

BREEDING BIRDS OF AHGAMING PARK, 1998

FINAL REPORT

ACKNOWLEDGEMENTS

Eric Nelson, United States Fish & Wildlife Service, and Eileen Kirsch and Melinda Knudson, Upper Mississippi River Science Center, provided generous and valuable help in planning a breeding bird survey of Ahgaming Park. I offer them special thanks for discussing questions I had concerning the results of the report.

Thanks to Eric Sorenson, city manager of Winona, and Barry Drazkowski, director, Resource Studies Center, for valuing the nature of Ahgaming Park enough to give me an opportunity to study bird life there.

Thanks to Jeff Dankert, dedicated and versatile birder, for compiling the data for this report.

Thanks to Kathy Scott, Resource Studies Center, for splendid and colorful cartography, and Rory Vose, St. Mary's University, for providing a canoe.

INTRODUCTION

As I canoed across the lake at Ahgaming Park on the fifth of June, getting ready to conduct bird counts the next day, a species listed as endangered in Wisconsin caused me to hurry my chore. An osprey cried out with piercing, chirp calls above me, standing on the rim of a bulky nest of sticks on top of a power pole, eyeing me directly.

A second osprey flew from behind the trees on the southeast shore of the lake, carrying a three-foot stick in a talon. As I paddled past the power pole, the first osprey continued to cry out, and the second flew in a wide arc away from me and hovered above an adjacent slough in a blustery, northwest wind, still holding its stick.

The hovering osprey seemed to beat its wings extra-strenuously; the canoe dragged extra-slowly through extra-thick water lilies. Finally I reached a cut in the shore and moved out of the sight; then the osprey flew to the power pole and added its stick to the nest, and the alarm calls stopped.

Five days later I peered through a spotting scope from the Burlington Railroad dike at dawn, and the chirp calls pierced the air again. Once more a single, adult osprey eyed me directly from the power pole. I was about 300 meters from the pole and carried my scope another 300 meters farther away. The osprey continued to cry out, getting louder. I moved off the dike entirely, hiding myself in shrubs on the northwest shore of the lake, and still the osprey did not cease its cries.

Six days later the source of the osprey's anxiety became apparent. As both osprey stood on the nest, one began to pull bits of flesh from a fish in its talons, and two hatchlings poked their heads above the rim of the stick structure, their faces barely feathered, their necks gangly.

I was especially happy about this particular nest, since in 1990 I had seen its genesis. I had been watching other birds in the lake, and an osprey had appeared and had placed a single stick on the then-bare power pole. Somehow the stick had remained balanced with three others on the crossbar of the power pole throughout the entire, next winter. The following spring a pair of osprey had built a nest on the pole, and since then the stick structure has grown continually taller and wider each breeding season.

But June 27 this year a thunderstorm produced winds in

excess of 90 miles per hour. June 28 the nest was completely gone. A single adult osprey cried out with soft chirp calls, seeming one-fourth its former size as it perched on the pole minus its bulky platform.

I suggest that the osprey at Ahgaming Park can be edifying for Winona as the city plans to involve its community in a relatively remote area that supports sensitive wildlife. The destruction of the nest illustrates times when humans can do nothing to help wildlife, but the city's ownership of Ahgaming provides a different opportunity. It offers a chance to be pro-active in helping breeding birds and other wildlife; however the osprey's continual objection to the presence of a single birdwatcher near its nest should alert the city of the challenges ahead.

Because the interests of human and wildlife populations will not always coincide, I recommend that the highest priority of Winona's management for Ahgaming be the implementation of a legal designation that insures the interests of wildlife prevail when conflict arises.

Legal protection will provide a thorough recognition that Winona possesses a rare resource for a small municipality, 1,800 acres of extraordinary habitat that is presently functioning well as a wildlife preserve. Such a commitment will challenge Winona to enact and develop cutting-edge policies for the area. Such a commitment will challenge Winona to:

1. Develop ecologically-sensitive recreation opportunities that achieve long-term sustainability of natural history.
2. Strengthen ties with local schools, universities and wildlife institutions that also value natural history.
3. Develop information links with other cities that manage protected environments.
4. Develop international information links with Central and South American communities that protect the same bird species during winter as Ahgaming protects during summer.
4. Strengthen community pride of Winona's commitment to natural history by encouraging meaningful, conservation-minded, community involvement.

METHODS

A preliminary count of species of breeding birds at Ahgaming Park was conducted by Richie Swanson by three methods during the month of June, 1998. Fifty hours were spent in the field during ten mornings.

Breeding birds were counted by standard point-count methods at 24 locations (C. Ralph et al. 1993). Point counts in forested areas included species heard or seen within 50 meters of census points during ten-minute periods. Points nine and ten were in a marsh, and species were recorded inside circles of 100 meters.

Figure #1 in the appendix of this report shows point-count locations. Points 1-17 were visited twice. Points 18-24 were visited once.

Table #2, p. 17 shows number of individuals of species per ten counts in forested locations, points 1-8; 11-24. Because Points 18-24 were only conducted once, Table #2, p. 17 does not include first round of visits at points 1-17.

Area searches for species counts included the lake northwest of Death Road, the old cement highway, the floodplain forest between Gordy's Slough and Blacksmith Slough, plus the east edge of Blacksmith Slough. Evidence of nesting found during area searches was recorded on a data sheet that included eight categories of inferred proof and five categories of positive proof of nesting. Results are listed by species in Table #3, p. 17.

Rail and bittern surveys were conducted by standard tape-player methods (USFWS, Winona MN). Surveys were conducted twice along the northwest shore of the lake at Ahgaming and around the perimeter of the cattail marsh southeast of Death Road. No rails or bitterns responded.

A NOTE ON HABITAT

Ahgaming Park is comprised primarily of two habitat types, floodplain forest and wetlands that include emergent and sub-emergent vegetation.

Both habitat types have undergone dramatic declines in acreage since European settlement of the United States. Estimated loss of floodplain forest has been 57% to 95% at different locations in the continental United States; the north-central part of the country has incurred the greatest losses (Knutson and Klaas, 1998). Estimates of wetland losses in north-central states have also been severe. Since 1780 Illinois has lost an estimated 85% of its wetlands; Iowa, 89%; Wisconsin, 46%; Minnesota, 42% (Dahl, 1990).

The fragmentation and reduction of habitats are believed to be the cause of the population declines for many bird species that breed in the United States (Terborgh, 1989). Since many birds that breed in North America spend winters in Central and South America, loss of habitat on nesting grounds has been compounded by loss of habitat in the tropics.

Population declines of particular bird species in the tropics have been dangerously steep. In northeastern Costa Rica and in the Tuxtla Mountains in Veracruz wood thrush declines have been estimated at 77% and 95%; these declines are considered typical for wood thrush in the region (John Rappole, pers. com.).

Midwestern floodplain forests are crucial and integral to sustaining bird populations in the western hemisphere. Midwestern floodplain forests support a high diversity of birds, 292 species year-round, about twice as many as adjacent upland forests (Knutson, Klaas, 1998).

Abundance of neotropical migratory birds during breeding season has been cited almost twice as high in the Upper Mississippi River floodplain than in adjacent uplands (Knutson, Hoover, Klaas, 1996). During four years of conducting a breeding bird census of a mature floodplain forest near Winona MN, I found that 55% of bird territories belonged to NTMBs, neotropical migrants (Swanson, 1994, 1995, 1996, 1998 and unpublished analysis).

RESULTS AND DISCUSSION

Ahgaming Park, like other wetland forests studied in the midwest (Knudson, Hoover, Klaas, 1996), supports an unusually high diversity and abundance of breeding birds, many of which are faced with serious conservation concerns.

Seventy-three bird species were found during the June breeding season of 1998 in Ahgaming Park, in the area owned by the city from Highway 54/35 to Blacksmith Slough (Table #1, p. 14). Three of the species do not nest in the vicinity of Winona, the white pelican, herring gull and common merganser (Robbins, 1991). Seventy species were considered to be breeding at Ahgaming or using the area for breeding-related activities such as gathering food and nest material. Forty of 70 species were neotropical migratory birds, 57%.

Fifteen of the 70 species possess special management designations by wildlife agencies and recent ornithological literature.

Two breeding species found at Ahgaming are listed as endangered species by the Wisconsin DNR: the bald eagle and osprey.

Three are listed as species of management concern for Winona's location, Region 3, by the United States Fish and Wildlife Service: black tern, cerulean warbler, red-shouldered hawk.

Four are species identified as high-management concern for midwestern floodplain forests: cerulean warbler, great-crested flycatcher, prothonotary warbler, yellow-billed cuckoo (Knudson, Hoover, Klaas, 1996). Two of these species, the great-crested flycatcher and prothonotary warbler, were found in high, relative abundances at Ahgaming (Table #2, p. 16).

Seven more are species identified as species of medium management concern for midwestern floodplain forests (Knudson, et. al. 1996): American redstart, chimney swift, Baltimore oriole, indigo bunting, gray catbird, warbling vireo, common yellowthroat. Two of these species, the American redstart and Baltimore oriole, were found in high, relative abundances at Ahgaming (Table #2, p. 16).

A least bittern, an additional species of management concern for Region 3, USFWS, was seen in Ahgaming by me during the breeding season in 1990.

Four of the "special-designation" species present exceptional management opportunities at Ahgaming: the cerulean warbler, red-shouldered hawk, prothonotary warbler and black tern. I highlight them to offer the city an

introduction of the breeding bird ecology at Ahgaming. But I stress that the four species offer only a glimpse of the richness and complexity of the avian life and management issues at Ahgaming.

The Cerulean Warbler

Cerulean warblers were heard singing during point counts along the projected route of road access to Ahgaming Park, between Highway 54/35 and the abandoned railroad dike that is also the projected route of road access (Figure #1, point 18). Cerulean warblers were also heard at USFWS boat landing north of the projected road access, at point counts 250 and 500 meters south of the projected road access and at the mouth of the slough leading to the boathouses in Wisconsin. (Figure #1, points 19-20).

The cerulean warbler shows the largest rate of decline of any warbler in North America, 4.2% per year from 1966-1996 (Swanson, 1998). Forest fragmentation, loss of old-growth forests on breeding grounds in North America and wintering grounds in South America, and cowbird parasitism are probable causes of the population decline of the cerulean warblers (Swanson, 1998). Throughout its breeding range cerulean warblers show a strong preference for forests with exceptionally tall trees and are rarely found in woods with small trees (Paul Hamel, pers. com.). In local floodplain forests cerulean warblers appear to rely on the tallest trees with the most substantial structure (M. Knudson, pers. com.). At Ahgaming cerulean warblers were found only in the old forest near Highway 54 and were heard singing from the tallest cottonwoods in the woods.

The cerulean warbler is a small bird with dazzling blue colors and a faint, whispery song that seems to float down from the highest, thickest, most green patches of forest canopy in the Winona area. The species is a prized sighting for many birdwatchers, since it is difficult to locate. On a birding trip in Texas I told a Nature Conservancy bird guide I knew cerulean warbler locations and was quickly offered a job as a guide in Minnesota.

Development of a road could diminish the success of breeding cerulean warblers at Ahgaming in several ways: 1.) the loss of tall trees used for nesting sites; 2.) creation of habitat for a nest parasite of cerulean warblers, the brown-headed cowbird, by forest fragmentation <e.g.increasing edge habitat and creating canopy openings>; 3.) increasing the risk of nest predation.

Conserving tall trees for cerulean warblers may seem like an obvious, good measure for the species. But the subtler threats related to forest fragmentation, nest parasitism and nest predation, cannot be understated. Cowbird parasitism has been implicated as a primary cause in the near-extinction of the Kirtland's warbler (Terborgh,

1989), and is believed to be a larger problem in the midwest than other regions of the continental United States (Hoover and Brittingham, 1993). Nest predation of neotropical migrants breeding in small, fragmented forests in the midwest have been recorded at greater than 80%, suggesting a reproductive rate so small that yearly offspring cannot replace annual adult mortality (S. Robinson, 1992).

The cerulean warblers at Aghagaming were seen in a location relatively easy to access. They present an opportunity for a local, university student or ornithologist to study a bird that has grown to be symbolic of the decline of NTMBs in the western hemisphere. Study of cerulean warbler nests would aid wildlife agencies in determining and providing nesting requirements for this important species.

The Red-Shouldered Hawk

A red-shouldered hawk was seen throughout Ahgaming Park this June, near an old nest site in the woods about 500 meters east of the Wagon Bridge, along Death Road, in Sam Gordy's Slough and near the old, cement bridge on the old, dirt road that runs beside the Mississippi River. I have seen red-shouldered hawks at Ahgaming since the early 1980's and a nest used 1994-1996.

In the midwest red-shouldered hawks are found almost exclusively in floodplain forests (Knudson, Hoover, Klaas 1992). The species relies upon floodplain forests to reproduce (Crocoll, 1994). Like many birds that use specific habitats exclusively, the red-shouldered hawk has experienced alarming population declines. In Wisconsin, Illinois, Michigan and Iowa population losses have been estimated at 90% since pre-settlement times (Crocoll, 1994).

In my opinion the red-shouldered hawk is the most exciting hawk in North America. Its loud screams split the air unforgettably, and it flies with falcon-like bursts of speed, flashing rich rufous colors.

Red-shouldered hawks have stared at me from perches in trees, screaming until I left. The species has made "close passes" at humans near nests (Crocoll, 1994). Aerial chases that involve crows, blackbirds and owls occur at Ahgaming, as well as plunges into sloughs for frogs.

The red-shouldered hawk can be intolerant of human activity. In the Pegaunnock watershed of New Jersey the species is retreating to the most remote areas; in

California seven of ten nests failed due to human disturbance (Crocoll, 1994). On pools 4-8 of the Upper Mississippi River most nest sites found were more than 300 meters from highways and 500 meters from the main channel (Stravers, 1993).

At Ahgaming a nest site 350 meters from a swimming/picnicking beach has been abandoned. This June red-shouldered hawks were encountered in a more remote part of Ahgaming, in woods and sloughs near the Burlington Railroad dike.

Food supply is an essential factor for nesting success of the red-shouldered hawk (Crocoll, 1994). Increased human activity at Ahgaming may disrupt food gathering of red-shouldered hawks. Red-shouldered hawks hunt exclusively from perches, diving on prey by surprise (Crocoll, 1994). The species flushes from perches when motorized boats or canoes pass by on sloughs or when foot traffic passes by in woods (pers. obs.).

Construction of roads, trails or buildings that fragment the floodplain forest at Ahgaming may attract two primary nest-site competitors of red-shouldered hawks, the great horned owl and red-tailed hawk. The latter two species seem to be supplanting red-shouldered hawks in fragmented forests (Crocoll, 1994). Both competing species are abundant in areas surrounding Ahgaming (pers. obs.).

The Prothonotary Warbler

This June Ahgaming Park seemed saturated with prothonotary warblers; at times I wondered if their population could be any denser. Nest sites, broods and singing males were marked on a map from Death Road southeast through Gordy's Slough (Figure #2 in appendix). I estimated 25-30 pairs in the area, which comprises 250-300 acres.

In Ahgaming prothonotary warblers were detected inside 50-meter circles at a rate of 7.7 birds every ten point counts (Table #2, p. 16); in a much larger census of floodplain forests from Winona to Prairie du Chien, 1993-1995, prothonotary warblers were found 6.1 per ten point counts (Knutson, Hoover, Klaas, 1996).

Like the red-shouldered hawk, prothonotary warblers are rarely found outside the floodplain forest on the Upper Mississippi River (Knutson et. al., 1996). Prothonotary warblers breed exclusively in floodplain forests (Flaspohler, 1996). During winter the species inhabits Latin American mangrove swamps that are being converted to shrimp farms and fuelwood (Terborgh, 1989). The population of prothonotary warblers has declined 1.6% per year, 1966-1994 (Probst, Thompson, 1996).

At Ahgaming the prothonotary warbler can be seen flying suddenly from a small, dark hole in a rotten tree stump, a tiny gold bird singing with impossible loudness. Frequently a green worm hangs from its bill, and the prothonotary warbler lights on a nearby branch, giving a human observer a beady, black look, waiting to re-enter its nest hole.

Like the cerulean warbler, the prothonotary warbler is prone to nest failure due to cowbird parasitism. A recent study on the Upper Mississippi River found cowbird parasitism rates the highest recorded for the species in scientific literature (Flaspohler, 1993). Nest failure is also caused by house wrens entering prothonotary warbler holes and destroying eggs (Flaspohler, 1993).

If trails at Ahgaming Park are as narrow as possible, and no mowing occurs, and no extra openings in the forest are created, use of the area by cowbirds can be minimized (Robinson et. al., 1992). The public can be informed by interpretive trail or center that popular wren houses sold in retail stores actually increase the pressure on NTMBs with current population declines.

Nest box efforts for prothonotary warblers have been tried with mixed success (Flaspohler, 1993); a local

institution could implement nest boxes at Ahgaming. Population monitoring of the species has been hampered due to inaccessibility (Flaspohler, 1993); at Ahgaming most prothonotary nests and most of the floodplain can be studied and censused by foot, without aid of a boat during normal pool levels.

House wrens were the most abundant bird found at Ahgaming (Table #2, p. 16); their effect on the nesting success of prothonotary warblers could be studied at Ahgaming.

The prothonotary warbler is the species featured on the souvenir patch of the local bird club. Unlike the cerulean warbler and red-shouldered hawk, it is a relatively easy bird to see. The species suffers many problems common to other NTMBs in decline, is a floodplain-forest specialist, relies on dead wood, is a lively, attractive bird. Educational and interpretive efforts should feature the species.

The Black Tern

A pair of black terns was seen at the lake northwest of Death Road, exhibiting defensive behavior associated with nesting. Groups of 6-10 terns were seen diving into sub-emergent/emergent vegetation in the wetlands in Blacksmith Slough in the southern half of Ahgaming. Black terns were seen flying constantly back and forth between Blacksmith Slough and into Trempealeau National Wildlife Refuge, "the most important nesting area for black terns on the upper Mississippi River" (Faber, 1992).

The population of black terns in the early 1990's in North America was estimated to be only one-third the size as in the late 1960's (Dunn, Agro, 1995). On wintering grounds in Panama flock sizes before 1960's comprised hundreds of thousands of black terns; currently flock sizes are tens of thousands (Dunn, Agro, 1995).

At Ahgaming black terns wheel their way high above wetlands and sloughs, flitting gracefully; they skim the water surface with the alacrity of swallows and hover singly or in pairs, chattering with fast, thin calls, diving in sudden drops.

Probable causes for the decline of black terns include the loss of wetlands on breeding grounds and migration routes in North America and reduced food supplies due to agricultural control of insects and overfishing in Latin America (Dunn, Agro, 1995).

On the Upper Mississippi River nest success for black terns was associated with water depth at nest sites, mammalian predation and undetermined disappearance of eggs (Faber, 1992). Hatching success was greater on artificial platforms than on natural nest sites (Faber, 1990). Reproduction may be increased by placing nest platforms in marshes with cattail and bur-reed beds, in water deep enough to discourage approach by raccoons (Faber, 1992).

Nest platforms for black terns could be tried at three locations at Ahgaming: 1.) the lake northwest of Death Road; 2.) the cattail marsh southeast of Death Road; 3.) the wetlands in the southern portion of the city-owned property, adjacent to Trempealeau Refuge. In the latter location efforts would have to be made to restrict boat traffic from nest locations; however this location represents the largest wetlands and is adjacent to existing nesting colonies. Boat traffic will still be able to move through Blacksmith Slough.

A note about wood ducks

Wood ducks used Ahgaming during June in two primary ways: 1.) nesting area; 2.) protection during molt.

During an area search of the lake at Ahgaming, June 10, 99 wood ducks were seen on the lake. Forty-six were downy young. Feeding occurred continually.

Between point counts on the dirt road beside the Mississippi River, June 6, 65 wood ducks were seen loafing on logs and shores on inside sloughs. I did not have time to observe every duck, but many were males in eclipse, distinguished by red eyes and red coloration on bills. Bellrose writes, "the eclipse molt starts in early June. During eclipse molt the wood ducks seek swamps, wooded ponds and marshes where cover is dense and abundant. Few are seen in proportion to the numbers molting." (Bellrose, 1976).

A note about cliff swallows.

It seems as though no life forms could be affected more by a change in the condition of the Wagon Bridge than cliff swallows. Two-hundred forty-eight cliff swallow nests were counted beneath the bridge. Cliff swallows began to nest beneath the bridge in 1993.

TABLE #1--BIRD SPECIES AT AHGAMING PARK, JUNE 1998

1. American egret
2. American goldfinch
3. American redstart
4. American robin
5. American starling
6. Bald eagle
7. Baltimore oriole
8. Barn swallow
9. Barred owl
10. Belted kingfisher
11. Black tern
12. Black-capped chickadee
13. Black-crowned night heron
14. Blue-gray gnatcatcher
15. Blue jay
16. Blue-wing teal
17. Brown creeper
18. Brown thrasher
19. Brown-headed cowbird
20. Cedar waxwing
21. Cerulean warbler
22. Chimney swift
23. Cliff swallow
24. Common crow
25. Common grackle
26. Common merganser
27. Common yellowthroat
28. Double-crested cormorant
29. Downy woodpecker
30. Eastern kingbird
31. Eastern phoebe
32. Eastern wood peewee
33. Gray catbird
34. Great-blue heron
35. Great-crested flycatcher
36. Green-backed heron
37. Hairy woodpecker
38. Herring gull
39. Hooded merganser
40. House finch
41. House sparrow
42. House wren
43. Indigo bunting
44. Killdeer
45. Mallard

46. Mourning dove
47. Nighthawk
48. Northern cardinal
49. Northern flicker
50. Orchard oriole
51. Osprey
52. Pileated woodpecker

TABLE #1--continued

53. Prothonotary warbler
54. Purple martin
55. Red-eyed vireo
56. Red-bellied woodpecker
57. Red-headed woodpecker
58. Red-winged blackbird
59. Rock dove
60. Rose-breasted grosbeak
61. Rough-winged swallow
62. Rufous-sided hummingbird
63. Song sparrow
64. Tree swallow
65. Turkey vulture
66. Warbling vireo
67. White pelican
68. White-breasted nuthatch
69. Wood duck
70. Yellow-bellied sapsucker
71. Yellow-billed cuckoo
72. Yellow-throated vireo
73. Yellow warbler

Note: Common merganser, herring gull and white pelican are nonbreeding species.

TABLE #2--Relative abundance of bird species at forested points at Ahgaming Park, June 1998. Relative abundance= number of individuals per 10, 50-M radius point counts.

<u>Species</u>	<u>Relative abundance</u>
House wren	13.64
Great-crested flycatcher	9.55
American redstart	9.09
Song sparrow	9.09
White-breasted nuthatch	8.64
Prothonotary warbler	7.73
Baltimore oriole	6.82
American crow	6.36
American robin	5.91
Downy woodpecker	5.91
Warbling vireo	5.45
Yellow-bellied sapsucker	5.45
Eastern wood peewee	5.00
Northern cardinal	4.55
Brown-headed cowbird	4.09
Blue jay	4.09
Red-bellied woodpecker	3.64
Blue-gray gnatcatcher	3.18
Red-winged blackbird	3.18
Tree swallow	2.73
Red-eyed vireo	2.27
American goldfinch	1.82
Pileated woodpecker	1.82
Brown creeper	1.36
Cerulean warbler	1.36
Common grackle	1.36
Hairy woodpecker	1.36
Northern flicker	1.36
Yellow-throated vireo	1.36
Gray catbird	0.91
House finch	0.91
Wood duck	0.91
Yellow-billed cuckoo	0.91
Black-capped chickadee	0.45
Brown thrasher	0.45
Cedar waxwing	0.45
Mourning dove	0.45
Rose-breasted grosbeak	0.45

TABLE #3--Number of breeding records by inferred and positive evidence by bird species at Ahgaming, June 1998.

<u>Species</u>	<u>Inferred</u>	<u>Positive</u>
American redstart	1	
American robin	5	
Baltimore oriole	2	
Black-capped chickadee		1
Black tern	1	
Brown creeper	1	
Cedar waxwing	1	
Cliff swallow	248	
Common grackle	1	
Downy woodpecker	2	1
Eastern kingbird	1	
Eastern phoebe	1	1
Gray catbird	1	
Hairy woodpecker	2	
Hooded merganser	1	
House wren	2	
Mallard		3
Prothonotary warbler	6	4
Osprey		1
Red-winged blackbird	3	1
Rough-winged swallow	1	
Song sparrow	3	
Tree swallow	5	
Warbling vireo	3	
White-breasted nuthatch		2
Wood duck		8
Yellow-bellied sapsucker	3	1

Inferred evidence = nest building, adult distraction display, a used nest, fledglings, an adult carrying feces or food, an adult leaving or entering a nest, long-tailed young.

Positive evidence = a nest with eggs, begging heard or seen, a brood in a nest, downy or short-tailed young.

SUGGESTED ACTIVITIES

Winona Waterfowl Week. If Ahgaming Park were closed to duck hunting due to health and safety issues, migrating ducks, geese and possibly a few Tundra swans will likely find the Ahgaming area an attractive feeding and resting spot during fall. Classes could visit Ahgaming observation sites during peak migration. Visits made during different grade levels could establish a school tradition in Winona; students could experience one of the largest migratory bird flyways in the world. Because waterfowl observation represents a relief from the classroom, perhaps just three visits--one during elementary, middle and high school--could provide a lasting impression that the migratory flyway is valued by community leaders, is a source of pride for the community, a unique feature of the community's identity.

Nest boxes and platforms. Possibilities are myriad, but any projects must be carried out with careful advice from an ornithologist or wildlife agency, since mistakes can increase predation of nesting birds and encourage proliferation of pest species such as house sparrows, house finches and starlings. The prothonotary warbler and black tern are only two species in decline that could be helped.

Chimney swifts are an intriguing possibility. A lack of old-growth forests and new chimney designs has left this species short of nesting places. Structures could be built by shop classes, monitored by biology classes, analyzed by math and writing classes. The species is easy to see and begins nesting before the end of the school year. A successful chimney swift structure could produce a dramatic spectacle, hundreds of swifts funnelling into the structure at once.

No wood duck houses exist on the northwest shore of the lake at Ahgaming, though the shore is wooded, and downy young of wood ducks were seen feeding in the area. Wood duck houses could be added throughout Ahgaming.

The great-crested flycatcher is a neotropical migrant of concern that may be helped/studied in nest-box situations at Ahgaming.

International Connections. Usually North Americans think of "our birds" flying south for the winter, but ornithologists currently believe many species evolved in South America and expanded their ranges gradually north, increasing their breeding territories (Skutch, 1996). The

neotropical migrants that breed at Ahgaming are virtual extensions of South and Central American life. Floodplain forests are important for bird life all around the world. If Ahgaming were designated an official conservation area, Winonans could make website and other information connections to similar projects on different continents. Sister-city relationships could form. Foreign language classes could get involved, as well as geography, biology and computer classes.

Interpretive Bird Brochure. Figure #3 in the appendix is a copy of a brochure produced by Oregon state parks. Though just one page, the brochure offers drawings and fundamental information about the identification and natural history of twenty birds. It also includes a fundamental description of a specific habitat. In a similar brochure the habitats and birds at Ahgaming can be described. A local artist could be hired to produce drawings. Conservation issues for birds can be stressed.

Winona/Lacrosse Bird Guide. Directories for locating birds are popping up everywhere, but as far as I am concerned, none make imaginative attempts to educate wildlife enthusiasts about conservation issues. Too many are also produced by a single authority for an area. I suggest a Winona/Lacrosse guide to appeal to people from both Wisconsin and Minnesota, from the Twin Cities as well as Milwaukee/Chicago. Enough expert birders exist in Winona/Lacrosse that individual areas can be contracted to individuals most familiar with specific locations. Conservation issues can also be highlighted by area-- briefly but attractively, creating a new concept in regional guides.

Interpretive Trails or Signs. Individual bird species can be highlighted, describing connections to South and Central America, vegetation, water, flooding, other birds, other midwestern habitats. Trees and plants, habitat types can be identified. Ahgaming history, Native American history, settlement, general river history, loss of habitat can be mentioned. Exotic plants that are inhibiting forest regeneration can be identified, as well as saplings enhancing regeneration. The question of how specific habitats sustain themselves can be thematic. In places where views of Wisconsin bluffs are dramatic, the River Warren and other geologic features can be mentioned. Contrasting views of an industrial waterfront, navigation

and residential facilities can prompt questions.

Naming parts of Ahgaming Park. The fact that almost nothing is named at Ahgaming can be viewed positively. It reflects that the area remains relatively wild. But a lack of names does not facilitate communication. Perhaps names that correspond to the wildness of the park can be adopted. In my field notes I called things "Osprey Lake," "River Road," "Death Road Marsh," "Railroad Slough," "Sam Gordy's Slough," "Cerulean Corners." In my head "Death Road" is sometimes "Prothonotary Lane." "Osprey Lake" is now "Blown Osprey Lake."

Graphic Representation of Ahgaming. Figure #4 in the appendix is also a copy of a brochure produced by Oregon state parks, a colorful representation of a specific habitat. A similar representation could be produced for the floodplain forest and wetlands of Ahgaming. The representation could be brochure-sized, poster-sized, or in the case of a visitor center, even wall-sized. An excellent example of a colorful representation of a forest environment can be obtained from Humbolt Redwoods State Park, California.

A SUGGESTED PHILOSOPHY

I think the development of Ahgaming Park by the city of Winona presents a paradox. The area is rich in natural history, and the city wishes naturally to enhance the area's value by encouraging human visitors to experience meaningful connections to the park. But wildlife thrives in remoteness, and as the city provides increased access to the park, the remote nature of the park begins to be threatened. The very quality that makes Ahgaming unique, its isolated nature, begins to dissolve immediately.

Often paradoxes are resolved by paradigm shifts, new approaches and perceptions. In The Courage to Create Rollo May pointed out how the mathematician Poincare exhausted unworkable solutions to the problem of Fuchsian functions before finally a true solution emerged. I hope this is not the case for Ahgaming Park, for I fear that mistakes may affect wildlife in the area in ways difficult or impossible to reverse. That is why, in the introduction of this report, I suggest the priority of the city should be a legal designation for Ahgaming that protects wildlife interests and their requirements for isolation against all other interests.

The logical first step to enhance the natural resource is, I believe, to protect the splendor of it as it currently exists. The following steps involve creating new and innovative concepts for the park. I suggest a few and encourage the creation of many more.

Any plan to attract motorized boating to the area involves several detrimental possibilities for the breeding birds of Ahgaming Park. Currently boat traffic in Sam Gordy's Slough and other inner sloughs is relatively low, and the sloughs support a high density of a species of high management concern, the prothonotary warbler. The two conditions are probably not coincidental. My assessment corresponds with Flaspohler's. "Nests were often placed in severely rotted trees in relatively areas over water where they are vulnerable to damage from storms and wave action from boats."

The nest of an endangered species found at Ahgaming, the osprey, is in the center of a lake where virtually no boating occurs. The nest of a second osprey, less than 50 meters from city-owned property near Winona Crossing, on Trempealeau Refuge, is located where motorized boating is prohibited.

Less than a mile from Ahgaming the nest of another endangered species, the bald eagle, is located in a spot

that seems to be the farthest, possible place in the floodplain away from motorized boating. Eagle nests are on the rise on the Upper Mississippi River. If Ahgaming stays relatively quiet, someday it too might support a nest of our national symbol.

Red-shouldered hawks and ospreys were seen throughout the sloughs at Ahgaming. Both species hunt from perches and are flushed by boat traffic. If boaters attracted to the outer shore of Ahgaming make the natural exploration into the inner sloughs, food gathering for nestlings of both species may be disrupted. Wood ducks will also be disturbed.

Red-shouldered hawks and ospreys were seen circling above the outer shore (channel side) of Ahgaming; increased boating to the outer shore may push both species farther into a floodplain forest already squeezed between the highway and boat traffic.

If boaters or other visitors picnic on the outer shore and inner sloughs of Ahgaming, food waste will likely attract house sparrows, house finches and starlings. Presently these three species are concentrated only in the boathouse area of Ahgaming. The house sparrow and starling are exotic, pest species, and the house finch readily adapts to man-made environments and is enjoying a population explosion. All three species compete with neotropical migrants and native species for nest holes. Crows and raccoons, prolific nest predators, are also attracted by food waste from picnickers.

Some human visitors may realize the possibility that they have suddenly discovered one of the last, quiet, remote places to camp on the Upper Mississippi River, even if camping is illegal. If this occurs, vegetation that is already struggling to regenerate may be trampled or cleared. Dead river birch and dead snags that house tree sparrows, prothonotary warblers and other hole nesters may be pushed easily down in pursuit of firewood. Presently there is a fire scar with a snag across it 500 meters upstream from the Wagon Bridge.

Any clearings created by human visitation or for any other purposes will likely create feeding habitat the nest parasite, the brown-headed cowbird. Any mowed area in the park will do the same.

If an interpretive center is created to complement the natural history of Ahgaming, the merits of an off-site location should be explored. In Arivaca, Arizona a store front has been revitalized to serve as a visitor center/office for a fragile ecosystem a mile out of town, a

cienea. The visitor center/office is located next to a grocery store and across the street from a local cafe. I patronized both businesses when I was there.

Outside Coos Bay, Oregon a visitor center for an protected estuary has been built high on a hill--a good, long walk from the estuary. The South Slough visitor center provides a distant view of the estuary, a "hands-on" table for kids, books for adults, interpretive displays. It even houses scientists.

At Cape Perpetua, Oregon, a forest-service visitor center that interprets the ocean shoreline also exists high on a hill away from the beach. Twenty years ago I learned the names of tidepool creatures there, and I also absorbed the message that authorities valued the shore so highly that they would not place a structure right at its edge.

If interpretive signs or trails are created for Ahgaming, minimal visual impact could be considered. An interpretive trail that contains nothing more than unobtrusive, brown posts with numbers and a corresponding pamphlet or booklet may best preserve the wild flavor of Ahgaming. Interpretive signs or kiosks could be located only at one place, perhaps just outside an entrance, or they too could be displayed only at an off-site location.

As Winona considers placing signs in the most remote area it owns, I suggest the city contemplate the amount of signs that already exist in the contemporary world. Signs are a constant part of our visual world, and electronic media allow us to experience signs with ever-increasing speed and abundance.

A place like Ahgaming provides a different experience. The fewer signs and man-made structures people encounter in a wild place, the more visitors find themselves confronted exclusively with nature. The fewer the indications of human development, the more people can confront questions inspired by unfettered nature. Who am I inside this woods, beside this river? What is my role? Where does our influence begin, and where does it end? Who are we in the world?

Martin Heidegger, Albert Camus, Jean-Pierre Vernant and other philosophers have argued that since the classical age of the Greeks, western civilization has operated with a mode of truth synonymous with correctness. We have become brilliant technicians and engineers. We have become experts at actively analyzing reality and representing it with our language structures and transforming it to correspond to our designs.

Heidegger believed that while the Greeks developed

this new, technological truth, a second mode of truth was eschewed, a passive and receptive mode of truth, *alethia*. "Ease is the way of perfection, letting fall," said Annie Dillard. "We put thirty spokes together and call it a wheel; but it is upon the space where there is nothing that the usefulness depends," said Lao Tzu.

I cannot say how many Winonans find special meaning from the "undeveloped" nature at Ahgaming, because I believe such meaning occurs quietly, moves modestly between individuals, is impossible to quantify. Nor can I claim the amount of spiritual resource Winonans derive from wild places, but I urge the city to realize the more Ahgaming is associated with man-made structures, the less it becomes one of those unique places that inspire people who relate to wild nature.

Rather than developing physical, man-made structures at Ahgaming, I encourage the city to develop human-to-human connections that enhance people's understanding and experience of the area. I encourage the city to develop infrastructures inside schools, clubs, community centers and other institutions that will open up a natural experience to people and will facilitate a conservation ethic and reverence for Winona's natural history from the *inside out*. Local mentors can work with local students. Art students can paint the wagon bridge, the Wisconsin bluffs, the mist off a slough, a lily leaf, fall colors. Local science clubs and science classes can count birds, trees, insects. Models can be made on computers. Senior citizens with an interest in nature can be involved. Scout troops or other organizations can help plant saplings suitable for forest regeneration. Writing instructors can encourage poetry about the area. History instructors can help students discover the past about the area.

Other experts and I can write an interpretive trail, but on the other hand school students can interview us and write it themselves. During that and similar projects new people can form new, meaningful connections to the wild area. They can see themselves as part of it. They can see themselves carry out activities in a wild place in an ecologically sensitive way. They can learn that such an experience isn't an impossible goal that has been forfeited by default long ago.

I have suggested other activities earlier in this report, and I stress that community leaders implement them with a consistent message. We teach reverence by practicing it ourselves. We embrace Ahgaming Park as it is. We recognize that the wild nature of the park can be

an edifying force in our lives simply by itself. We recognize that nature can be adequate by itself, and that we too can be adequate by simply appreciating and understanding nature, rather than adding to it.

The primary habitat of Ahgaming is floodplain forest, and Knutson and Klaas say that floodplain forest cannot regenerate itself probably because seeds and saplings remain flooded during prolonged periods extended unnaturally by locks and dams. This may be even more instructive than a disturbed osprey, since it indicates there are probably enough man-made structures on the river already.

Flaspohler notes that in Wisconsin 92% of quality floodplain forest has disappeared since pre-settlement times. That might cause a person to believe that, indeed, there were already enough man-made structures on the river decades ago.

Funds from a foundation for Ahgaming Park might give Winona a chance to create something different. I truly hope the city chooses to try.

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APPENDIX

THE START OF A VISION FOR AHGAMING PARK

When I think about the city of Winona developing Ahgaming Park, I think first of another river city, the historic home of Mark Twain, Hannibal, Missouri. It is from this location, called St. Petersburg in Twain's novels, that a young, white boy named Huckleberry Flinn flees an abusive, drunken father and sets out on a raft on the Mississippi River.

On the island across the city Huckleberry encounters Nigger Jim; then Mark Twain commences to describe a loving relationship between the young, white boy and older, black man, and by the end of the novel, the affection leads to the freedom of Nigger Jim from human bondage.

Many literary critics consider Huckleberry Finn the high watermark of Twain's genius, for when the novel appeared in 1884, it offered a union of black and white that a country still struggling with questions of the Civil War could not resist. But if you visit Hannibal today, you will find everywhere attractions recreating The Adventures of Tom Sawyer--the white picket fence, the lost treasure chest, a picnic and festival for Becky Thatcher. But you will find almost nowhere a celebration of the white boy and black man floating together on a raft down the river.

This shows, I believe, how a city can fail to recognize the most valuable assets of its particular geography and history and so fail to create for itself and its surroundings a meaningful gift to enhance its future quality of life. In this respect I ask the city of Winona proceed slowly and cautiously as it considers making any changes at Ahgaming Park.

Since Ahgaming Park is primarily a midwestern floodplain forest, and since scientists estimate that as much as 90 percent of midwestern floodplain forest has been destroyed since the 1700's, the first, essential step for a plan for Ahgaming Park is a legal designation that protects the wildlife and endangered habitat there.

A designation that protects wildlife interests from human disturbance will allow Winona to become a leading city in environmental concerns related to a specific habitat on the Upper Mississippi River. It will offer Winona the opportunity to say, in effect, "We value our unique landscape enough to take part in saving it for ourselves and future generations." Such a designation will allow city officials and the community to develop the wisdom of conservation as an integral part of the identity of Winona, to let the community take pride in that

identity.

After Ahgaming is sufficiently protected, Winona can look to the future, to the information economy. Because the floodplain forest is an endangered habitat, it will be studied intensively in the future. The Winona/LaCrosse area has scientific institutions in universities and wildlife agencies that can enhance themselves by studying an 1800-acre nature preserve, and these efforts can overflow into public schools, and perhaps with a little encouragement into the efforts of local artists and entrepreneurs.

A nature preserve can act as an empty hub in the center of a wheel, and information projects can function as spokes that enter the hub, leave the hub untouched but enhance it with understanding. Efforts at Ahgaming can become part of the ever-growing information community on the Upper Mississippi. The information community, I think you can trust, will produce information products, and some of those products will try to find their way into the local economy.

Birds provide an example of the importance and quality of information that can be gathered at Ahgaming Park. Of 70 breeding bird species found in Ahgaming Park, a full 15 have special designations related to conservation concerns. Two are endangered species. Three are U.S. Fish & Wildlife species of management concern, and 12 more are species of management concern for midwestern floodplain forests.

Point Pele in Michigan attracts crowds of birdwatchers who wish to see 20 wood warblers in one day there. At Ahgaming 23 can be seen, perhaps 25. But before Winona considers attracting a specific kind of visitor to Ahgaming, let's consider more general connections.

North Americans generally believe that "our" birds fly south for the winter and return for the summer. But tropical migrants evolved in Latin America. The avian life that arrives at Ahgaming every spring is bonafide Latin American life, and the connection can be explored with information technologies here in Winona and Brazil, Chile, Costa Rica etc.

Ahgaming Park can also help to elucidate local realities. Ahgaming Park is the only place in its vicinity with an Ojibway name. The etymology of the word is probably mythological. The naming of the place was probably historical. Thus literature and history departments, organizations like folk lore societies and Native American clubs can also be connected to the park.

Ahgaming can provide Winona a connection to the

Ojibway people headquartered in Black River Falls, Wisconsin. Ahgaming can help revitalize a Native American history and awareness of a geographic heritage that is essentially absent from Winona. Maybe it can even create friendships between Ojibways and Winonans.

In Ojibway "Ahgaming" means "behind the island" or "under the cover of the island." The word is an adverb and can describe just how Winona can look at its 1800 acres across the river. Winona can look beneath the silver maples and cottonwoods there and find connections from the past and connections for the future that enrich its own definition of its community.

Winona can see an essential heritage there, how once Dakotas and Ojibways realized life on opposite sides of the river. It can see its present and future there, how our contemporary civilization can exist peacefully and generously with other living creatures.

Two breeding species found at Ahgaming are listed as endangered species by the Wisconsin DNR: the bald eagle and osprey.

Three are listed as species of management concern for Winona's location, Region 3, by the United States Fish and Wildlife Service: black tern, cerulean warbler, red-shouldered hawk.

Four are species identified as high-management concern for midwestern floodplain forests: cerulean warbler, great-crested flycatcher, prothonotary warbler, yellow-billed cuckoo (Knudson, Hoover, Klaas, 1996). Two of these species, the great-crested flycatcher and prothonotary warbler, were found in high, relative abundances at Ahgaming (Table #2, p. 16).

Seven more are species identified as species of medium management concern for midwestern floodplain forests (Knudson, et. al. 1996): American redstart, chimney swift, Baltimore oriole, indigo bunting, gray catbird, warbling vireo, common yellowthroat. Two of these species, the American redstart and Baltimore oriole, were found in high, relative abundances at Ahgaming (Table #2, p. 16).