the Friends. The Friends may provide personnel, including volunteers, student interns, and others to help Refuge staff complete various activities. The Service will provide office space at the Refuge headquarters, limited administrative assistance, and training and guidance to the Friends in support of Refuge-related projects.



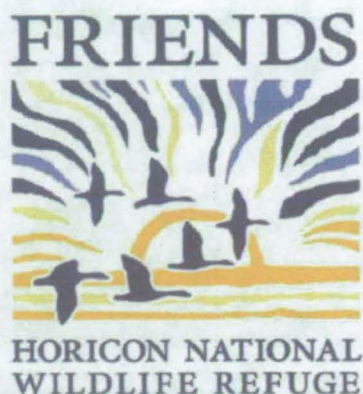
Charter officers (above) of the new Friends, non-profit organization, included president Dan Bell of Mayville, secretary Betty Flesch of Fond du Lac, and treasurer Terri Fuller of Fond du Lac. Other charter board members included Roy Zastrow, Craig Waas, and Keith Jensen of Mayville; David and Joann Goodlaxson of Waupun; Jocelyn and Bill Holmes of Rubicon; Marion Cook of Oakfield; and Judy Cook of Brownsville. The group meets monthly on the second Thursday at 5:00 pm at the Refuge visitor center. The public is encouraged to attend and participate.

Member Glenn Berg attended the first-ever national Friends Conference in Washington DC in February 2002.

The Friends of Horicon National Wildlife Refuge (NWR) celebrated the accomplishments of their first year at their first annual meeting on July 11, 2002, attended by 50 people at the Refuge visitor center. Hats, t-shirts, sweatshirts and denim shirts with the color embroidered Friends logo were available for sale.

Highlights of the meeting included a review of achievements such as:

- implementation of a memorial landscape plan at the visitor center through donations and volunteer effort
- adoption of County Highway Z for clean-up through the Dodge County Adopt-a-Highway program
- acquisition of a tax-exempt number
- establishment of a speakers bureau
- increased awareness of vehicle-wildlife collisions on State Highway 49 through the Refuge
- transfer of ownership of the soda machine to the Friends
- and design and production of a logo (below) and brochure through grant funds provided by Glacial Ridge Landfill of Mayville, Wis., and the U.S. National Ramsar Office.



Refuge manager Patti Meyers presented charter president Dan Bell of Mayville with the 'Honk' award, thanking him for his energy, enthusiasm, and leadership (above).



New officers were elected (above) including Glenn Burg of Fox Lake as President, Roy Zastrow of Mayville as President-Elect, Terri Fuller of Fond du Lac as Treasurer, Betty Flesch of Fond du Lac as Secretary, and Harold Steinback (Beaver Dam), Dick Wanie (Fort Atkinson), Marian Cook (Oakfield), Diane Rabehl (Beaver Dam), Dan Bell, and Nancy Hall (Fort Atkinson) as Directors.

The Friends of Horicon NWR were especially invited to help celebrate the centennial of the Refuge System in 2003 and were provided with blue goose mobiles promoting the centennial.

Refreshments and a special guided tour on the Egret Trail rounded out the evening's activities. Participants observed nestling barn swallows, a young muskrat gathering duckweed, drake blue-winged teal molting into their eclipse plumage, green frogs calling, black terns searching for food, as well as black-crowned night herons, leopard frogs, tree swallows, and Canada geese.

6

Resource Protection

6a. Law Enforcement

In November 2001, on the day prior to the deer gun season opening, Refuge Officer Kitchen received a phone call from Mr. Rick Roets who observed a man placing a tree stand on the Refuge, adjacent to one of the hiking trails. After investigating, Refuge Officers Meyers and Kitchen discovered the tree stand and also observed 26 small saplings cut down, one 3.5 inch tree cut down, and 15 branches, ranging in size from 1 inch to 7 inches in diameter, cut from the tree stand tree. The next morning, on opening day of deer gun season, Refuge Officer Meyers discovered a man, Mr. Timothy Powell, in the tree stand. Mr. Powell admitted to placing the tree stand and cutting the trees and branches. Mr. Powell, who is a Refuge neighbor, received a notice of violation for \$125 for "disturb, injure, spear, poison, destroy, collect or attempt thereto any plant or animal on a National Wildlife Refuge" and a notice of violation for \$125 for "failure to comply with refuge special hunting regulations." Two days after Mr. Powell received the notice of violations, Mr. Roets received a threatening note on his vehicle. With the help of Special Agent Ed Spoon, who took over the case at this point, Mr. Powell was charged with a violation of the National Wildlife Refuge Act for witness tampering and interfering with persons engaged in authorized activities on National Wildlife Refuges. In an interview with Agent Spoon, Mr. Powell admitted to writing the note. Mr. Powell appeared in Federal Court in Milwaukee on August 19, 2002. The United States Attorneys Office reached an agreement with Mr. Powell which included having no contact with Mr. Roets and agreeing to not violate any rules of the Refuge for one year. After one year, if Mr. Powell has complied with the conditions of the agreement, then the citation will be dismissed.

After the deer gun season, in early December, the Refuge biologist was conducting a waterfowl survey on the airboat in the Main Pool when she noticed a path cut into the cattail. Upon further investigation by Refuge Officers Meyers and Kitchen, including video footage shot from an airplane, it was discovered that miles and miles of paths were cut into the cattail with an unknown contraption. It appeared to be done by an airboat, except that some of the paths ended abruptly and some of the paths had exact right angle turns, both of which would be impossible with an airboat. Refuge Officer Kitchen made several phone calls to Department of Natural Resources staff and trappers, trying to get a lead, but nothing came of it until the local warden called and said that Mr. Daniel Feucht, who was a Refuge volunteer and also well known by Refuge staff for previous violations, admitted to taking a homemade device that he rolled through the cattails (like a hamster in a ball). He did it so that he would have hunting lanes and felt that it was okay since the device wasn't motorized. Mr. Feucht

was issued a notice of violation for \$125 for "disturbing plants on the Refuge without being permitted." Previous violations included a warning letter two years prior for cutting a branch on the Refuge while hunting. It has also been suspected that Mr. Feucht hunts in a closed area of the Refuge. Unfortunately, the charges for Mr. Feucht for making the cattail maze were dismissed by the United States Attorney's Office in Milwaukee.

Several warning letters and notice of violations were also issued this year for the following: dog off leash, trespass, hunting in closed area, fishing in the carp trap, canoeing on the Refuge, using mopeds on the Refuge, parking on the auto tour route, bicycling on Old Marsh Road when it was closed, and reckless driving on the auto tour route.

In August, we had a new type of incident on the refuge. We received a telephone call from a hysterical female visitor who was "literally scared to death" by a man bothering her on the hiking trails. She had her newborn baby with her and felt threatened by the subject. Officers Meyers and Lenz immediately responded and located the subject standing beside a panel truck parked in the midway lot. He was indeed very different. He looked the part of a vagrant, including the long, stringy hair and overall filthy appearance. Everything he owned was probably inside his truck which was stacked to the ceiling with stuff (junk). There was no doubt he had a great deal of experience talking with law enforcement officers as he managed to provide paperwork and answer questions before they were asked. He was from Indiana enroute to the Experimental Aircraft Association event which occurred the previous week. Unfortunately, there were no charges that could be filed against him since he had actually broken no laws, although we could understand why the woman was scared. He had a pair of binoculars and stated he was allowed to bird watch on the refuge. At sunset, Officer Meyers returned to the site and found him still in the parking lot. He was dressed in a pair of shorts and rubber knee boots minus the soles, taking a bath. All of his clothes were hanging in the trees, as if he had found a permanent home. This was quite the sight. After a great deal of reluctance, he finally left the refuge.

6b. Permits and Economic Use Management

Special use permits were issued last year to the trappers and their helpers.

7

Public Education and Recreation

7a. Provide visitor services

Facilities and Access

Refuge staff constructed two vault toilet facilities in the summer of 2002. A double (two toilets) facility was added to the main parking lot of the Highway 49 Hiking Trails/Auto Tour Route, and a single facility was added at the Environmental Education Barn site. The double sweet-smelling toilet was purchased from Romtec, Inc. in Roseburg, Oregon for \$22,470 and placed by Refuge staff. The single facility was built by Refuge staff, saving the Refuge many dollars.

Other improvements included construction of a third fishing platform by the Beaver Dam Charter School. The platform will actually be placed at the Peachy Road fishing site during the summer of 2003.

The following improvements were accomplished by the Youth Conservation Corps: replacement of two boardwalk sections on the Redhead trail;



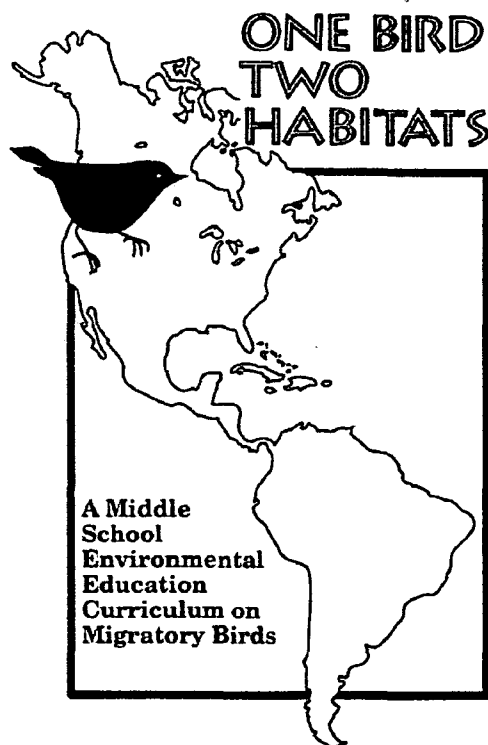
construction and installation of a three paneled kiosk at the main parking lot of the Auto Tour Route, which replaced a two paneled one; placement of the two paneled kiosk at the entrance to Main Dike Road; and rebuilding the Environmental Education Barn water platform. New signs for both kiosks are currently being worked on.

Environmental Education and Interpretation

About 6,807 people participated in on-site, staff-conducted, interpretive talks, tours, and demonstrations. In addition, about 3,808 people participated in environmental education and interpretation programming and services including workshops, activity trunks, on-site field trips, off-site programs, and self-led activities. (Additional programs are included under Outreach.)

In FY02, Horicon NWR added a small **Aquatic Exotics traveling kit** to our family of trunks at the Refuge available to educators. The Aquatic Exotics kit was purchased from the Wisconsin DNR, and Refuge staff has since added other materials to it. The trunk family includes the Migratory Bird Discovery Trunk, Tallgrass Prairie Discovery Trunk, Wetland Discovery Trunk, and Wildlife Discovery Trunk. They are available for loan at no cost.

Horicon NWR hosted a **One Bird, Two Habitat (1B2H) Workshop** for middle school educators and youth leaders on July 26, 2002.



Fifteen people attended from four local and distant schools as well as from five non-profit organizations including Wisconsin Waterfowl Association, Madison Audubon Society, Bubolz Nature Preserve, International Crane Foundation, and UW-Arboretum.



During this centennialized workshop, participants were greeted by Honker (volunteer Laura Sisitki) and received a blue goose mobile.



They participated in hands-on activities such as the Bird Banding Bonanza, Migrateering (left), Cowbird Capers (right), Forest Fantasy, Territory Tango, and A Forest Through the Trees.



Forest Fantasy



Territory Tango



They also learned about educational opportunities at Horicon Marsh and participated in Binocular Basics (left) and a guided bird watching tour on the floating boardwalk (right). Through all of these activities, they learned skills such as cooperative learning, using a compass, guided imagery, role-playing, tree measurement, and using binoculars.

Each participant received their own copy of the 1B2H curriculum guide and video as well as the Horicon Marsh Field Trip Guide. Four participants received grab bags as part of the free drawing for prizes at the end of the workshop including a centennial bag.

The workshop was co-facilitated by ranger Stoddard and Wisconsin Society For Ornithology, retired educator and 1B2H author Steve Kupcho. DNR naturalist Bill Volkert presented a slide show on neotropical migratory birds.



Volunteer Laura Sisiki (right), SCEP student Sara Mason (left), and intermittent employee Sherry Schwock helped prepare for the workshop and led parts of it. Without Sara, Laura, and Sherry's help, the workshop would not have happened. In addition, DNR researcher and 1B2H author Susan Gilchrist provided invaluable and detailed preparatory information and guidance.

Other partners included the Midwest Interpretive Association, Birder's World (Kalmbach Publishing), Ducks Unlimited, Wisconsin Center for Environmental Education, Wisconsin Association for Environmental Education, and the American Birding Association.

Horicon NWR employees and volunteers together completed another busy but successful fall

season. Over 2,400 children and adults participated in educational and interpretive programs provided by refuge staff both on- and off-site, double the number that participated last fall. This fall, at least six volunteers donated about 100 hours of time in leading programs, including Nancy Hall of Fort Atkinson (below).



One hundred students and staff attended Horicon NWR's first-ever **virtual field trip** (below) on September 27, 2003 held in partnership with CESA 6, including one dean of students and one vice-principal.



Waupun High School hosted the connection for 43 Waupun Middle School at-risk students. They were linked with 20 River Crossing Environmental Charter School students (at Portage High School), 35 Brandon Middle School students, and Cooperative Educational Service Agency staff in Oshkosh (CESA 6). The 55 minute session was called "Know Your Refuge" and served as an introduction to Horicon NWR. Students watched the new Horicon NWR video produced by NCTC. They also color-coded marsh visitor maps using markers as a

geography exercise and interviewed the refuge ranger. Plans also included visiting the refuge web site, but time ran out.

Pre-activities included visiting the DNR's web site and downloading the visitor maps for duplication and distribution to students during the session. Teachers were also asked to help students prepare interview questions in advance. These suggestions were provided to teachers via email along with an evaluation form.

This live, interactive program is the first in a series of Friday Field Trips for middle schools being offered on a monthly basis to all Wisconsin BadgerNet sites on the DADE and FACET networks during the 2002-2003 school year. Host sites rotate. Other topics will include marsh animals and their sign, wildlife trade, Refuge System and the Centennial, careers in fish and wildlife, live raptors, and bird identification.

Although the virtual experience does not equal or replace an actual visit to Horicon NWR, it does help prepare students for visits, reach those who could not visit the refuge at all, and efficiently reach multiple off-site groups in separate, geographic areas all at once.

Public Visitation

About 572,517 people visited Horicon Refuge in FY01. The winter quarter by far was our quietest season. Spring and fall were the busiest, followed by summer. Spring visitation again about equaled fall visitation. About 23,958 people enjoyed marsh exhibits at the Visitor Center during the year.

Special Events

Numerous events marked the seasons: National Wildlife Refuge System Birthday (March), Earth Day (April), Marsh Melodies (April-May), National Fishing Week (June), National Public Lands Day (September), and National Wildlife Refuge System Week (October).

Wisconsin Governor Scott McCallum announced that the **Marsh Melodies** Steering Committee received an \$18,000 tourism grant to help promote Marsh Melodies, a series of events designed to encourage visitors to enjoy the marsh for its recreational opportunities and its cultural and natural history. The Steering Committee, which represents several communities and organizations involved with the marsh, was awarded the grant Oct. 15, 2001 through the Department of Tourism's Destination Marketing Joint Effort Marketing (JEM) grant program. Ranger Stoddard participates in the Steering Committee.

This is the second consecutive year the campaign has received JEM funding. The JEM program is available to non-profit organizations for promotion of their Wisconsin tourism destinations or events. The state funds up to 75% of a project's first year advertising and marketing costs. The program also offers grant support during the second and third year of a new project, but at lower levels each year in hopes that the project will become self-sufficient. To be funded, projects must compliment or supplement the state's overall tourism marketing plan. The JEM grant program helps non-profit tourism organizations attract visitors through

unique events and promotions. Partners included Wisconsin Department of Tourism; Mayville, Horicon, and Waupun Chambers of Commerce; Fond du Lac Convention and Visitors Bureau; Wisconsin Department of Natural Resources; Friends of the Horicon Marsh International Education Center; and the Horicon Marsh Bird Club.

Horicon NWR celebrated **National Wildlife Refuge Week** with numerous educational programs and an open house Oct. 13, 2001. Despite rainy weather, about 600 people participated in the open house that included a guided bird watching tour, refuge slide show and tour, a presentation on the prehistoric trails of the Horicon Marsh area, a goose talk, and a free drawing for prizes. Educational programs were provided during the week both on and off site to about 200 adults and children regarding the Refuge, wildlife sign, nature exploration, and Canada geese. Partners included the newly forming Friends of Horicon NWR, the Midwest Interpretive Association, Mid-America Geographic Foundation, Flower Farm, Visible Ink, and refuge volunteers.

Horicon NWR hosted two **Wild Thing Birthday Parties** on March 9, 2002 for the public to celebrate the approaching Refuge System centennial.



The parties included a digital camera photo opportunity with the Refuge's blue and white goose mascot (children received a print out, above); singing "Happy Birthday" to the Refuge System and "Wild Things;" a wildlife signs slide show and hike; party games with centennial prizes like Find the Refuge, Pin the Goose on the Refuge, and Wildlife Musical Chairs; watching the Refuge System and Horicon NWR videos; free goody bags with wetland coloring books, Junior Refuge Manager badges, Refuge System maps, centennial info and tattoos, and party horns; and birthday cake. Plenty of river otter, white-tailed deer, and cottontail rabbit sign were observed during the hike as well as Canada geese and a sandhill crane. All festivities were well-received by the hearty 35 souls who attended despite cold, extremely windy weather. This event was well-publicized in the media. Volunteers Jake Flaasch and Laura Sisitki helped with this event.

The second annual **Marsh Melodies** took place on weekends April 20 through May 26, 2002. Although our spring weather was far less than favorable, an estimated 3,000 people attended in total, and some visitors came from as far away as Colorado, Missouri, Ohio and New York specifically for these events. The six-weekend series of events emphasized the various sights and sounds, natural events, and moods of Horicon Marsh that occur throughout spring. A full range of visitor activities at multiple locations again included effigy mounds tours, guided canoe tours, guided wildflower hikes, bird watching, a circle tour guided bicycle ride, and much more.

The weekends and themes were: April 20 & 21... Archaeology; April 27 & 28... Bats, Rats & Habitats; May 4 & 5... A Splendor of Spring Wildflowers; May 10, 11, 12... Horicon Marsh Bird Festival; May 18 & 19... History of Horicon Marsh; and May 25 & 26... Peddle & Paddle the Wetland.

In winter/spring 2002, promotions resulted in: 951 customer responses to ads placed in Good Housekeeping, Birdwatcher's Digest, Birder's World, Silent Sports, and Journal and Topics magazines; 857 customer responses to the Discover Wisconsin broadcast about Horicon Marsh (second airing); 603 visits to our media web page from radio stations that downloaded our newly produced radio PSA's; 293,326 visits to our vastly improved Marsh Melodies web site; 630 media responses to news releases posted on the web page and publicized with a postcard mailing; 15,407 direct mailed Marsh Melodies full color promotional booklets (50,000 total printed); and ultimately a total economic impact to the Horicon Marsh Area of \$179,370.00. Economic impact was determined by area visits which included 937 information desk contacts and 1,836 one day visitors to Horicon Marsh State Wildlife Area; 1,445 people at the visitor center and 1,171 one day visitors to Horicon National Wildlife Refuge; and 283 one night visits and 130 second night visits to area hotels and inns.

Two Discover Wisconsin TV productions broadcasted in the weeks prior to Marsh Melodies this spring. The first one, "A Natural Experience - Horicon Marsh," first aired in 2001 and highlighted Marsh Melodies. The second one, "Wild Things - Wisconsin's National Wildlife Refuges," aired for the first time in April 2002 and focused on the five NWRs in Wisconsin, the Refuge System, and the Centennial. The Horicon segment highlighted Marsh Melodies. This broadcast resulted in over 1,114 inquiries from viewers in several states to the DW's 1-800 phone number publicized during the broadcast and from the DW web site over several months. It will air again April 5 and 6, 2003.



Refuge events included a re-dedication and grand opening of the Horicon TernPike Auto Tour which kicked off the Centennial Road Rally attended by about 60 people, a Wisconsin Rock

Art scavenger hunt in the visitor center, a wildflower bus tour of the Niagara Escarpment (above) and Waupun Woods, a Wetland Plant Tour on the boardwalk, coordination of a marsh-wide Bird Festival School Field Trip Day, Birding the Boardwalk tour, Whooping Cranes Return to Wisconsin presentation, Wisconsin Federal Junior Duck Stamp Reception for local winners, Winging It! (bird activities for kids), Marsh History Car Caravan Tour, and several others. The Bird Festival School Field Trip Day was the best attended since it began three years ago. On the Refuge alone, 402 students, parents, and teachers from nine schools participated in five different programs including Birds of the Marsh slide show (with volunteers Jack and Holly Bartholmai); Migration Stations game, Just Mucking Around scavenger hunt, Binoc Basics demo, and Who's Who at Horicon Marsh? hike.

Marsh Melodies partners included Mayville, Waupun, and Horicon Chambers of Commerce, Fond du Lac Convention and Visitors Bureau, Dodge County Tourism Association, Horicon Marsh Bird Club, Rock River Archaeology Society, Mid-America Geographic Foundation, Midwest Interpretive Association, Wisconsin Department of Tourism, Discover Wisconsin Productions, Marsh Haven Nature Center, and the Wisconsin Department of Natural Resources and their friends group. Several Refuge volunteer also contributed to this effort by staffing the visitor center and helping conduct programs.

Horicon National Wildlife Refuge celebrated **National Fishing Week** on May 23 with 130 third and fourth graders, their teachers and parents of Belle Reynolds Elementary School (Oakfield) at a centennial-themed fishing expedition. (This day was preceded by classroom visits and teacher orientation at the school to prepare everyone for the big day.) The day began with a large-group welcome which included a review of the Centennial school assembly program refuge staff provided at the school in March. Students then split-up into groups and rotated through 10 Pathways to Fishing learning stations, including one station devoted to the Centennial and fishing safety as well as bait and equipment, knot-tying, casting, wet-n-wild, fish identification, fisho, fish handling and ethics, regulations and fish printing.



At the Centennial and safety station, students played safety charades (above right) and assembled blue goose mobiles using fishing line in order to attach them to the end of stick (above left). After lunch, refuge staff supervised fishing time at two refuge sites (Peachy Road and Ledge Road) and one county site (the Rock River at the Hwy. 49 wayside). Staff provided

live and artificial bait, bobbers and lead-free sinkers. Students caught northern pike, yellow perch and carp. Each student received a Centennial t-shirt which they used back at school to print fish onto. Each student also received a Sport Fish Restoration or Refuge System goody bag with plenty of materials including a Horicon NWR Centennial flyer. Twenty-three Horicon NWR volunteers and employees hosted this annual event in anticipation of summer vacation and in an attempt to get kids hooked on fishing, not on drugs. The Wisconsin DNR once again partnered with us and local media covered the event. Horicon NWR was designated as a Region 3 focus refuge for 2002 as we countdown to the Centennial, and the Fishing Expedition represented Horicon NWR's monthly Centennial-themed event to build excitement and attention to the Centennial and the Refuge System.

For the third year, Horicon Refuge participated in National Public Lands Day on September 28. Twenty-seven volunteers assisted Refuge staff with placement of screenings (fine gravel) on the Egret Trail and trimming trees along Redhead Trail and around the pump house and sign on Highway 49. Two miles of trail were improved by the efforts of these hard-working volunteers. After the work, they were treated to a luncheon celebration provided by Midwest Interpretive Association.

Hunting

Hunting opportunities on the Refuge include ring-necked pheasant, gray partridge, cottontail rabbit, squirrel, and deer. Closed areas include the Viewing Area and Interpretive Displays on Highway 49, the Bud Cook Hiking Area, and a small area around the Office/Visitor Center. The Auto Tour Route/Hiking Trail complex is closed to all hunting except during the nine-day deer gun season; a 600-acre area around the office is closed to all hunting except during archery and gun season by permit only; and the former Stensaas unit is closed to all hunting except for youth and novice pheasant hunters. The Refuge is closed to migratory bird hunting, other than a controlled Youth Waterfowl Hunt. State regulations apply to all Refuge hunters, except that all seasons close at the end of deer gun season on the Refuge.

Forty-three hunters were randomly drawn for the archery permit hunt located in the 600 acres around the Office/Visitor Center. Out of the 43 hunters, 23 were not successful, 19 were unknown, and one harvested a buck.

A permit deer hunt was held in the same area during the deer gun season for hunters with disabilities. Two wheelchair accessible blinds were available for their use. Thirteen hunters participated, with only one deer harvested – a nice eight point buck!

For the second year, the Refuge participated in the State's early gun hunt in October, only open to hunters with disabilities. This same 600-acre area was opened October 6 to 14 for this special hunt. Hunters had to pre-register by the end of the summer, with a maximum of 8 selected. The hunt had poor success again with no one harvesting any deer, but fortunately a few hunters at least saw deer this year.

The Youth Waterfowl Hunt was held on October 13, 27, and 28. To be eligible to hunt in this special program, the youth must have completed hunter safety and one of the local Ducks

Unlimited Greenwing Days or Wisconsin Waterfowl Association Waterfowl Skills Clinic. Sponsors are not allowed to hunt. Twelve youth participated (9 boys and 3 girls). Each party hunted one morning of the three mornings of the special hunt. A total of 14 ducks were taken which consisted of pintails, shovelers, mallards, green-winged teal, gadwall, redheads, and ringnecks. All parties except one took home at least one duck.

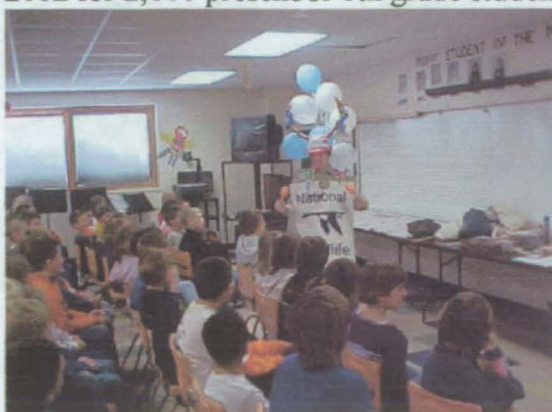
7b. Outreach

About 81,254 people were benefited from outreach efforts which included off-site presentations and exhibits. This number is so high because of the Refuge's participation in the Ducks Unlimited Great Outdoors Show for the first time, helping to staff a centennial tent with various U.S. Fish and Wildlife Service displays from throughout the state.



Other off-site exhibits included Audubon Days in Mayville (above). This number includes off-site presentations made to 7,108 people (includes centennial school assembly programs). Volunteers and/or members of the Friends speakers bureau conducted several off-site interpretive programs.

Ranger Stoddard conducted "Countdown to the Centennial" school assembly programs held at 20 schools in nine communities near Horicon National Wildlife Refuge, March 4 - March 20, 2002 for 2,800 preschool-8th grade students and 180 adults.



During each high-energy, one-hour program, participants sang Happy Birthday to the National Wildlife Refuge System (left), met R3's stand-up Teddy Roosevelt (right), watched the NCTC video 'America's National Wildlife Refuge System - Where Wildlife Comes First,' ...



...competed in teams for valuable prizes in the game 'Find the Refuge' (left), counted down the Top 10 reasons why they should care about Refuges and the Centennial, dressed up in the Big 6 recreational uses of Refuges (right), listened to Rachel Carson's interpretation of the blue goose emblem, sang 'Wild Things,' and signed a banner pledging to help celebrate the Centennial in specific ways (below). Honker visited two of the schools (below).



As prizes, each school received a T.R. Bear, a copy of the video, and a copy of the book Wildlife Refuge, A Classroom Adventure. Each student received a blue goose centennial tattoo and their own copy of the National Wildlife Refuges visitor guide map. Teachers received the R3 Centennial fact sheet, Rachel Carson's excerpt, a listing of Horicon NWR events and programs, the Friends of Horicon NWR brochure, and a leaflet listing ways they can help us celebrate the centennial (which in some cases was distributed via school newsletters to families at home). Two local reporters attended two of the presentations, providing additional outreach. Materials for this special program offering were provided by a R3 centennial cost-share grant which was matched by the Midwest Interpretive Association. As one of R3's focus Refuges in 2002, 'Countdown to the Centennial' is part of Horicon NWR's effort to build momentum for the Centennial. Announced on NCTC's list serve VOICES, the lesson plan for this program was distributed to more than 24 FWS employees representing all regions for their

own use in whole or part.

Partners included the Midwest Interpretive Association, FWS Region 3, National Conservation Training Center, Refuge volunteers Ivy Lofberg, Laura Sisitki, and Jake Flasch as well as Leopold Wetland Management District, Illinois River NWR, and Fergus Falls WMD for providing additional NWRS maps enabling each student to keep their own copy.

Hosting schools included: Brandon Elementary/Middle School, Washington Elementary School (Waupun), Amity Elementary School (Brandon), Trinity Lutheran School (Mequon), Woodworth Jr. High (Fond du Lac), Jefferson Elementary (Waupun), St. John's Lutheran School (Mayville), Prairie View Elementary (Beaver Dam), Belle Reynolds Elementary School (Oakfield), Oakfield Middle School, Mayville Middle School, Theisen Jr. High (Fond du Lac), Shepherd of the Hills Catholic School (Eden), Pier Elementary School (Fond du Lac), Immanuel Lutheran School (Mayville), Lincoln Elementary School (Beaver Dam), Waupun Middle School, St. Stephen's Lutheran School (Horicon), Central Wisconsin Christian School, Primary Campus (Waupun), and Jefferson Elementary (Beaver Dam).

About 500 people enjoyed meeting Puddles and seeing the region's new Centennial tabletop display at the Midwest Environmental Education Conference held in mid-October near Kenosha, Wis. Centennial pencils, note cards, and fact sheets as well as National Wildlife Refuge System Visitor Guides were personally delivered to visitors in the exhibit hall by our large, furry, blue and white friend. In addition, Ranger Stoddard provided two concurrent information sessions about Rolling Readers, Horicon NWR, and the Refuge System during the weekend, promoting refuges as potential future destinations for PBS television's Kratt brothers of the popular "Kratts' Creatures" children's program. Partners included Rolling Readers USA, Wisconsin Department of Natural Resources, Midwest Interpretive Association, and Belle Reynolds Elementary School (third grade teacher Liz Roy).

After several years of writing, filming, editing and producing, two new videos about Horicon National Wildlife Refuge were completed by Refuge staff, the National Conservation Training Center, and Refuge partners and volunteers. Both videos capture the beauty of the Refuge with dramatic footage and lovely music.



They were premiered at the Refuge's annual volunteer recognition dinner in February and received with enthusiastic applause (above). For the most part, they will replace the use of the general Refuge slide show.

"Horicon National Wildlife Refuge, Where Wildlife Comes First" is an 18-minute narrated, educational piece which takes viewers on a tour of the Refuge -- its history, habitat, wildlife and visitor services. It will be used in Refuge outreach and education and is available for sale in the Refuge visitor center from Coots Corner, administered by the Midwest Interpretive Association.

"Horicon National Wildlife Refuge, Sights and Sounds" is a six-minute unnarrated production. This video will be used in education for young audiences and as a repeating loop at display booths used in outreach events.

Partners included: National Conservation Training Center, Refuge volunteers Keri Lund, Jack Bartholmai, Jim Schultz (models and photos), neighbors Robert and Sharon Kolterman (provided access to mounds), Herman Bender (provided access to mounds), Terry Kohler (provided aerial footage), Horicon Historical Society (photos), Waupun Historical Society Don Miescke and Fred Ulrich (photos), and the Midwest Interpretive Association

Ranger Stoddard presented a concurrent session on Evaluation of Interpretive Programs during the Region 3 Visitor Services Workshop held in Fergus Falls MN June 18-20. The entire workshop was attended by 65 field office and regional office employees as well as volunteers and Friends. Her session was attended by about 20 people and was well-received.

The Friends of Horicon NWR, Refuge staff, and Leopold Wetland Management District (LWMD) staff participated in two area firefighter parades in an effort to promote the Service's fire program and the Centennial of the National Wildlife Refuge System.

On the evening of July 31, volunteer and past Friends' president Dan Bell and LWMD manager Steve Lenz provided a float for a county-wide, silent parade in Mayville. The purpose of this parade was to recognize the emergency personnel who have lost their lives, especially dedicating the 9-11 event but also all fire fighting events whether wildland and/or structural. Bell and Lenz drove one of the new type VI fire engines. Before the parade started, several fire fighters came by for a 'look-see'. It was a great educational outreach opportunity to discuss our program. After sunset, first responders and law enforcement officers traveled through the parade route with lights only. At least 500 parade watchers, most with candles, waved as the 1/2 mile of equipment slowly passed them. To culminate the event, parade attendees were treated to the sounds of a bag pipe and drummer, along with speeches 'saluting' the ceremony. Overall, it was an inspiring and timely event. Part of the ceremony specifically thanked first responders and fire fighters who were a part of the recent Quad Graphics fire. Lenz and Leopold WMD SCEP student Michael Westforth were one out of three first responders to that blaze.



On a very hot and sunny August 4, several Friends of Horicon NWR along with ranger Stoddard drove the same engine in the Iron Ridge Firefighters Parade (above) and handed out blue goose tattoos, calendar of events flyers, Centennial flyers, and Friends brochures. This time the unit was adorned with two Centennial banners, and participants honked on goose calls as they walked. A lovely photo of Stoddard in her Centennial antler hat later appeared in the Horicon Reporter newspaper, and administrative officer Pieper took great joy in plastering photocopies of that photo throughout the office. Several firefighters salivated profusely over the engine and offered space in their garages to house it for us if needed. About 5,000 people attended this popular event with a total of 86 units in the parade line-up. This was the first parade the Friends of Horicon NWR coordinated an entry for, and they are already planning to promote the Centennial in a string of parades through 2003 with the Refuge airboat in tow and Puddles in the driver seat.

On August 21, Region 3 External Affairs employees Abby Rodriguez and Chuck Traxler installed the Information Dissemination Service (IDS) on ranger Stoddard's computer in an effort to pilot the program on a field level. IDS is an automated process to manage the electronic distribution of news releases via fax and email. With many additional email addresses available on IDS, and with the new addition of electronic fax capability, the outreach capability for Horicon Refuge is greatly increased while improving on efficiency and cost-effective means for getting the news out. The Regional Office initially contracted TAJ Technologies, Inc. in the Twin Cities to develop the program for Regional Office use. Assuming all goes well with it at Horicon, it would then be available for select field stations that have active media relations.

The Refuge distributed 19 news releases. Ranger Stoddard continued to produce and distribute annual publications such as the volunteer flyer. She also coordinated, designed, and distributed hundreds of copies of the two-sided, two-color Horicon Marsh annual calendar of events and educational programs poster. The effort required participation and support of the Midwest Interpretive Association, Wisconsin Department of Natural Resources, Marsh Haven Nature Center, and Hickory Springs Creations and reflects an ecosystem approach to marketing the marsh to visitors. The Midwest Interpretive Association paid for the flyer, the Fond du Lac Senior Center Hikers volunteered to assemble the main large mailing.

Two separate GIS-based maps, one for hunters and one for visitors, were again produced by the Wisconsin DNR with input from Refuge staff.

8

Planning and Administration

8b. General Administration

Funding - 2002

Refuge Operations	1261	\$492,515
Volunteer Program	1261	\$ 2,500
Challenge Cost Share	1261	\$ 30,710 *
Maintenance Mgmt	1262	\$226,000
Nongame Bird Funds	1231	\$ 5,000
Fire Preparedness	9251	\$ 11,000
Fire Use and Mgmt	9263	\$ 28,800
Wildland Fuel Reduction Projects	9264	\$ 38,720
Rural Fire Department Assistance	9265	\$ 25,906
SCEP	1261	\$ 8,700
YCC	1262	\$15,644
		<hr/>
Total		\$885,495

* includes \$25,000 Centennial video production

Personnel

The following is a list of employees who were members of the staff at Horicon Refuge in 2002.

1. Patti A. Meyers Refuge Manager	GS-13	EOD 08/11/91	PFT
2. Diane M. Kitchen Refuge Op. Spec.	GS-12	EOD 05/31/92	PFT
3. Diane L. Penttila Biologist	GS-11	EOD 10/22/89	PFT
4. Molly K. Stoddard Park Ranger	GS-11	EOD 06/23/96	PFT
5. Jean Pieper Admin. Tech	GS-07	EOD 01/24/84	PFT
6. Jon Krapfl Biological Tech.	GS-06	EOD 04/18/93	PFT
7. Mike Madel Maint. Mechanic	WG-10	EOD 08/17/97	PFT
8. Sherry Schwoch Office Clerk	GS-02	EOD 09/07/97	INT
9. Angie Schraufnagel Office Clerk	GS-02	EOD 09/09/97	INT
10. Jill Blanke Office Clerk	GS-02	EOD 09/07/97	INT
11. Mary Hull Office Clerk	GS-02	EOD 08/17/99	INT
12. Sara Mason Student Trainee	GS-04	EOD 06/18/01	SCEP
13. Dustin Baker Maintenance Worker	WG-4749	EOD 06/10/02	STEP

14. Keith Jensen WG-5716 EOD 06/10/02 Term
 Engineering
 Equipment Operator
15. Richard Klopfer GS-404 EOD 06/10/02 TPT
 Biological Technician
 (YCC Crew Leader)



4 7 8 3 5 2 1 6



10



11

9



12

Sara Mason (above), our Student Career Experience Program student from Ohio University, returned for a second summer to assist wildlife biologist Diane Penttila with waterfowl surveys and data entry, grassland surveys, wetland habitat surveys, tern research project, water levels, purple loosestrife surveys, duck banding, carp control, whooping crane project, and frog contaminant study.

For the first time this year, the Refuge utilized the STEP program and hired Dustin Baker, a student from Oakfield High School, who worked full time during the summer and then 3.5 hours each morning during the school year. Dusty gained valuable experience while being a tremendous help to our Maintenance Mechanic.

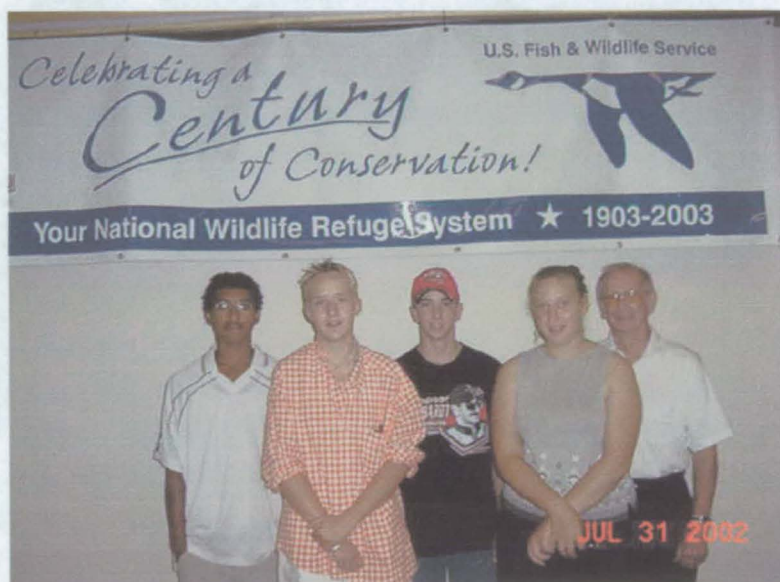


14.

Likewise, Keith Jensen (above) was hired as a temporary to assist our Maintenance Mechanic. Keith was a big help with the Main Dike rehabilitation project. He will continue working through 2003, as long as funding is adequate.

The Refuge hosted a Youth Conservation Corps crew of four young adults and a crew leader during the summer. The crew worked nine weeks and completed numerous projects, often times ahead of schedule. Projects included landscaping around the Visitor Center, replacing

signs on the Refuge, trimming trees and brush, cleaning Refuge facilities, pouring cement for various projects, painting, building a three-sided kiosk (information board), constructing a water platform for the Environmental Education Barn site, building and placing boardwalks on Redhead trail, remodeling a Refuge garage, and building boot racks and shelves. The crew was also provided many hours of environmental education that was incorporated into each project. The crew also had an accident free summer. Biological Technician Dick Klopfer, Germantown, who is a local retired high school biology teacher, was hired as the crew leader and did a tremendous job with the enrollees. Enrollees that were selected for the program included Aaron Streblow of Waupun, Emily Lewis of Mayville, Theresa Bongert of Van Dyne, and Matthew Eckerstorfer of Beaver Dam. Plans are to have Dick return in the summer of 2003 as YCC crew leader.



1. 2. 3. 4. 5.

1. Matt Eckerstorfer,
2. Emily Lewis
3. Aaron Streblow
4. Theresa Bongert
5. Dick Klopfer

Volunteers

Two hundred five volunteers worked 4,157 hours in FY02. This represents an increase in volunteers from last year (186), and a decrease in the number of hours (4,647 last year). Those figures break down to include 138 people who volunteered in 12 groups from seven core communities (Waupun, Beaver Dam, Fond du Lac, Juneau, Oak Grove, and Oakfield). They also include 117 volunteers who worked more than 2,812 hours as individuals. Volunteers worked in maintenance, wildlife, habitat, administration, and visitor services projects.

Lori Wienke of Beaver Dam, a graduate of Winona State University in Minnesota with an ecology degree, served as our volunteer intern and assisted wildlife biologist Diane Penttila with grassland surveys, purple loosestrife surveys, wetland habitat surveys, water levels, carp control, and the frog contaminant study.

With the busy fall tourist and school field trip season just around the corner, Horicon NWR hosted a volunteer training week, August 26-29, 2002. Each half-day of training centered on a different volunteer job: School Field Trip Assistants (Monday), Rolling Readers (Tuesday), Visitor Center Staff (Wednesday), and Rangers (Thursday). More than 25 volunteers attended in total, including seven brand new volunteers. Each training session included a brief presentation about the Centennial of the National Wildlife Refuge System.

The newest fall training session, for School Field Trip Assistants, was the best attended and will provide extra support for the Refuge ranger who typically handles one to three groups per day in fall with back-up help from the Refuge assistant manager. These volunteers will be eased into the job by first observing programs, then assisting, and ultimately leading. Their support will be especially critical for two newly planned School Field Trip Days scheduled to take place during National Wildlife Refuge Week in October. Several of these volunteers are retired school teachers.

Horicon NWR employees and volunteers together completed another busy but successful fall season. Altogether, a record 20 volunteers worked 479 hours this fall in the visitor center serving over 10,000 visitors by providing information and ringing up sales for Coots Corner, administered by the Midwest Interpretive Association. Because of their commitment, the center was staffed and open 7-days per week, Sept. 4 - Nov. 4. They made about \$10,800 in net sales and \$725 in the donation box.

For the fifth year, volunteer Rolling Readers will roll into school classrooms in communities around the marsh to read nature stories to children and conduct simple related activities. Last year this program was expanded with the Beaver Dam Charter School students serving as Rolling Readers in elementary school classrooms in their community as a service learning project. It was very well received not only by the young children and their teachers, but especially by the "at-risk" Charter School students and their teachers. Their participation served to increase the number of volunteer hours and the number of outreach hits.

Volunteers who contributed hours in CY2002 were honored and thanked at the annual volunteer dinner at the visitor center. About 50 people participated in this Centennial-themed event in January 2003.



Honker greeted participants as they arrived (left). Dinner (right) was followed by a centennial power point presentation and update of activities on a national, regional, state and local level thanks to help from Scott Flaherty, the R3 centennial coordinator; the Leopold Wetland Management District; and, the Wisconsin Department of Natural Resources.



Laura Sisiki of Fredrick, Md., (formerly of Beaver Dam) earned the Volunteer of the Year award for doing an outstanding job as Diane Penttila's biology intern, working 408 hours. She received a framed copy of Adam Grimm's centennial print (above, front and back) and a pair of Pelican centennial commemorative binoculars donated by Eagle Optics (left, next page). The recipient of this award was selected by three volunteers (not nominated or nominating and including last year's volunteer of the year) who reviewed nomination forms submitted by employees and volunteers for 15 volunteer candidates. The announcement of this award was coordinated via conference call by biological technician Jon Krapfl with Laura in Maryland and Diane in Vernal, Utah (who had transferred to Ouray NWR).



The Beaver Dam Charter School was recognized as the group which worked the most hours; 73 volunteers worked 827 hours as office assistants, rolling readers, traveling exhibit staff, construction, green thumbs (above), and marsh stewards. They have received this award five times -- every year since 1997 when they started volunteering (except for last year when they received the volunteer of the year award).

Tom Kukec, also of Beaver Dam, was recognized as the individual who worked the most hours. Tom worked 183 hours primarily as a green thumb, grass mower and marsh steward.



President Glenn Burg introduced the officers, board and members present of the Friends of Horicon Refuge and described current projects. Nancy Steinback and Bill and Jocie Holmes unveiled a new table top display for the Friends to use in publicizing one of those projects, the landscaping memorial projected at the visitor center (above). Refuge Manager Patti Meyers especially thanked the Friends officers and provided them with centennial certificates (below, left).



She also formally thanked the entire group of volunteers for working as partners with Refuge employees to build a better Refuge and ensure that future generations will be able to enjoy it. Volunteers presented a mock check representing the monetary value of the time they contributed over the year (previous page, lower right). The names of all volunteers were announced by their respective employee contacts.

A follow-up letter was mailed Jan. 27 to those volunteers who could not attend, summarizing the evening and the year and thanking them for their devotion to the Refuge.

Partners included: Leopold Wetland Management District, Wisconsin Department of Natural Resources, Eagle Optics, Friends of Horicon National Wildlife Refuge, numerous Refuge volunteers which included the following groups: Fond du Lac Senior Center Hikers, Columbus High School, Beaver Dam Charter School, Tom Giese family, Oakfield High School, Al Pater Family, Don Raube Family, Juneau Victorians 4-H Club, Oak Grove Owls 4-H Club, Lutheran Social Services, and Community Care, Inc.

The Marsh Steward program had another successful year. This program involves groups or individuals who adopt a site on the Refuge and then pick up litter at their site at least two times a year. This year's volunteers included Judy Cook family, Beaver Dam Charter School, Tom Giese family, Don Raube, David and JoAnn Goodlaxson, Mike Madel family, Columbus High School Ecology Club, Janice Steinbach, Jackie Bishop, Horicon Marsh Bird Club, Hyland Prairie 4-H club, Oak Grove Owls 4-H Club, Lutheran Social Services, Juneau Victorians 4-H Club, and Community Care Inc. Daycare and Preschool. Overall, 400 hours of time was spent in keeping the Refuge clean.

The invaluable leadership, assistance, and enthusiasm of all of our Refuge volunteers expands Refuge staffing, contributes talent and expertise which may not already exist on the Refuge staff, improves public relations and outreach efforts, and helps build community support for and participation in the Refuge.

Fox River NWR

Summary

Fox River National Wildlife Refuge, located 60 miles west of Horicon National Wildlife Refuge in Marquette County, is managed as an unstaffed unit of Horicon NWR. The land was acquired as part of a court settlement against the owner (Dennis O'Connel) for construction of a series of ditches to drain a peat marshland. It was established by the Director of the U.S. Fish and Wildlife Service on October 27, 1978, for the purpose of protecting an area known as the "Fox River Sandhill Crane Marsh" from further drainage, as well as preserving associated upland habitat.

Fox River National Wildlife Refuge was purchased under the Fish and Wildlife Service's Unique Wildlife Ecosystem Program. The primary objective was to preserve wetland and upland habitat along this section of the Fox River in an effort to support wildlife communities significantly different from other habitats within the region, as well as protect an important breeding and staging area for the greater sandhill crane. The proposed Refuge was planned at 1,040 acres but is currently 1,001 acres. The remainder of the area is in two private ownerships and about 95% marsh.

Fox River National Wildlife Refuge is across the highway from a County Park named after John Muir, the famous conservationist, who grew up in the immediate area of Marquette County, Wisconsin.

The uniqueness of the Fox River National Wildlife Refuge is not only sandhill crane usage but the diversity of wildlife within this wetland/upland complex. The Refuge has ten distinct plant communities ranging from upland coniferous and deciduous woodlands to five wetland communities. This diversity is responsible for the presence of about 150 different species of wildlife. Species diversity of this extent within a relatively small confined area is not found in many parts of Wisconsin.

1a. Surveys and Censuses

As part of the Annual Sandhill Crane Count, two sites on Fox River and adjoining private property are surveyed each year. Results are shown below.

Crane Count Totals:

	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
Pairs	7	5	5	2	3	9	6	5	8	2	9
Total #	58	17	12	31	7	21	22	27	31	40	22

3f. Fire Management

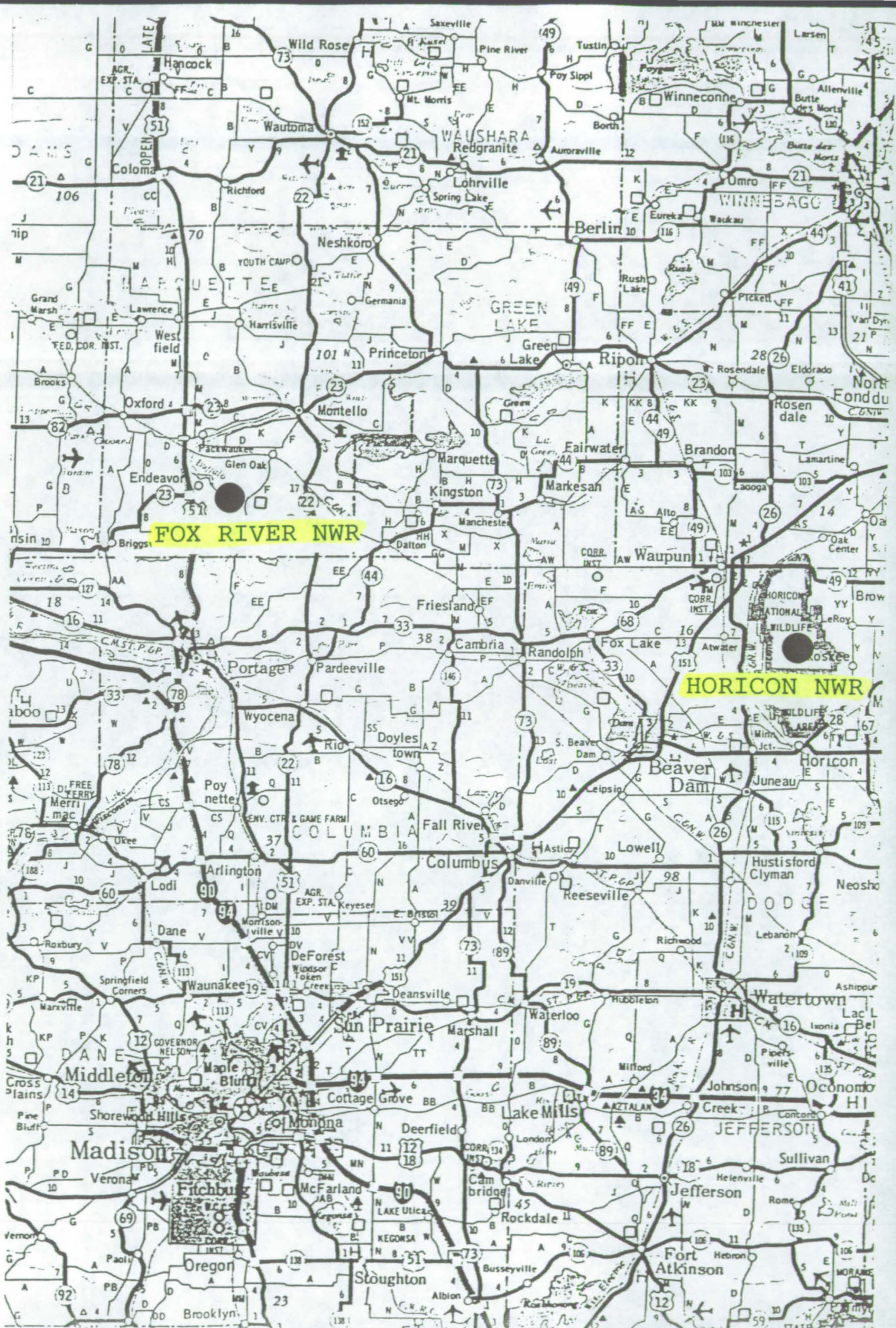
On May 4, 2002, a prescribed burn was conducted on the south field at Fox River NWR along Highway F. Weather conditions were in prescription at the beginning of the fire. Half way through the burn operation, winds changed and caused thick smoke on Highway F. A two-vehicle accident occurred despite firefighters doing traffic control and trying to stop drivers from entering the smoke filled area. The driver of the first car was taken to the hospital by ambulance and was treated and released for whiplash. The three occupants of the second vehicle did not require medical attention. Region 3 fire management arranged for a full investigation of the fire and accident. An interagency investigation team arrived the next week for interviews and a tour of the scene of the accident. Participants included Jon Krapfl - Horicon NWR burn boss, Patti Meyers - refuge manager, Tom Zellmer - zone fire management officer, William Leenhouts - Boise, Rod Bloms - Boise, and John Hoffman - region 3 safety. A final report from the investigation has not been received. One issue brought to life with this fire was the inadequate signs used by USFWS in fire management. New requirements and guidelines were drawn up since the fire. Refuge fire staff attended a state certified traffic flagging school and new road signs were purchased to make the burn operation safer.

7a. Provide Visitor Services

Two permit hunts were conducted in 2001 at Fox River NWR. The Refuge was open to an archery hunt for a four day hunt, November 8-11. Sixteen hunters were selected to hunt. Seven hunters responded to the questionnaire and one buck was taken among those hunters.

The second permit hunt was conducted opening weekend of the regular deer gun season. Twenty-five hunters were selected for this permit hunt. Twelve hunters responded to the questionnaire and four bucks and two does were taken among those hunters.

After opening weekend, the Refuge is open to the public for the remainder of the gun deer season. Use was traditionally high.



Wilderness Isl.



100-1000-1000
100-1000-1000

Summary

Gravel Island and Green Bay National Wildlife Refuges were set aside by Executive Orders in 1912 and 1913 as preserves and breeding grounds for birds. Originally under the Department of Agriculture, the islands came under the jurisdiction of the Department of the Interior by Presidential Proclamation, July 30, 1940. The Refuges are comprised of three small islands known as Gravel (4 acres), Spider (23 acres), and Hog (2 acres). Gravel and Spider Islands are designated as the Gravel Island National Wildlife Refuge while Hog Island is the lone component of Green Bay National Wildlife Refuge.

No development has taken place on the islands and they remain as they were when first placed under Federal protection. General public use is restricted due the limited and often treacherous access.

Waterfowl use on the islands is very limited since there is very sparse vegetation on these islands. Hog Island has lost all of its biggest trees due to nesting by great blue herons. In addition, some of the ground yew has thinned out over the years. However, there are still lots of places where red-breasted mergansers can find the kind of cover that they like to nest in. About 25 red-breasted merganser nests were estimated to be on Hog Island in 2002. Neither Gravel Island nor Spider Island has any permanent vegetation remaining. Spider Island lost the remnant forest which existed there as late as the 1970s. All of the trees have fallen over or been washed away. The fallen trees do provide some cover for scattered nesting of dabbling species like mallards, gadwalls, and black ducks. However, the number of nests probably do not exceed 15 to 20 in one given year. Likewise, a few Canada geese nest on the islands.

Other bird species using the islands include colonies of herring gulls and double-crested cormorants on Spider Island. One (known) pair of black-backed gulls has successfully nested on Spider Island the last several years, with three additional pairs observed among all the Refuge islands this year. Other incidental species using Spider Island include ring-billed gulls, Caspian terns, American white pelicans, mute swans, and an occasional peregrine falcon. Gravel Island has nesting herring gulls. Hog Island also supports a nesting colony of herring gulls, as well about a half dozen great blue heron nests.

A mark-recapture study of double-crested cormorants by the Contaminant Biologist at Green Bay Ecological Services Field Office and other researchers was started in 2001 on Spider Island to determine the age of first nesting, age specific survival rates, and frequency of breeding by individuals. During the summer of 2001, 100 adults and 400 nestlings were banded with red and white plastic bands and Fish and Wildlife Service bands. Additionally, 800 nestlings were banded with FWS bands and tens of thousands of additional young had been banded previously (1988-2000). Based on the data, it is estimated that approximately 20 percent of the adult breeding population at Spider Island is now marked with Fish and Wildlife Service bands, and suggest that cormorants have high natal fidelity, at least during periods of rapid population growth. During 50 total hours in July 2002, observers in three blinds sighted 24 of the 101 adults banded in 2001. They also saw 5 of 379 nestlings from 2001; none of these yearlings was observed in courtship or near an active nest. Of the 100 adults captured and banded during May

and June, 2002, the observers sighted 26. The ratio of sighting percentages for the two adult groups, 0.913 is an index of the adult survival rate. The study will be ongoing for at least 5 years.

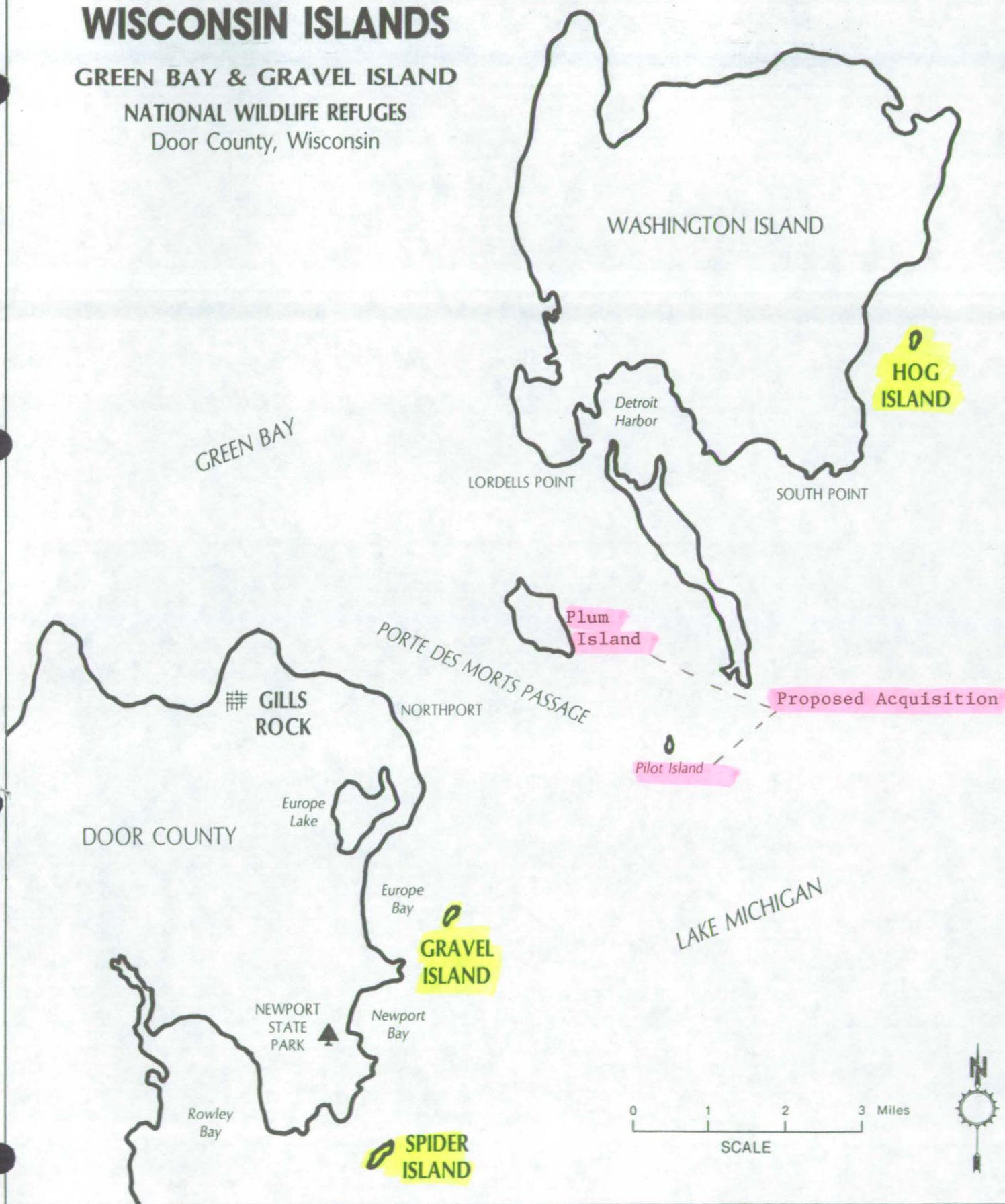
Work has proceeded on acquisition of two additional islands. The U.S. Coast Guard has relinquished control of Pilot and Plum Islands, off the tip of Door County. The Bureau of Land Management is responsible for transferring the property to the Service. Refuge staff have been meeting with local groups, Wisconsin Department of Natural Resources, Senators and Representatives, and Bureau of Land Management representatives in an effort to see that these islands are protected and managed for wildlife, while allowing limited public use.

WISCONSIN ISLANDS

GREEN BAY & GRAVEL ISLAND

NATIONAL WILDLIFE REFUGES

Door County, Wisconsin



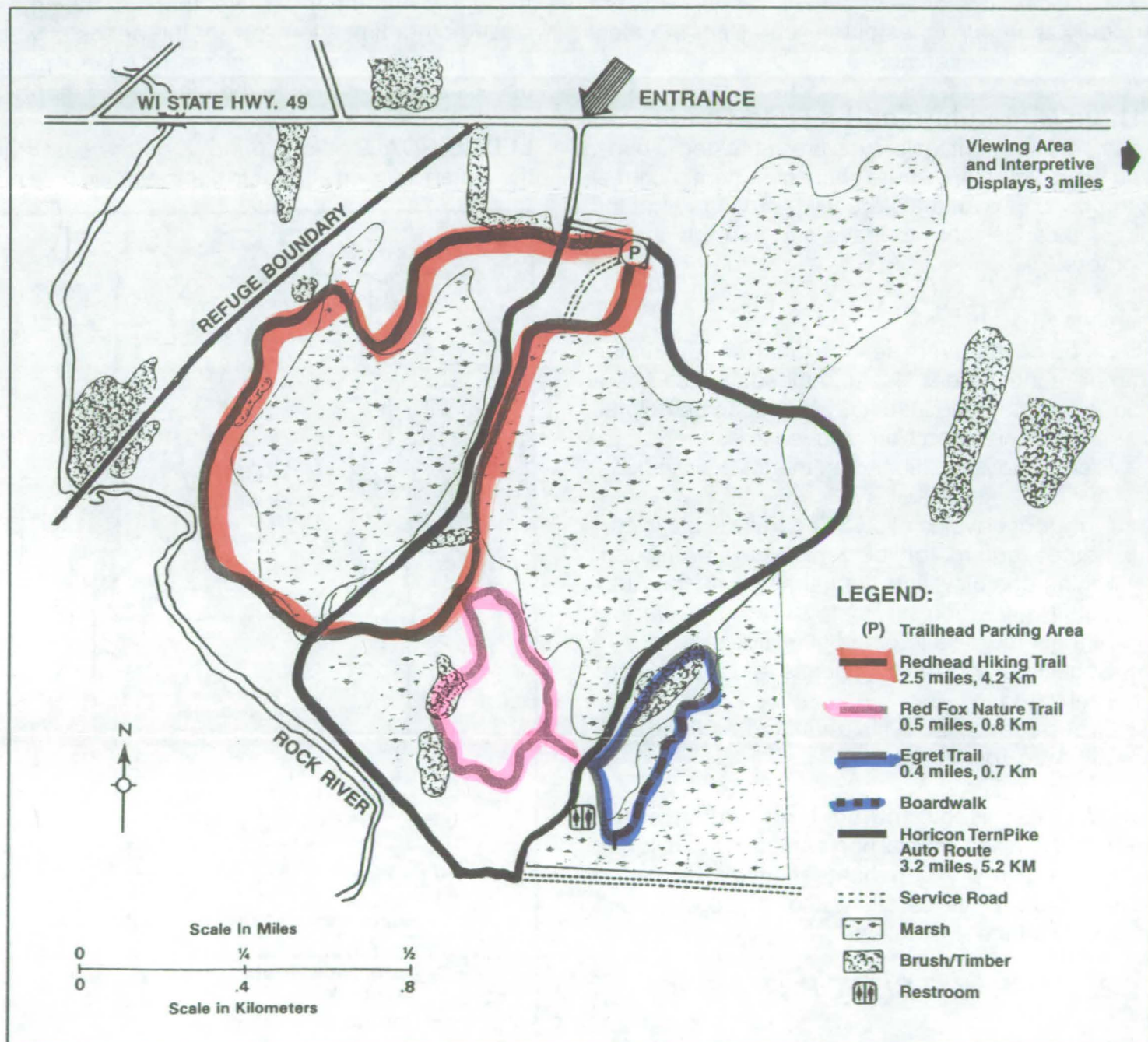
U.S. Department of the Interior
Fish and Wildlife Service



Horicon National Wildlife Refuge, Wisconsin

FOOT TRAILS AND AUTO TOUR ROUTE

Several opportunities exist for hiking and wildlife observation on Horicon National Wildlife Refuge. Three trails are available for hiking. Bicycles are not allowed on the trails. An Auto Tour Route is open at various times of the year. Hiking and bicycling are permitted on the Auto Tour Route when the route is closed to vehicles. Trails and the Auto Tour Route are marked in separate colors on the map below. For your safety and to protect the surrounding habitat, access is limited to the trails and Auto Tour Route only.



U.S. Department of the Interior
Fish and Wildlife Service



Successful Wildlife Watching

*Horicon is a great place for wildlife observation.
Here are a few tips to make your trip more enjoyable.*

■ Be Here at the Right Times

Animals are most active in the early morning and early evening hours. You are more likely to see wildlife if you visit close to sunrise or sunset. Some birds are here only at certain times of the year. Deer are most often seen in the evenings.

■ Have Binoculars and a Field Guide

These are important tools if you are interested in birds. If you want pictures, be sure your equipment is correct for the task. The animals are wild -- trying to get too close will cause them to leave and ruin the chance for others.

■ Move Slowly

Patient, quiet observers see the most wildlife. In the summer months, deer flies and mosquitos can be a nuisance -- a hat and insect repellent can be helpful.

- The area is open from sunrise to sunset.
- Picnicking is prohibited on the trails or parking areas.
- Only foot travel is allowed on trails -- bicycles, horses, and motorized vehicles are prohibited.
- Hiking and bicycling are permitted on the Auto Tour Route when the Route is closed to vehicles.
- All pets must be leashed at all times.
- Collecting or disturbing plants and animals are prohibited.
- Cross-country skiing is permitted on trails and the Auto Tour Route.

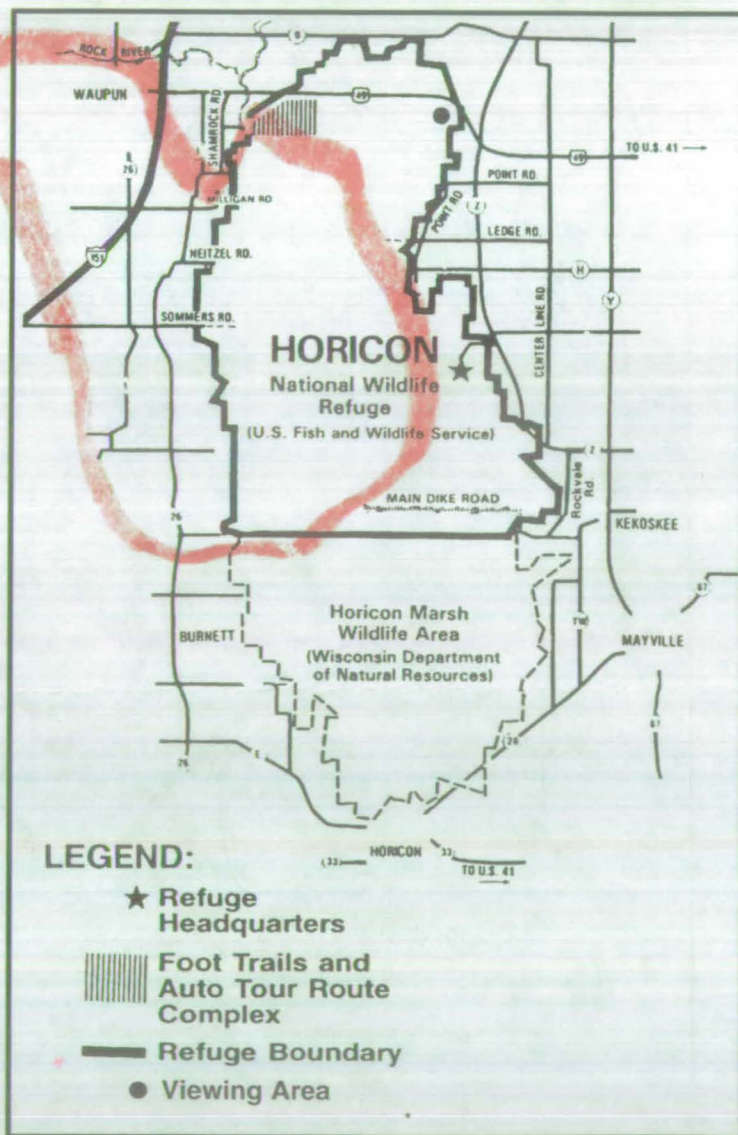
HIGHWAY 49 bisects the northern portion of the marsh. You can see several pools managed at different levels. The diversity of habitats provides for varied wildlife needs. Drive carefully and, if you stop, pull completely off the driving lane.

PLEASE WATCH FOR TRAFFIC!

A **VIEWING AREA** is located on Highway 49 just west of the intersection of Highway 49 and County Road Z. Refuge information and restrooms are also available at this location. The area is closed during the winter months (see map).

The **MAIN DIKE ROAD**, on the south end of the federal refuge, is open to vehicles from April 15 through September 15 (weather permitting). It is closed other times to allow for the needs of wildlife. During the summer, when the road is open, it provides access into the center of the marsh (see map).

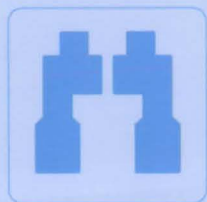
LEDGE ROAD, off of County Z on the east side of the marsh, is open all year to vehicle traffic (see map).



The Refuge Office/Visitor Center, located on County Road Z, 3.5 miles south of Highway 49, is open Monday-Friday 7:30 a.m.-4:00 p.m.

Horicon

National Wildlife Refuge Bird Checklist



Welcome to Horicon National Wildlife Refuge

Horicon National Wildlife Refuge was established in 1941 for the conservation of migratory birds, especially redhead ducks. There are more redheads nesting here than anywhere else east of the Mississippi River.

Although famous as a fall stopover for hundreds of thousands of interior Canada geese, the vitality of the marsh is much better represented by the diversity of birds that use the refuge as indicated in this bird list. In fact, an equal number of species use the marsh in spring as in fall. Look for waterfowl and perching birds in their colorful breeding plumage in spring. They are easy to find before cattails and other vegetation emerge. Plus, most birds are actively establishing and defending their nesting territories and attracting mates, so they can be plainly visible us. Remember to use binoculars and spotting scopes to get a closer look at nesting and migrating birds and other wildlife as the refuge is their home and sanctuary.

This bird list contains 223 species which have been recorded on the refuge. Another 44 birds, listed under "Accidental" birds, have been reported but are not normally expected to be present.

The English, or common names of birds are in accordance with the American Ornithologists Union's "Checklist of North American Birds" revised in 1989.

Season

Sp... Spring, March-May
S..... Summer, June-July
F Fall, August-November
W ... Winter, December-February

Status

a Abundant - Common species that is very numerous
c Common - Certain to be seen or heard in suitable habitat, not in large numbers
u Uncommon - Present but not certain to be seen
r Rare - Seen at irregular intervals of 2-5 years

* Denotes species nesting on the refuge



	Sp	S	F	W
Grebes				
___ Pied-billed Grebe*	c	c	c	
___ Red-necked Grebe	r		r	
___ Horned Grebe	r		r	
Pelicans				
___ American White Pelican*	c	c	c	
Cormorants				
___ Double-crested Cormorant*	a	a	a	
Hérons and Bitterns				
___ American Bittern*	u	u	u	r
___ Least Bittern*	u	u	u	
___ Great Blue Heron*	c	c	c	u
___ Great Egret*	c	c	c	
___ Snowy Egret	r	r	r	
___ Cattle Egret	r	r	r	
___ Green Heron*	u	u	u	
___ Black-crowned Night-Heron*	c	a	a	
___ Yellow-crowned Night-Heron	r	r	r	
Vultures				
___ Turkey Vulture	u	u	r	
Swans, Geese and Ducks				
___ Greater White-fronted Goose	r		r	
___ Snow Goose	u		u	
___ Canada Goose*	a	c	a	c
___ Trumpeter Swan	r		r	
___ Tundra Swan	u		u	
___ Wood Duck*	u	c	c	
___ Gadwall*	u	u	c	
___ American Wigeon*	u	u	c	
___ American Black Duck	u	u	u	r
___ Mallard*	a	a	a	u
___ Blue-winged Teal*	c	c	c	
___ Northern Shoveler*	c	u	c	
___ Northern Pintail	u	u	u	
___ Green-winged Teal*	c	u	a	
___ Canvasback	u	r	u	
___ Redhead*	c	c	c	
___ Ring-necked Duck	c	u	c	
___ Greater Scaup	r		r	
___ Lesser Scaup	c	u	c	
___ Bufflehead	u		u	r
___ Common Goldeneye	u		u	
___ Hooded Merganser*	u	u	u	r
___ Common Merganser	u		u	r
___ Red-breasted Merganser	r		r	
___ Ruddy Duck*	c	u	c	

	Sp	S	F	W
Hawks and Eagles				
___ Osprey	r	r	r	
___ Bald Eagle	r	r	u	r
___ Northern Harrier*	c	c	c	c
___ Sharp-shinned Hawk*	u	r	u	r
___ Cooper's Hawk*	u	r	u	r
___ Red-shouldered Hawk	u		u	
___ Broad-winged Hawk	u		u	
___ Red-tailed Hawk*	c	c	c	c
___ Rough-legged Hawk	c		c	c
Falcons				
___ American Kestrel*	c	c	c	c
___ Peregrine Falcon	r		r	r
Upland Game Birds				
___ Gray Partridge*	u	u	u	u
___ Ring-necked Pheasant*	c	c	c	c
___ Wild Turkey*	u	u	u	u
Rails and Coots				
___ Yellow Rail	r			
___ King Rail*	u	u	r	
___ Virginia Rail*	c	c	c	
___ Sora*	c	c	c	
___ Common Moorhen*	c	c	c	
___ American Coot*	a	a	a	
Cranes				
___ Sandhill Crane*	c	c	c	c



American White Pelican Jim Mattsson, USFWS



Shorebirds

___ Black-necked Stilt*	r	r	r
___ Black-bellied Plover	u	r	u
___ Lesser Golden-Plover	r	r	r
___ Semipalmated Plover	u	u	u
___ Killdeer*	c	c	c
___ Greater Yellowlegs	c	u	c
___ Lesser Yellowlegs	c	u	c
___ Solitary Sandpiper	u	u	u
___ Spotted Sandpiper*	r	r	r
___ Semipalmated Sandpiper	c	u	c
___ Least Sandpiper	c	u	c
___ White-rumped Sandpiper	r	r	r
___ Baird's Sandpiper	r		r
___ Pectoral Sandpiper	u	u	c
___ Dunlin	c	u	c
___ Stilt Sandpiper	r	r	u
___ Buff-breasted Sandpiper		r	
___ Short-billed Dowitcher	r	r	u
___ Long-billed Dowitcher	u	r	u

	Sp	S	F	W
___ Common Snipe*	c	u	c	
___ American Woodcock*	c	u	u	
___ Wilson's Phalarope*	r	r	r	
___ Red-necked Phalarope	r		r	

Gulls and Terns

___ Bonaparte's Gull	u		u	
___ Ring-billed Gull	c	u	c	
___ Herring Gull	c	u	c	u
___ Forster's Tern*	c	c	u	
___ Black Tern*	c	c	u	

Doves

___ Rock Dove*	c	c	c	c
___ Mourning Dove*	c	c	c	c

Cuckoos and Roadrunners

___ Black-billed Cuckoo*	u	u	u	
___ Yellow-billed Cuckoo*	u	u	u	

Owls

___ Eastern Screech-Owl*	c	c	c	c
___ Great Horned Owl*	c	c	c	c
___ Snowy Owl	r			r
___ Barred Owl	u	u	u	u
___ Long-eared Owl	r		r	r
___ Short-eared Owl	u	r	u	u

Nighthawks and Nightjars

___ Common Nighthawk*	u	u	u	
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Yellow-headed Blackbird, Jim Mattsson, USFWS



Swifts

___ Chimney Swift* u u u

Hummingbirds

___ Ruby-throated Hummingbird* u u u

Kingfishers

___ Belted Kingfisher* u u u

Woodpeckers

___ Red-headed Woodpecker	u	u	u	
___ Red-bellied Woodpecker	u	u	u	u
___ Yellow-bellied Sapsucker	u		u	
___ Downy Woodpecker*	c	c	c	c
___ Hairy Woodpecker*	c	c	c	c
___ Northern Flicker*	c	c	c	

	Sp	S	F	W
Flycatchers				
___ Olive-sided Flycatcher	r		r	
___ Eastern Wood-Pewee*	c	c	c	
___ Yellow-bellied Flycatcher	r		r	
___ Alder Flycatcher	u	u	u	
___ Willow Flycatcher*	c	c	c	
___ Least Flycatcher*	c	c	c	
___ Eastern Phoebe*	c	c	c	
___ Great Crested Flycatcher*	c	c	c	
___ Eastern Kingbird*	c	c	c	

Shrikes

___ Northern Shrike	r			u
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Vireos

___ Blue-headed Vireo	u		u	
___ Yellow-throated Vireo*	u	u	u	
___ Warbling Vireo*	c	c	c	
___ Philadelphia Vireo	u	r	u	
___ Red-eyed Vireo*	c	c	c	

Jays, Magpies and Crows

___ Blue Jay*	c	c	c	c
___ American Crow*	u	u	u	u

Larks

___ Horned Lark*	c	u	c	c
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Swallows

___ Purple Martin*	u	u	u	
___ Tree Swallow*	a	a	a	
___ Northern Rough-winged Swallow*	u	u	u	
___ Bank Swallow*	u	u	u	
___ Cliff Swallow*	u	u	u	
___ Barn Swallow*	c	c	c	

Chickadees and Titmice

___ Black-capped Chickadee*	c	c	c	c
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Nuthatches

___ Red-breasted Nuthatch	r		r	r
___ White-breasted Nuthatch*	u	u	u	u

Creepers

___ Brown Creeper	u		u	u
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Wrens

___ House Wren*	c	c	c	
___ Winter Wren	u	r	u	
___ Sedge Wren*	c	c	c	
___ Marsh Wren*	a	a	c	r

	Sp	S	F	W
Kinglets, Bluebirds, and Thrushes				
___ Golden-crowned Kinglet	c		c	r
___ Ruby-crowned Kinglet	c		c	
___ Blue-gray Gnatcatcher*	u	u	u	
___ Eastern Bluebird*	u	u	u	
___ Veery*	u	u	u	
___ Gray-cheeked Thrush	u		u	
___ Swainson's Thrush	u		u	
___ Hermit Thrush	u		u	
___ Wood Thrush*	u	u	u	
___ American Robin*	c	c	c	r
Mimics				
___ Gray Catbird*	c	c	c	
___ Brown Thrasher*	u	u	u	
Starlings				
___ European Starling*	c	c	c	c
Waxwings				
___ Cedar Waxwing*	u	c	c	r
Warblers				
___ Blue-winged Warbler	u	r	r	
___ Golden-winged Warbler	u	r	r	
___ Tennessee Warbler	c	r	c	
___ Orange-crowned Warbler	u		u	
___ Nashville Warbler	c	r	c	
___ Northern Parula	u	r	u	
___ Yellow Warbler*	a	c	c	
___ Chestnut-sided Warbler	c	r	c	
___ Magnolia Warbler	c	r	c	
___ Cape May Warbler	u		u	
___ Yellow-rumped Warbler	a		a	
___ Black-throated Green Warbler	c		c	
___ Blackburnian Warbler	u	r	u	
___ Yellow-throated Warbler	r	r	r	
___ Pine Warbler	r		r	
___ Palm Warbler	c		c	
___ Bay-breasted Warbler	u	r	u	
___ Blackpoll Warbler	u		c	
___ Black-and-white Warbler	c	r	c	
___ American Redstart*	c	u	c	
___ Ovenbird*	u	u	u	
___ Northern Waterthrush	u	r	u	
___ Louisiana Waterthrush	r		r	
___ Connecticut Warbler	r		r	
___ Mourning Warbler	u		u	
___ Common Yellowthroat*	a	a	a	
___ Wilson's Warbler	u		u	
___ Canada Warbler	u	r	u	

	Sp	S	F	W
Tanagers				
___ Scarlet Tanager*	u	u	u	

Sparrows, Buntings and Grosbeaks

___ Rufous-sided Towhee*	u	u	u	
___ American Tree Sparrow	c	u	c	c
___ Chipping Sparrow*	u	u	u	
___ Clay-colored Sparrow	r		r	
___ Field Sparrow*	u	u	u	
___ Vesper Sparrow*	u	u	u	
___ Savannah Sparrow*	c	c	c	
___ Grasshopper Sparrow*	r	u	r	
___ Henslow's Sparrow*	r	r	r	
___ Fox Sparrow	c		c	
___ Song Sparrow*	a	c	c	u
___ Lincoln's Sparrow	u		u	
___ Swamp Sparrow*	a	a	a	u
___ White-throated Sparrow	c		c	
___ Harris' Sparrow	r		r	
___ White-crowned Sparrow	u		u	
___ Dark-eyed Junco	c		u	c
___ Lapland Longspur	u		u	u
___ Snow Bunting	u		u	u
___ Northern Cardinal*	c	c	c	c
___ Rose-breasted Grosbeak*	c	c	c	
___ Indigo Bunting*	c	c	c	
___ Dickcissel*	u	u	u	

Blackbirds and Orioles

___ Bobolink*	c	c	u	
___ Red-winged Blackbird*	a	a	a	c
___ Eastern Meadowlark*	c	c	c	r
___ Western Meadowlark*	u	u	u	
___ Yellow-headed Blackbird*	c	c	c	r
___ Rusty Blackbird	c		c	r
___ Brewer's Blackbird	a	u	a	r
___ Common Grackle*	c	c	c	u
___ Brown-headed Cowbird*	c	c	c	u
___ Baltimore Oriole*	u	u	u	

Finches

___ Purple Finch			u	u
___ House Finch*	u	u	u	u
___ Common Redpoll				r
___ American Goldfinch*	c	c	c	u
___ Evening Grosbeak				r

Old World Sparrows

___ House Sparrow*	c	c	c	c
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Accidentals

Common Loon
Western Grebe
Little Blue Heron
Glossy Ibis
White-faced Ibis
Mute Swan
Ross' Goose
Brant
Cinnamon Teal
Black Scoter
White-winged Scoter
Oldsquaw
Gilded Eagle
Northern Goshawk
Merlin
Nothern Bobwhite
American Avocet
Willet
Ruddy Turnstone
Red Knot
Upland Sandpiper
Marbled Godwit

Hudsonian Godwit
Sanderling
Ruff
Caspian Tern
Common Tern
Great Grey Owl
Saw-whet Owl
Whip-poor-will
Tufted Titmouse
Carolina Wren
Mockingbird
Loggerhead Shrike
Bell's Vireo
Prothonotary Warbler
Cerulean Warbler
Black-throated Blue
Warbler
Worm-eating Warbler
Yellow-breasted Chat
Lark Sparrow
Pine Siskin
Pine Grosbeak

Ruddy Duck, J. Mattsson, USFWS



Horicon National Wildlife Refuge
W4279 Headquarters Rd
Mayville, WI 53050
920/387 2658

Horicon's website address:
<http://www.fws.gov/horicon.htm/>

U.S. Fish & Wildlife Service
1 800/344 WILD
<http://www.fws.gov>

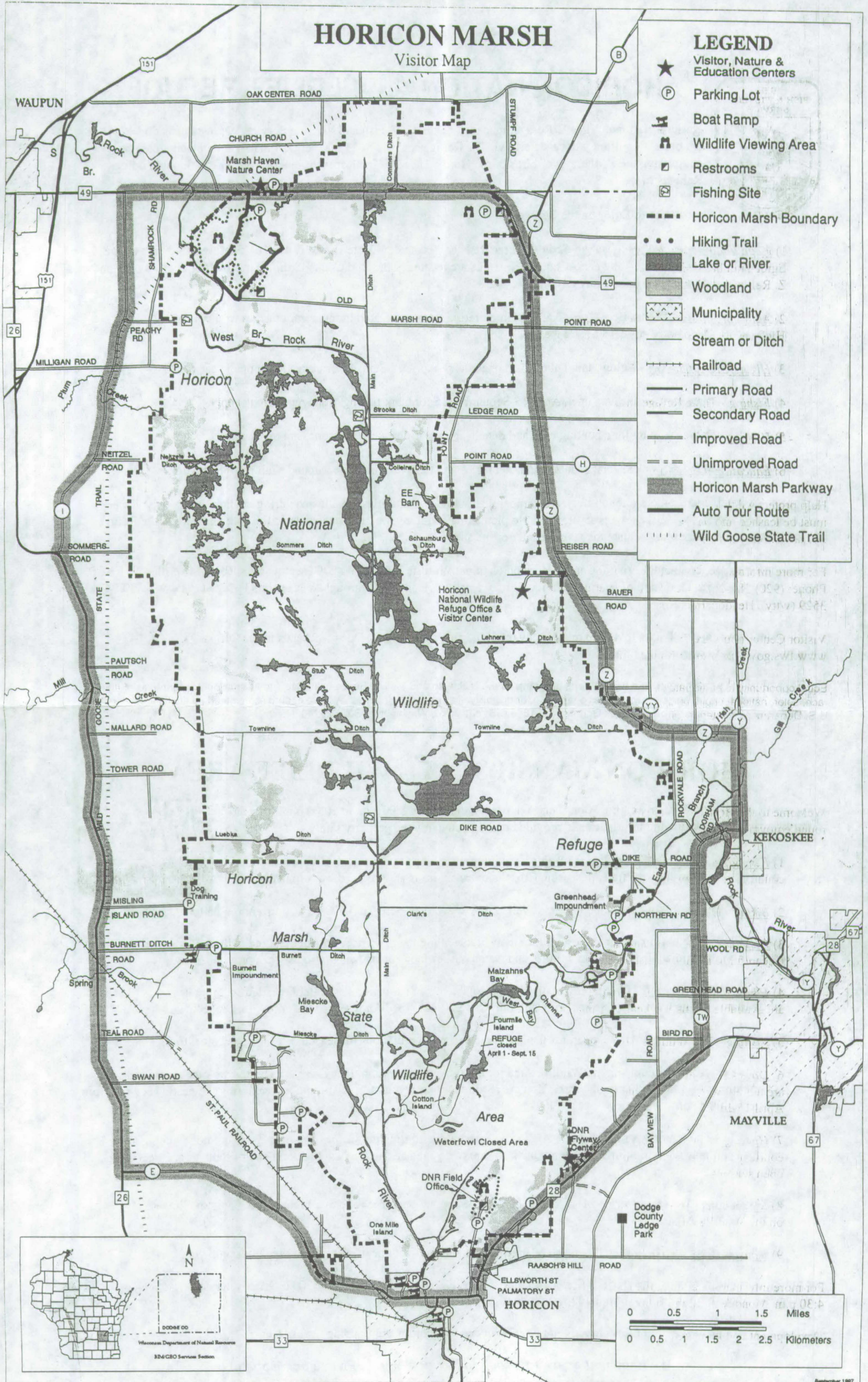
**Deaf/hard of hearing individuals may
reach Horicon NWR through the Federal
Information Relay System at 1 800/877 8339.**

Available in alternative formats upon request.



Equal opportunity to participate in, and benefit from programs and activities of the U.S. Fish and Wildlife Service is available to all individuals regardless of physical or mental disability. For information please contact the U.S. Department of the Interior, Office for Equal Opportunity, 1849 C street, N.W., Washington, D.C. 20240.

Visitor Map





HORICON NATIONAL WILDLIFE REFUGE

Horicon National Wildlife Refuge, managed by the U. S. Fish and Wildlife Service, was established in 1941 for the protection of migratory waterfowl. The Refuge consists of 21,000 acres of marsh and upland areas, comprising the northern two-thirds of the Horicon Marsh. The Refuge is one of over 500 National Wildlife Refuges in the U. S.

Activities to Enjoy on the Refuge:

- 1) Hiking/Snowshoeing/Cross-Country Skiing - Three trails are located off State Highway 49. The floating boardwalk on the Egret Trail has been replaced and is now open. Two trails are located at the Bud Cook Hiking Area, south of Highways 49 and Z. Refuge hiking trails are open every day, year-round.
- 2) Auto Tour Route - The Horicon Turnpike, with interpretive stops, is located in the northwest part of the marsh off State Highway 49. Open daily April 15-September 15.
- 3) Hiking/Biking/Driving - Enjoy Main Dike Road, open daily, April 15-Sept. 15 or Ledge Road open year-round.
- 4) Fishing - Three Refuge sites are open April 15-September 15 for bank fishing. State regulations apply.
- 5) Hunting - Call or stop by for a hunting map and details about various game, seasons, and regulations.
- 6) Educational Programs - Special events, tours, field trips and talks take place year round. Call for information.

Help protect wildlife and promote public safety. Remember that public use activities are allowed during daylight hours only. Dogs must be leashed and on the trails or roads at all times. No picnicking, camping, boating, canoeing, or fires are allowed on the Refuge. For law enforcement assistance, contact the visitor center or the sheriff's office.

For more information, contact the Visitor Center, Horicon National Wildlife Refuge, W4279 Headquarters Road, Mayville, WI 53050. Phone: (920) 387-2658. Deaf/hard of hearing individuals may reach Horicon NWR through Wisconsin's Relay Service at 1-800-947-3529 (v/tty).

Visitor Center hours are 7:30 a.m. to 4:00 p.m. Monday through Friday year-round. Open weekends in the fall.
www.fws.gov/r3pao/horicon/index.htm

Equal opportunity to participate in, and benefit from, programs of the U.S. Fish and Wildlife Service is available to all individuals regardless of age, race, color, national origin, religion, sex, sexual orientation, or disability. Persons who believe they have been discriminated against should contact: U.S. Department of Interior, Office for Equal Opportunity, 1849 C Street, N.W., Washington, D.C., 20240.

HORICON MARSH STATE WILDLIFE AREA

Welcome to the Horicon Marsh Wildlife Area. This area is open daily from 5:00 a.m. to 10:00 p.m. for year-round enjoyment. The following information is provided to help you enjoy the property safely.

- 1) Hiking/Snowshoeing/Cross-Country Skiing - Hiking trails are open year-round. Hike, cross-country ski or snowshoe the trails in season. Cross-country ski trails are groomed by volunteers.
- 2) Biking - Hiking, biking and other uses are available on the Wild Goose Trail. Check for current regulations.
- 3) Canoeing - The best canoeing opportunities are available along the main river corridor and main ditch. Please be careful to minimize disturbance to wildlife and watch out for motorboats which also use the area.
- 4) Educational Programs - Group presentations are available on a reservation basis. Public naturalist programs are available on the weekends during spring and fall. Call 920-387-7877 for reservations or program schedules.
- 5) Fishing - The Wildlife Area is open for fishing. Check current regulations for season dates, bag and size limits.
- 6) Dogs - Dogs are welcome on the Wildlife Area for hunting and recreation. However, as a courtesy to other trail users, dogs are not allowed on the hiking trail system. You are required to leash your dog on the entire area during the nesting season, from April 15-July 31st.
- 7) Hunting - The majority of the Wildlife Area is open to hunting during the various seasons. If you are not a hunter, as a courtesy you may want to limit your use to Quick's Point (a designated use area), at the north end of Palmatory Street during open seasons.
- 8) Restrictions - Horses, snowmobiles, ATV's, bicycles, camping, open fires and overnight parking are not allowed on the Wildlife Area.
- 9) Housekeeping - To help keep the marsh beautiful for others and your next visit, please take litter with you.



For more information, contact the Horicon Service Center at N7725 Hwy. 28, Horicon, WI 53032. Office hours are 7:45 a.m. to 4:30 p.m. Monday through Friday. Phone (920) 387-7860.

Development and management of this property are largely funded by hunting and trapping license fees.

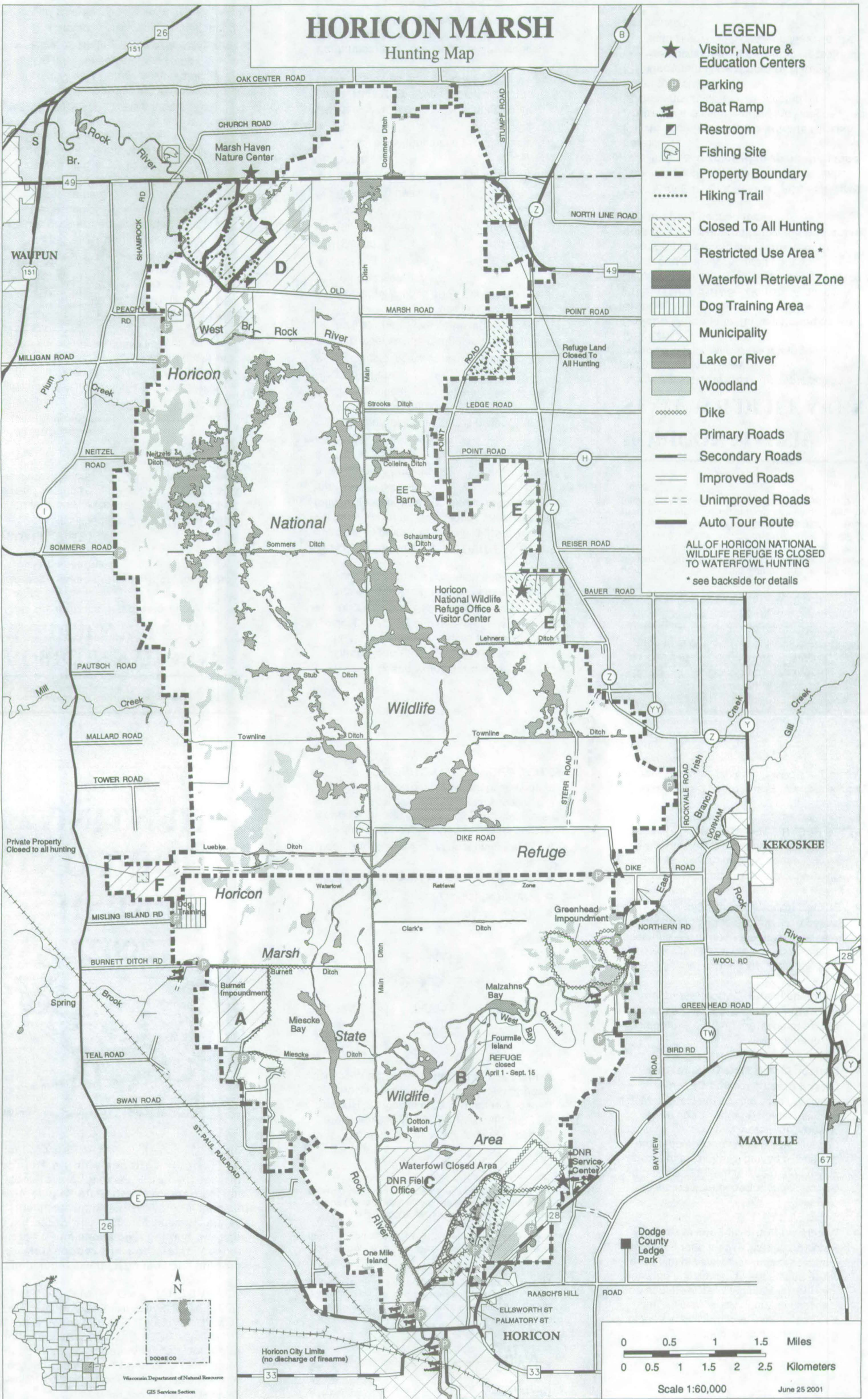
We hope you enjoy your visit to Horicon Marsh. Please come again!



HORICON MARSH

Hunting Map

- ### LEGEND
- ★ Visitor, Nature & Education Centers
 - Parking
 - ⚓ Boat Ramp
 - 🚻 Restroom
 - 🎣 Fishing Site
 - Property Boundary
 - Hiking Trail
 - Closed To All Hunting
 - Restricted Use Area *
 - Waterfowl Retrieval Zone
 - Dog Training Area
 - Municipality
 - Lake or River
 - Woodland
 - ===== Dike
 - Primary Roads
 - Secondary Roads
 - Improved Roads
 - == Unimproved Roads
 - Auto Tour Route
- ALL OF HORICON NATIONAL WILDLIFE REFUGE IS CLOSED TO WATERFOWL HUNTING
* see backside for details



(920) 387-2658. Deaf/hard of hearing individuals may reach Horicon Refuge through Wisconsin's Relay Service at 1-800-947-3529 (v/tty). Office hours are Monday - Friday, 7:30 a.m. - 4:00 p.m. and Saturday - Sunday in the fall 9:00 a.m. - 6:00 p.m.

Equal opportunity to participate in, and benefit from, programs of the U.S. Fish and Wildlife Service is available to all individuals regardless of age, race, color, national origin, religion, sex, sexual orientation, or disability. Persons who believe they have been discriminated against should contact: U.S. Department of Interior, Office for Equal Opportunity, 1849 C Street, N.W., Washington, D.C. 20240.

HORICON MARSH STATE WILDLIFE AREA

All current statewide hunting regulations apply to this wildlife area.

Horicon Marsh is in Deer Management Unit 68B.

Horicon Marsh is in Turkey Management Unit 24.

MIGRATORY BIRDS - Contact Wisconsin Department of Natural Resources for season dates, bag limits & required permits. **Development and management of this property, are principally funded by hunting and trapping license fees.**

STATE AREAS CLOSED TO ALL HUNTING

Two areas within the Horicon Marsh State Wildlife Area are closed to all hunting (see map):

(1) **Horicon Marsh State Wildlife Closed Area** - the area surrounding the Horicon Field Station and Quicks Point, located on Palmatory Street.

(2) **Wisconsin Department of Natural Resources Service Center** - located off State Highway 28 between Mayville and Horicon.

Within these areas, firearms must be unloaded and encased. Bows must be encased or unstrung.

STATE RESTRICTED AREAS

Four posted areas within the Horicon Marsh State Wildlife Area have restricted hunting (see labeled areas on map):

- **Burnett Impoundment (Map Area A)** - closed to all hunting during the waterfowl season, except deer during the gun deer season. You can retrieve, legally killed or crippled game, by hand or by dog.
- **Four Mile Island, Cotton Island, and Buffer Zone (Map Area B)** - no entry wildlife refuge from April 1 - September 15, open thereafter.
- **Horicon Marsh State Wildlife Area Closed Area (Map Area C)** - an expanded area around the Horicon Marsh Wildlife Refuge (number 1 above) is closed to migratory bird hunting. You can retrieve, legally killed or crippled game, by hand or by dog. Portions of this area may be open during the Early September Goose Season. Boundaries are as posted.
- **Waterfowl Retrieval Zone (see Map Key)** - no hunting except deer during the gun deer season is allowed in this zone which buffers the boundary line between the Horicon National Wildlife Refuge and the Horicon Marsh State Wildlife Area. You can retrieve, legally killed or crippled game, by hand or by dog.

For further information, contact the Horicon National Wildlife Refuge, W4279 Headquarters Road, Mayville, WI 53050.

(Hunters may use dogs for hunting small game. Hunters may use bicycles during archery and gun deer seasons.)

- Baiting
- Toxic shot when hunting small game
- horses
- Use of ATVs, other motorized vehicles or
- Damaging trees
- Blocking access to refuge gates with
- Scouting
- Boating
- refuge office.
- Report all injuries and accidents to the
- hours.
- no later than 1 hour after legal hunting
- You must vacate refuge and parking lot
- Shining to locate or take wildlife
- in any form
- Overnight camping or parking, and fires
- be removed each night.)
- (All items including portable stands must
- platforms, or scaffolds
- Construction or use of permanent blinds,
- Waterfowl hunting

the Federal Refuge:

following activities are also prohibited on

the Federal Refuge:

Besides the prohibited activities listed in the Wisconsin Hunting Regulations pamphlet, the following activities are also prohibited on

REFUGE PROHIBITED ACTIVITIES

- **Area between Point Road & Leher**
- **Ditch Road (Map Area E)** - closed to all hunting, except for special permit hunts during archery and gun deer seasons.
- **Area on West Side (Map Area F)** - closed to all hunting, except for special youth hunt during pheasant season.

STATE PROHIBITED ACTIVITIES

In addition to the prohibited activities listed in the Wisconsin Hunting Regulations pamphlets, the following are also prohibited on the Horicon Marsh Wildlife Area.

- Overnight camping or parking, and open fires
- Blocking access to gates with vehicles
- Unleashed dogs April 15 - July 31
- Use of horses



For further information, contact the Wisconsin Department of Natural Resources - Horicon Service Center, N7725 Highway 28, Horicon, WI 53032 (920) 387-7860. Office hours are Monday - Friday, 7:45 a.m. - 4:30 p.m.

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services, and functions under an Affirmative Action Plan.

If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20240.

This publication can be made available in alternative formats (large print, Braille, audiotape, etc.) upon request. Please call (608) 685-3744 for more information.

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REFUGE RESTRICTED AREAS

Three posted areas within the Horicon National Wildlife Refuge have restricted hunting (see labeled areas on map):

- **Hwy. 49 Hiking Trails Area (Map Area D)** - closed to all hunting except during gun deer season, November 23 - Dec 01

TO ALL HUNTING

Three areas within the Horicon National Wildlife Refuge are closed to all hunting (see map):

(1) **Observation Area** - located near the intersection of State Highway 49 and County Trunk Z.

(2) **Refuge Office/Visitor Center Area** - located off County Trunk Z.

(3) **Bud Cook Hiking Area** - located on the East side of Point Road.



not be open during either T-Zone.

The Refuge north of Highway 49 (68A) will Deer Management Units 68A and 68B. Horicon National Wildlife Refuge is within Horicon National Wildlife Refuge is within Deer (Gun) Nov. 23 - Dec. 01

Deer (Archery) Sept. 14 - Nov. 21

BIG GAME

Squirrel Sept 14 - Dec. 01

Cottontail Rabbit Oct. 19 (noon) - Dec. 01

Gray Partridge Oct. 19 (noon) - Dec. 01

(roosters only, pheasant stamp required)

Ring-necked Pheasant Oct. 19 (noon) - Dec. 01

SMALL GAME

the state seasons.

Note the season dates, which vary from

HORICON NATIONAL WILDLIFE REFUGE

HUNTING HORICON MARSH



The 32,000-acre Horicon Marsh is divided into the **Horicon National Wildlife Refuge** (managed by the U.S. Fish and Wildlife Service) and the **Horicon Marsh State Wildlife Area** (managed by the Wisconsin Department of Natural Resources). **The two areas have different hunting regulations and different season dates. You are responsible for knowing and abiding by these regulations.**

ALL FEDERAL AND STATE HUNTING REGULATIONS ARE IN EFFECT. YOU MUST COMPLY WITH THE 2002 WISCONSIN HUNTING REGULATIONS. Regulation pamphlets are available at Wisconsin Department of Natural Resources - Horicon Service Center and the Horicon National Wildlife Refuge Office/Visitor Center.