

YELLOWSTONE BIRD REPORT 2004



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One of the rare birds seen in Yellowstone in 2004, this Chestnut-sided Warbler was found in the northwest corner of the park, in Montana.



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All photographs in this report are by Terry McEneaney unless otherwise indicated.

CONTENTS

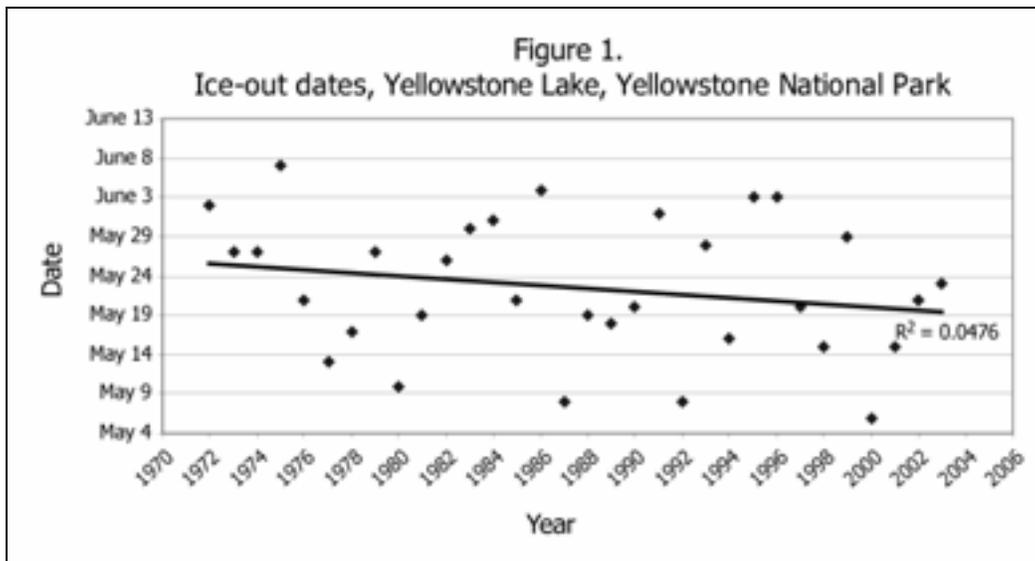
INTRODUCTION	2
2004 Weather Patterns and Summary	2
THREATENED AND ENDANGERED SPECIES	4
Bald Eagle	4
Whooping Crane.....	6
SPECIES OF SPECIAL CONCERN	8
Peregrine Falcon.....	8
Trumpeter Swan	10
Molly Islands Colonial Nesting Birds	14
Osprey	16
Harlequin Duck	18
Common Loon.....	18
OTHER STUDIES AND POPULATION MONITORING.....	19
North American Bird Migration Count	19
Mid-Winter Eagle Survey	22
Breeding Bird Surveys	23
Glacier Boulder Route Songbird Survey	23
Christmas Bird Count.....	24
MISCELLANEOUS PROJECTS AND PROGRAMS	27
New Bird Discoveries For Yellowstone National Park.....	27
Environmental Assessments, Status Reviews, Technical Documents.....	29
Greater Yellowstone Bald Eagle Working Group.....	29
Greater Yellowstone Peregrine Falcon Working Group	29
Greater Yellowstone Trumpeter Swan Working Group.....	29
Montana Bird Records Committee	29
Harlequin Duck Working Group	30
Neotropical Migrant Working Groups	30
Wyoming Important Bird Area Technical Review Committee.....	30
Museum Scientific Bird Collection	30
Swallow, Woodpecker, and Raven Management and Mitigation	30
Speaking Engagements and Public Contacts.....	30
Injured and Road-Killed Birdlife.....	30
Trumpeter Swan Data Analysis and Monograph	31
Yellowstone Winter Use Wildlife Study	31
Six Mile Madison River Bald Eagle Nest Closure	31
Seven Mile Bridge Trumpeter Swan Nesting Area	31
Aftermath of the 2003 Frank Island Wildfire.....	32
Trumpeter Swan Genetics Study	33
New AOU Changes in Bird Names for 2004	33
Lake Trout Gill Netting and Bird Mortality	34
Heart Lake Bird Mortality Mystery Solved.....	34
Sandhill Cranes and Trumpeter Swan on Floating Island Lake	35
Population Estimates for Red-tailed and Swainson’s Hawks in YNP.....	35
Population Estimates for Black-billed Magpies and Common Ravens in YNP.....	36
ACKNOWLEDGEMENTS.....	37

INTRODUCTION

The Yellowstone Bird Report summarizes all bird information in Yellowstone National Park. The report originally started as a quarterly publication, then in 1996 became an annual document summarizing all results and activities that occurred within the calendar year. The 2004 Yellowstone Bird Report is an annual report. Information found in this publication is used in the Superintendent's Annual Report and provides valuable information for the Yellowstone historical record and interested public.

2004 Weather Patterns and Summary

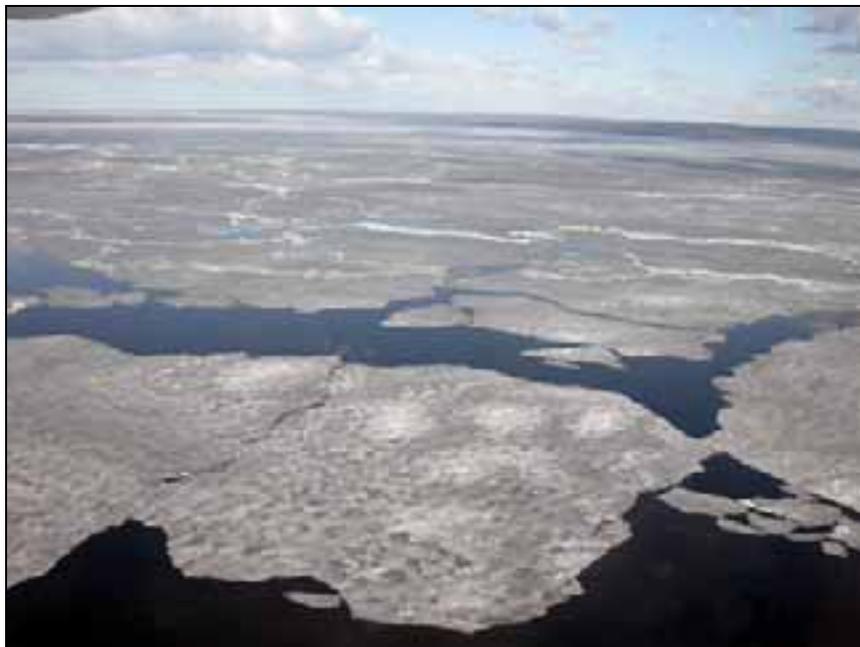
January 2004 began as extremely mild, with warm temperatures and average snowfall. More typical winter conditions began in February, with snowstorms well into April. Ice-out dates on Yellowstone Lake continued to show a trend toward earlier thaw (Figure 1). Mountain snowpack melted relatively early, as spring temperatures were above average and precipitation below average. Spring was extremely dry, but the months of May, June, and July were unusually wet, allowing only 26 wildfire starts for the entire 2004 season. Despite the precipitation, the drought over the last six years continued to further dry out ponds and small lakes due to the lack of underground recharge. August had average precipitation, whereas September through mid-October had above average precipitation. November was dry and warm. December remained dry, mild, and colder near the end of the month. As 2004 came to a close, winter appeared to be behind schedule, resulting in below average precipitation and slightly above average temperatures. A New Year's Eve snowstorm finally broke the spell.



Data courtesy Phil Farnes and Lake rangers.



Spring ice breakup on Yellowstone Lake (Stevenson Island, above).



THREATENED AND ENDANGERED SPECIES

Bald Eagle

In 1995, the U.S. Fish and Wildlife Service downlisted the Bald Eagle from “endangered” to “threatened” due to significant population gains made over the last three decades. Certain specific populations, however, are not completely recovered due to heavy metal contamination problems in the Great Lakes region, and habitat encroachment and development problems associated with riparian zones in the desert southwest.

In Yellowstone, a total of 18 Bald Eaglets fledged from 32 active nests during 2004 (Figure 2). This year’s low fledgling rate was primarily due to weather, namely wet snows and strong winds that caused nest destruction or failure. While the Yellowstone Bald Eagle subpopulation continues to incrementally increase, territorial shifts and new nests are appearing in unexpected places. For the third year in a row, a pair of Bald Eagles took up residence in a tree nest 55 meters off the Madison-to-West Entrance road. This created quite an attraction for visitors, and kept wildlife managers and rangers on their toes with crowd control throughout the spring and summer. On May 14, 2004, a severe windstorm with soaking rain dislodged the top-heavy nest, causing it to fall downward and forward several feet. It finally landed on its side on a tree branch, dumping the contents of the nest. The two eaglets in the nest died on impact. However, the paired adults did not abandon the site, and continued to place sticks on the fallen nest throughout the remainder of the year. Nest substrate instability, as a result of the 1988 Yellowstone wildfires, coupled with wind, continues to raise havoc with nesting pairs. However, over the next couple of decades large numbers of trees are expected to topple to the ground, which will undoubtedly result in further nest failure, loss of nest sites, or sudden changes in location of a nesting territory. Bald Eagles have occasionally been documented taking over previously occupied Osprey nests, and the incidence of takeover appears to be gradually increasing due to competition for nest sites.



Strong winds and heavy rains caused the Six Mile Bald Eagle nest to fall several feet to a lower branch, dumping the contents of the nest, including two eaglets, to the ground.

The eaglets died on impact.



Interesting find below the Six Mile Bald Eagle nest. The white object is the spent shell membrane from one of the hatched eaglets. The hair tuft below the membrane is from a Snowshoe Hare. The hide with hair to the right partially covered with ice is from a muskrat. Bald Eagles in Yellowstone feed on a variety of food items besides fish and waterfowl.



Whooping Crane

The Whooping Crane is currently classified as an endangered species. The worldwide population consists of both wild and captive populations. This endemic North American species continues to rank as the rarest and most endangered crane in the world. Population figures as of summer 2004 placed the wild population at 339 cranes and the captive population at 133 cranes, for a total world population numbering 472 Whooping Cranes (Figure 3). In the late 1990s, the Greater Yellowstone Area was home to four Whooping Cranes: two that remained from a cross-fostering experiment, and two Whooping Cranes from an ultralight project. Since 2000, however, Whooping Cranes have not been observed in the Greater Yellowstone Area. For a detailed summary, consult the 2000 and 2001 Yellowstone Bird Reports.



Table 1. 2004 Wild and Captive Whooping Crane Populations.

Wild Populations	Adults	Young	Total	Adult Pairs
Aransas/Wood Buffalo NP	183	33	216	67
Rocky Mountains	0	0	0	0
Florida (non-migratory)	73	1	74	13
Wisconsin/Florida (migratory)	34	115	49	0
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Subtotal in the wild	290	49	339	80
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Captive Populations	Adults	Young	Total	Breeding Pairs
Patuxent WRC, MD	51	4	55	13
International Crane Fdn., WI	32	7	39	10
Devonian WCC/Calgary, ALTA	18	2	20	6
Calgary Zoo, ALTA	0	0	0	0
San Antonio Zool. Gardens, TX	5	0	5	1
Lowery Park Zoo, Tampa, FL	2	0	2	0
Homosassa Springs WSP, FL	1	0	1	0
New Orleans Zoo, LA	2	0	2	0
Species Survival Ctr.	8	1	9	1
<hr/>				
Subtotal captive	119	14	133	31
<hr/>				
Total (wild and captive)	409	63	472	111

Data courtesy Tom Stehn, USFWS.

Whooping Cranes breed and nest in Canada's Wood Buffalo National Park and winter along the Texas coast. In 2004, a record number of wild, endangered Whooping Cranes migrated to the wintering grounds in and near Aransas National Wildlife Refuge and the surrounding area along the mid-coast region in Texas. A census flight on November 24, 2004, tallied 213 whooping cranes in this area—181 adults and 32 young who completed their first migration. "Stragglers" continued to arrive into December, with peak winter counts not usually made until mid-month. According to Tom Stehn, Whooping Crane Coordinator for the U.S. Fish and Wildlife Service, this represents the highest number of endangered Whooping Cranes wintering in Texas in the last 100 years. The next-highest previous record was 194 whooping cranes in fall 2003.

The increase in numbers was due to very good nest production in Canada during summer 2004, when the Canadian Wildlife Service reported a total of 54 nesting pairs that fledged 40 chicks (20 sets of twins) on their nesting grounds in Wood Buffalo National Park. Family groups typically migrate together during their first flight to the wintering grounds. The Wood Buffalo Whooping Cranes represent a natural relict population.

Two experimental programs are in progress, one in Florida and the other in the Midwest. The resident Whooping Cranes in Florida survived three hurricanes in 2004, and the habitat benefited from the heavy rains. A record 13 Whooping Crane pairs nested in Florida, but managed to fledge only one chick. A total of 35 Whooping Cranes migrated from Florida to central Wisconsin in the spring, of which nine eastern migratory Whooping Cranes got confused. Six were blocked by a storm centered around Lake Michigan, which left them stranded in Michigan for the summer. The three remaining cranes made it around the south end of the lake, and finally ended up in Wisconsin.

SPECIES OF SPECIAL CONCERN

Peregrine Falcon

On August 26, 1999, the Peregrine Falcon was “delisted”—removed from the federal list of threatened and endangered species; it is now managed as a Species of Concern. Under provisions afforded by the Endangered Species Act, this species still needs to be monitored closely to ensure its recovery.

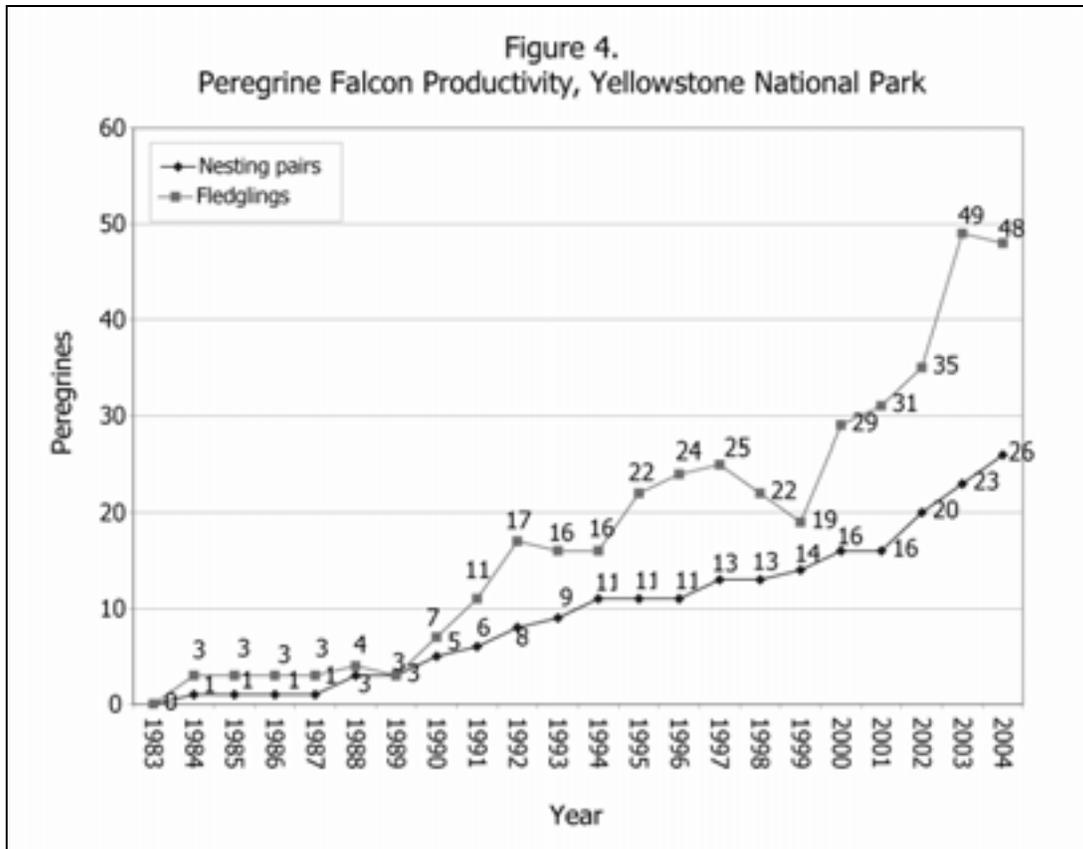


Early morning light and recently fledged peregrines.

Yellowstone continues to be a stronghold for peregrines in the Northern Rockies. The year 2004 marked the fifth year since delisting, and Yellowstone data support the contention that peregrines are on the road to full recovery. Three new eyries were found in 2004, bringing the total number of peregrine eyries to 26, compared to 23 eyries in 2003. As a result of finding new peregrine eyries, a total of 48 young were observed to fledge in 2004, the second highest number of fledged peregrine ever recorded in Yellowstone National Park (Figure 4). Monitoring peregrine eyries is time-consuming. In the future, a sampling scheme will be developed in which perhaps only one-third of all known eyries in the park will be checked each year, thus completing a full parkwide production survey every three years.



The staff ornithologist censuses peregrines in the Yellowstone backcountry.



Trumpeter Swan

The Yellowstone National Park resident Trumpeter Swan subpopulation continues to show signs of a species at risk of local imperilment. Traditionally, the Centennial Valley of Montana has been a hotspot for cygnet production in the Greater Yellowstone Area. Swan recruitment from outside Yellowstone National Park is critical to maintaining the resident swan population. Historically, swans that died in the park were eventually replaced by swans from outside the park (namely the Centennial Valley). However, events over the last decade have led to a reduction of breeding swans, particularly outside the park. This, coupled with low numbers of fledged cygnets throughout the Greater Yellowstone (Figure 5), is cause for serious concern.

The number of subadult/adult swans in Yellowstone National Park has declined steadily since 1961, and currently stands at only 16 individuals (Figure 6). This is the fourth lowest number of adults ever recorded in the park since trend data has been collected, and represents numbers reminiscent of the early 1930s. Adult swan recruits from the Paradise Valley are helping to maintain the Yellowstone swan population for the time being; in 2004, adult swan recruitment was observed for the first time in more than three years. The single adult swan at Seven Mile Bridge, on the Madison River, finally picked up a mate after 42 months of being alone on the territory. This strongly indicates the importance of site fidelity to long-lived birds.

In recent years, Trumpeter Swan nest attempts have ranged from 2 to 10 per year (Figure 7). In 2004, two cygnets fledged from one brood in Yellowstone National Park. This was somewhat expected, because years with drought-like conditions are usually favorable for swan production. Cygnet production has been generally dismal over the last 14 years, ranging from zero to five cygnets per year.

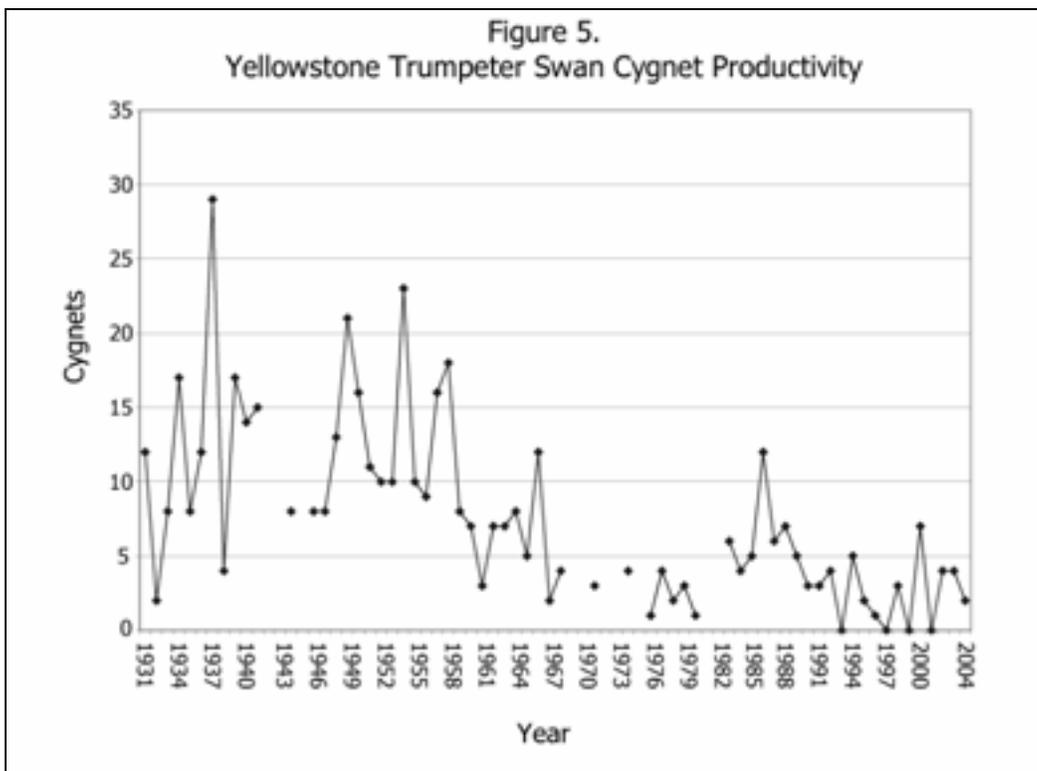
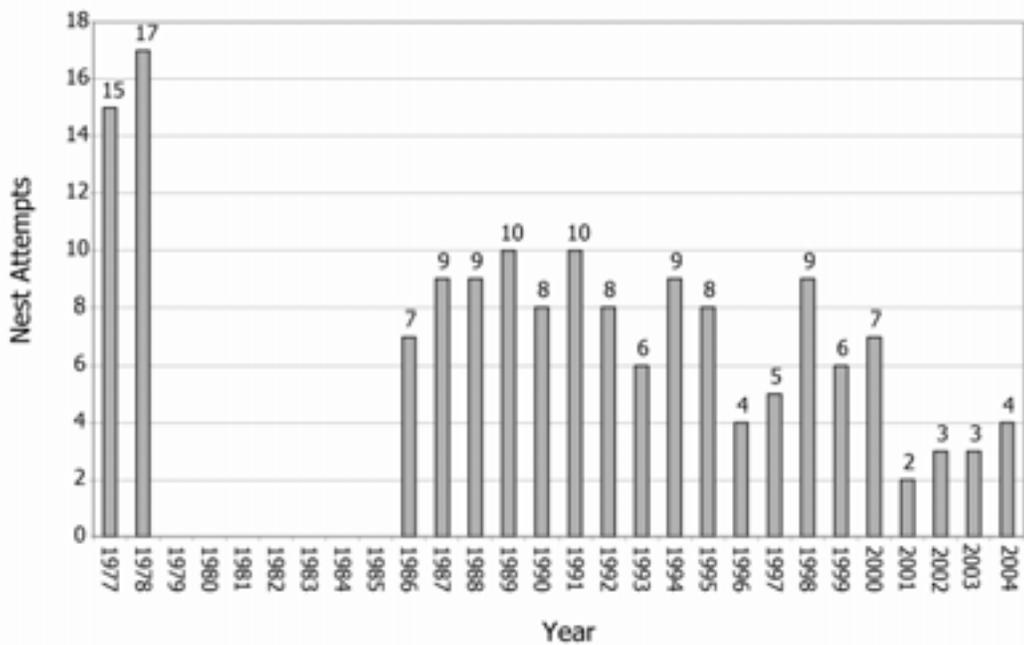


Figure 6.
Subadult/Adult Swan Dynamics, Yellowstone National Park



Figure 7.
Trumpeter Swan Nest Attempts, Yellowstone National Park



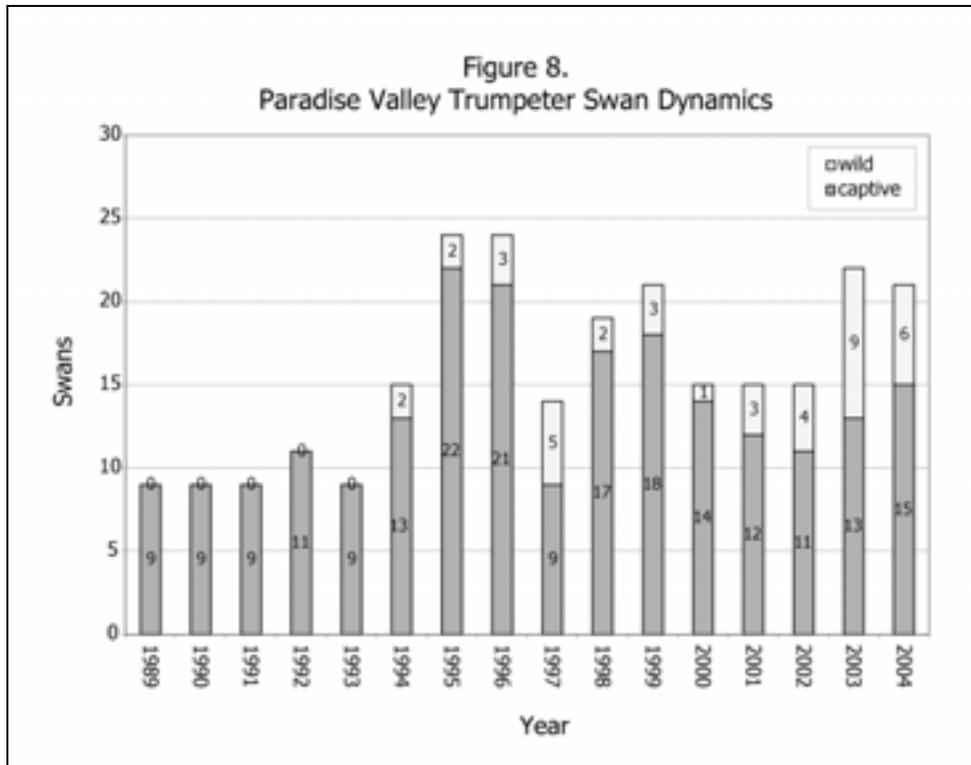


Trumpeter Swans defend a nest site, with a Common Loon in the background. This nest was only one of four swan nest attempts in YNP in 2004. The eggs in the nest were destroyed by a grizzly bear two weeks later. Predation and weather are two major causes of swan nest failure.

Paradise Valley Trumpeter Swan Flock. Yellowstone National Park originally began to participate in Trumpeter Swan conservation issues in Montana's Paradise Valley (north of the park) due to the potential threat posed by exotic Mute Swans. In the 1960s, a private landowner purchased a pair of Mute Swans for aesthetic purposes. By the late 1970s, the Mute Swan population had grown to a high of 120 individuals. Fearing potential competition with native Trumpeter Swans in Yellowstone National Park, the National Park Service became involved in a program to reverse this alien threat to native swans. The goal was to eliminate Mute Swans immediately and replace them with captive-raised Trumpeter Swans. Generous support from the Cinnabar Foundation and the Chevron Corporation, in addition to contributions from private citizens, allowed this program to proceed. The staff ornithologist, through the help of landowners and park rangers, began to eliminate the first Mute Swans in fall 1987. By 1989, the Mute Swan population was reduced to 13 individuals, and Trumpeter Swans were introduced into Paradise Valley. In 1991, Trumpeter Swans outnumbered Mute Swans nine to two in Paradise Valley. By the mid-1990s, Mute Swans were eliminated from Paradise Valley altogether. Therefore, the threat posed by an alien species was extinguished in a relatively short period of time.

Throughout the years, the Paradise Valley Trumpeter Swan program has experienced three major setbacks: 1) two captive swans and one wild swan were illegally shot or poached on the DePuy Ranch on December 2, 1995; 2) severe floods on the Yellowstone River during the spring and summer of 1997 and 1998 flushed many swans downriver, leading to a major decline in the swan flock; and 3) a series of adult mortalities.

In 1999, one captive swan pair managed to fledge five cygnets on one ranch, and a wild swan pair fledged a single cygnet. In 2001, one of the wild swans died from a wire collision leaving the nesting area vacant; however, a captive pair fledged one young.



In 2004, three nesting pairs fledged six young from three broods in Paradise Valley. Of the 10 young that hatched, six successfully made it to the fledgling stage. A fall survey of Paradise Valley swans tallied 21 individuals (Figure 8; details on production are shown in Table 2). Primary causes of subadult/adult swan population loss in Paradise Valley are collisions with wires, lead poisoning, and recruits' exploring the confines of Yellowstone National Park. Banded swans from the Paradise Valley have been seen in Yellowstone National Park on occasion.

Table 2. 2004 Trumpeter Swan Production Summary.

Parameters	Yellowstone National Park	Paradise Valley
Occupied sites	6	3
Nesting pairs	4	3
Successful nests	1	3
Cygnets hatched	4	10
Broods w/fledged young	1	3
Cygnets fledged	2	6
Adults	16	15
Total Swans	18	21

Molly Islands Colonial Nesting Birds

The Molly Islands Colonial Nesting Bird Census was conducted in mid-May, early June, early August, and mid-September 2004. The Molly Islands consist of two small islands appropriately named Rocky Island and Sandy Island, due to the nature of the substrate. The census techniques applied this year are consistent with those conducted over the last several years; however, both aerial and boat surveys were employed this year.

American White Pelicans arrived on the islands on schedule. On Rocky Island, a total of 43 pelicans initiated nests on the eastern or highest part of the island (Table 3). Nests were restricted to this single aggregation. Double-crested Cormorants constructed 53 nests in the same area as the pelicans. The islands were free of flooding this year and snow meltwater runoff was gradual, which is usually a promising sign for colonial nesting birds. Of the 180 California Gulls that attempted to nest, 154 were successful in hatching young. Of the four nest attempts by Caspian Terns, three were successful in hatching and rearing young. The following young fledged from Rocky Island: 45 American White Pelicans, 62 Double-crested Cormorants, 207 California Gulls, and 3 Caspian Terns. It appeared that a predator made it onto the island, but mortality was minimal.

Table 3. Molly Islands Colonial Nesting Bird Productivity, 2004.

Area	Species	Nests Initiated	Successful Nests	Young Fledged
Rocky Island	American White Pelican	43	30	45
	Double-crested Cormorant	53	34	62
	California Gull	180	154	207
	Caspian Tern	4	3	3
Sandy Island	American White Pelican	210	164	192
	Double-crested Cormorant	81	69	138
Molly Islands Totals				
	American White Pelican	253	194	237
	Double-crested Cormorant	134	103	254
	California Gull	4	3	3
	Caspian Tern	180	154	207

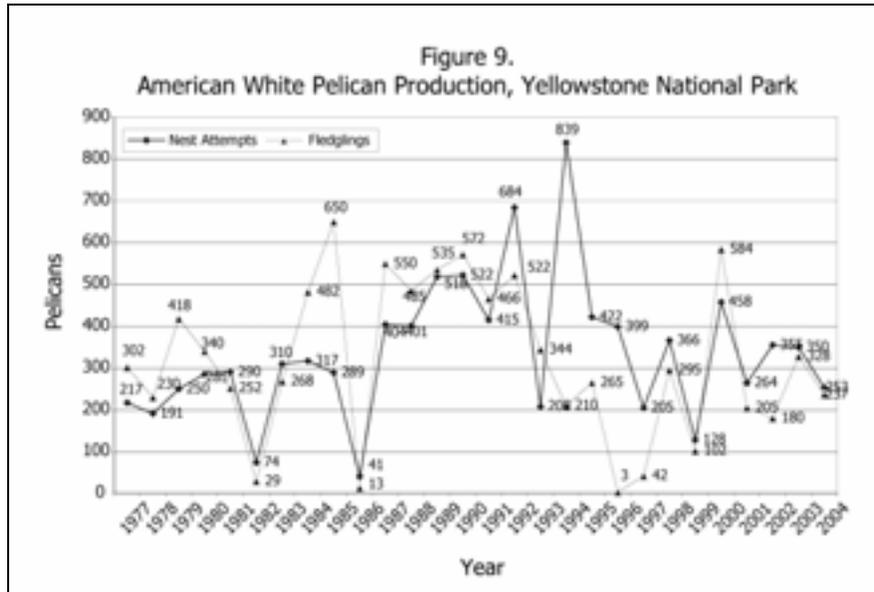


American White Pelican early nest initiation on Rocky Island (Molly Islands). Note the ice jam on the windward side of the island, and the importance to pelicans of nesting as high on the island as possible.



American White Pelican nesting aggregates on Sandy Island. The Molly Islands are closed to the public to protect these sensitive birds. One visit by a human can result in heavy predation of eggs by gulls or trampling of hundreds of young by young pelicans.

Predation was not a factor on Sandy Island, where a total of 210 American White Pelican nests were initiated, but only 164 nests were successful in rearing 192 young. Double-crested Cormorant nest attempts were higher this year, with 81 nests initiated and 69 nests successful in fledging 138 young. Pelicans nested again in four distinct aggregations on Sandy Island, consisting of two large and two small aggregations. No Caspian Terns or California Gulls nested on this island this year.

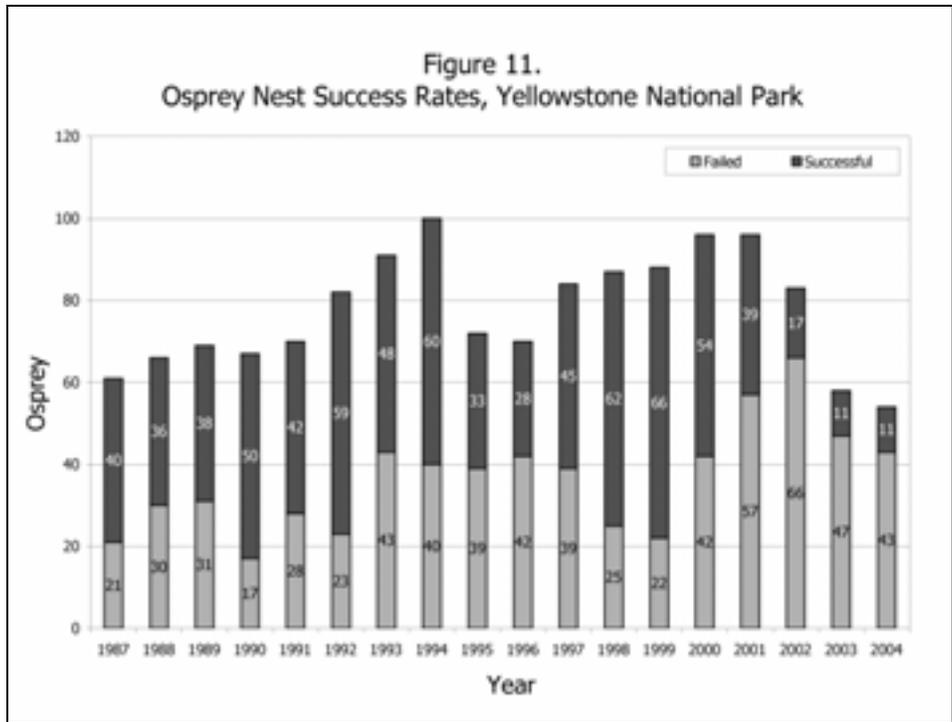
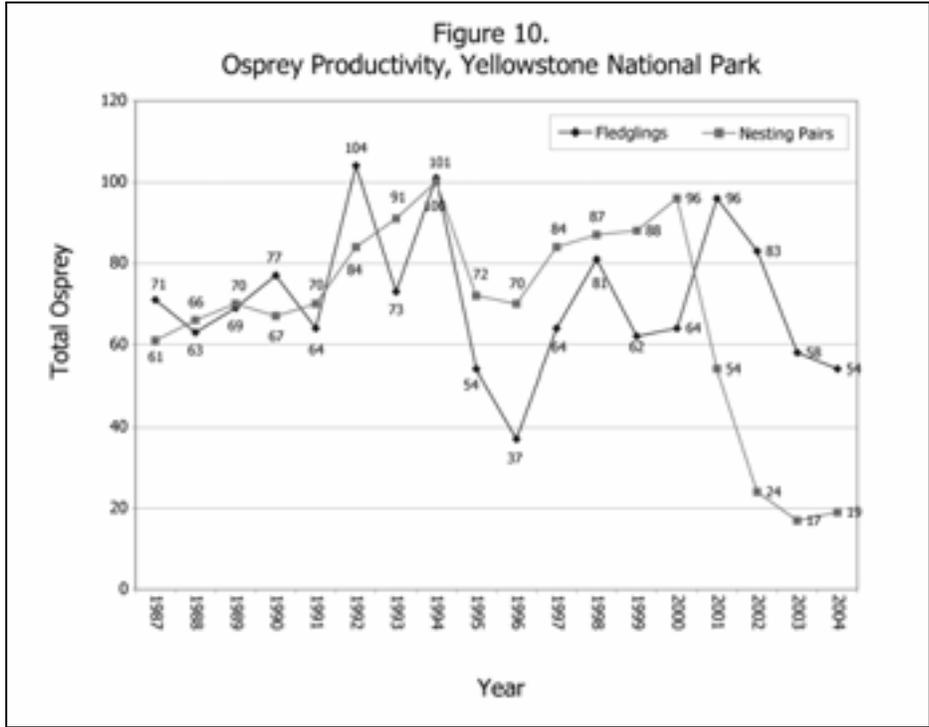


In sum, 2004 was a year of surprisingly good colonial nesting bird production. Lake flooding did not occur due to the drought, which presented favorable nesting conditions. Total production on the Molly Islands resulted in fledging 237 American White Pelicans (Figure 9), 254 Double-crested Cormorants, 207 California Gulls, and 3 Caspian Terns.

As the lake trout issue continues on Yellowstone Lake, the status of the Molly Islands bird colony will need to be carefully monitored. However, rather than make predictions as to the future of this nesting colony, time must be allowed to take its course. At the moment, lake trout do not appear to have influenced colonial nesting bird production. Climatic conditions continue to be the most important factor affecting the Molly Islands nesting colony, particularly in recent years.

Osprey

The Yellowstone National Park Osprey population continues to show signs of natural annual variation. In 2004, only 19 young fledged from 54 nests, compared to only 17 young fledging from 58 nests in 2003, and 24 young fledging from 83 nests in 2002 (Figure 10). This represents the second worst production ever experienced in the last 18 years of collecting detailed osprey population data. A series of strong winds throughout the summer caused many of the nests and/or nest trees to fall to the ground, resulting in high failure rates again this year (Figure 11). This pattern occurred more frequently in the last five years. Tree nest site instability and weather continue to play major roles in influencing Osprey productivity in the park. Most of Frank Island, a major Osprey production area on Yellowstone Lake, burned in 2003; only one pair nested on Frank Island in 2004. The incidence of Bald Eagles taking over Osprey nest sites was noted again this year. Monitoring the population dynamics of Ospreys and other piscivorous bird species is especially important as lake trout numbers are charted over time.

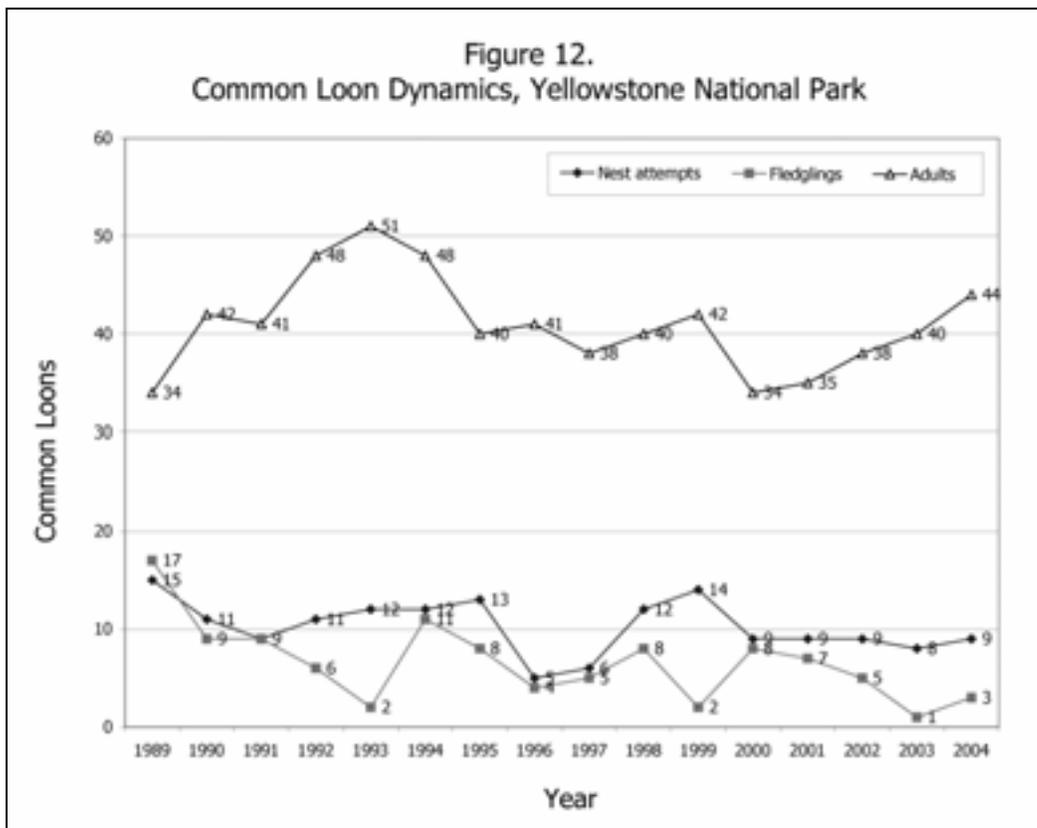


Harlequin Duck

The Harlequin Duck population in Yellowstone National Park continues to maintain itself and is only mildly variable from year to year, with generally 16–24 pairs residing in the park. Monitoring adults is the most effective method of tracking population vigor and trends. However, monitoring annual productivity is not cost-effective, as data collection is extremely time-consuming and difficult due to the remoteness of many of the areas in which harlequins are found. Productivity is extremely variable from year to year, and is highly influenced by weather, such as flooding.

Common Loon

The Common Loon population in Yellowstone National Park continues to fluctuate from year to year, largely as the result of variable weather conditions. There were nine nest attempts in 2004, yet only three loonlets managed to reach fledgling age, compared to eight nest attempts fledging one young in 2003, and nine nest attempts and five fledglings in 2002 (Figure 12). Many of the nesting loons had to deal with retreating water levels and shorelines as a result of the drought. This was the principal reason for the poor loon production in 2004; moderate loon production and the low adult numbers continue to be a reflection of drought conditions. A total of 44 adults were found in the park in 2004, compared to 40 adults in 2003, and 38 adults in 2002. These adult numbers have reliably ranged between 34 and 51 individuals over the last 16 years.



OTHER STUDIES AND POPULATION MONITORING

North American Bird Migration Count

Yellowstone National Park participated in the North American Bird Migration Count for the twelfth consecutive year in 2004. Originally designed to collect quantitative and qualitative spring bird migration information on a continental scale, the count has turned into a low-key social event. The survey is traditionally scheduled on the second Saturday in May each year. It originates on Yellowstone Lake, and ends 70 miles north of the park in the Shields Valley of Montana. It is an excellent means of gauging the pulse of migration in both the mountains and the intermountain valleys. This year, the count was conducted on May 8. Four observers recorded a total of 1,420 individual birds. A total of 90 species of birds were recorded during the count, including 66 species within the confines of Yellowstone National Park (Table 4). A 12-year summary is shown in Table 5. Drought appeared to be having immediate effects on bird numbers, particularly in regard to waterfowl.

Table 4. International Migratory Bird Count, Yellowstone National Park, May 8, 2004.

Species	YNP (WY)	YNP (MT)	Park Co., MT	Totals
Common Loon	6	0	0	6
Western Grebe	0	0	59	59
Clark's Grebe	0	0	1	1
American White Pelican	9	0	25	34
Great Blue Heron	3	0	2	5
Trumpeter Swan	0	0	2	2
Canada Goose	30	4	40	74
Green-winged Teal	13	0	12	25
Mallard	93	4	25	122
Northern Pintail	1	0	2	3
Cinnamon Teal	9	0	12	21
Northern Shoveler	36	0	12	48
Gadwall	58	0	20	78
American Wigeon	92	0	35	127
Lesser Scaup	51	0	25	76
Redhead	1	0	0	1
Ring-necked Duck	0	0	12	12
Common Goldeneye	10	0	0	10
Barrow's Goldeneye	22	0	0	22
Bufflehead	32	0	0	32
Harlequin Duck	12	0	0	12
Common Merganser	27	0	15	42
Ruddy Duck	0	0	11	11
Osprey	5	0	2	7
Bald Eagle	1	0	4	5
N. Harrier	1	0	0	1
Swainson's Hawk	1	0	0	1
Red-tailed Hawk	2	1	5	8
Ferruginous Hawk	0	0	2	2
Cooper's Hawk	0	0	1	1

Species	YNP (WY)	YNP (MT)	Park Co., MT	Totals
Golden Eagle	0	2	2	4
American Kestrel	1	1	2	4
Prairie Falcon	0	0	1	1
Turkey Vulture	0	0	1	1
American Coot	6	0	17	23
Sandhill Crane	3	0	4	7
Killdeer	2	1	6	9
Willet	0	0	10	10
Black-necked Stilt	0	0	1	1
Wilson's Snipe	1	0	0	1
Wilson's Phalarope	0	0	12	12
California Gull	19	0	0	19
Ring-billed Gull	0	0	12	12
Rock Pigeon	0	0	4	4
Mourning Dove	0	0	7	7
White-throated Swift	0	3	0	3
Calliope Hummingbird	0	0	1	1
Belted Kingfisher	0	2	1	3
Three-toed Woodpecker	2	0	0	2
Red-naped Sapsucker	3	0	0	3
Northern Flicker (red-shafted)	13	0	5	18
Tree Swallow	13	0	25	38
Barn Swallow	0	0	7	7
N. Rough-winged Swallow	0	0	5	5
Violet-green Swallow	0	0	3	3
Cliff Swallow	70	0	0	70
Bank Swallow	12	0	7	19
Clark's Nutcracker	2	0	3	5
Black-billed Magpie	2	0	7	9
American Crow	2	0	5	7
Common Raven	13	1	5	19
Black-capped Chickadee	0	0	1	1
Mountain Chickadee	8	1	0	9
White-breasted Nuthatch	1	0	0	1
House Wren	0	0	1	1
Rock Wren	1	0	0	1
Marsh Wren	1	0	0	1
American Dipper	0	1	0	1
Ruby-crowned Kinglet	18	0	0	18
Mountain Bluebird	7	1	4	12
American Robin	29	0	0	29
European Starling	0	1	7	8
Yellow-rumped Warbler (Aud.)	31	0	2	33
Vesper Sparrow	4	0	4	8
Savannah Sparrow	3	0	0	3
Brewer's Sparrow	0	0	1	1
Chipping Sparrow	2	0	0	2
White-crowned Sparrow	12	0	0	12
Dark-eyed Junco	13	0	0	13
Red-winged Blackbird	7	0	12	19
Western Meadowlark	7	0	7	14
Yellow-headed Blackbird	0	0	15	15

Species	YNP (WY)	YNP (MT)	Park Co., MT	Totals
Brewer's Blackbird	7	8	4	19
Common Grackle	1	0	0	1
Brown-headed Cowbird	1	0	1	2
Cassin's Finch	6	1	0	7
House Finch	0	1	0	1
Red Crossbill	0	0	6	6
Pine Siskin	1	0	1	2
House Sparrow	0	1	4	5
Totals	839	34	547	1,420

Species recorded: 90
 Total number of observers: 4
 Total number of group hours in the field: 44
 Species detected in Yellowstone National Park only: 65
 Recorder: Terry McEneaney
 Weather: Very little snow remaining. Drought-like conditions.



Signs of a Red-naped Sapsucker. These drill holes or wells are important food centers for attracting insects.

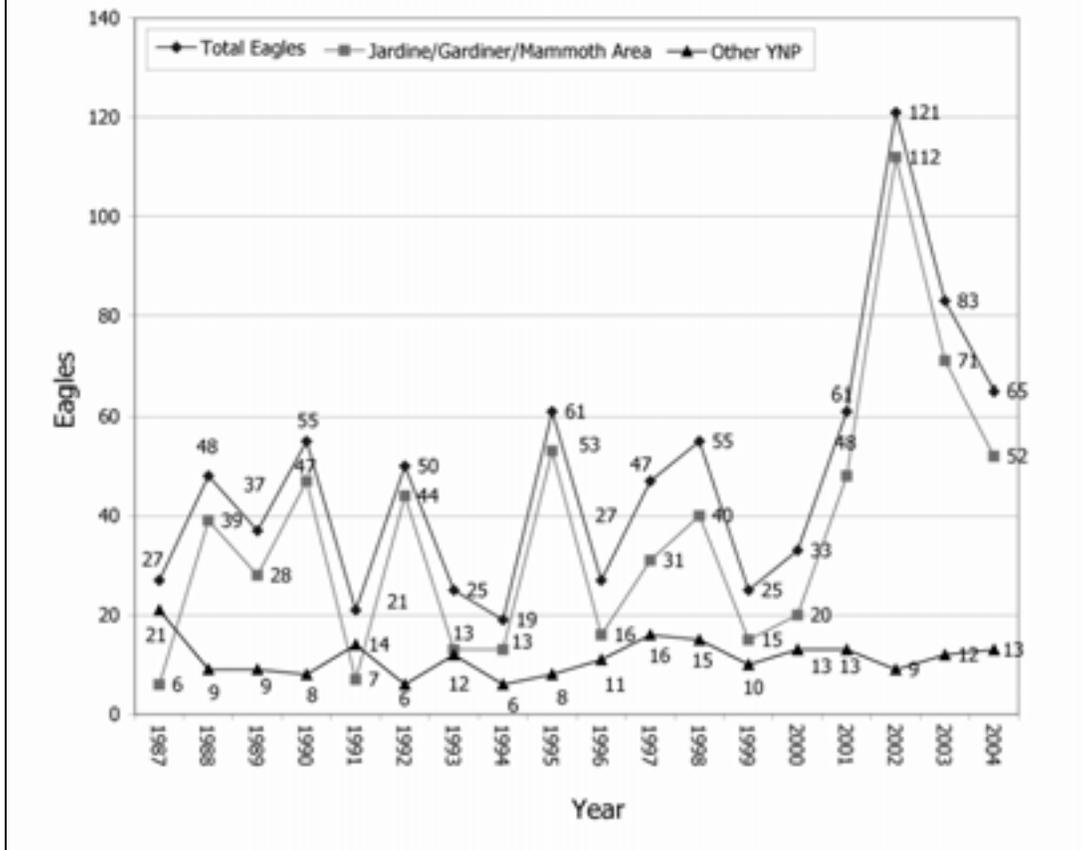
Table 5. North American Bird Migration Count Summary, Yellowstone National Park and Vicinity.

Year	1993	'94	'95	'96	'97	'98	'99	2000	'01	'02	'03	'04
No. Species Recorded	72	74	61	82	93	91	85	85	91	90	78	90
Revised No. Species (1996 Standards and Route)	86	74	75	82	93	91	85	85	91	90	78	90
Total Individual Birds												
YNP, WY	1,545	1,793	2,408	1,797	1,038	1,073	826	750	967	895	716	839
YNP, MT	289	145	242	113	94	64	163	912	74	128	205	34
Park Co., MT	139	89	248	313	949	413	1,974	936	656	609	2709	547
Grand Totals	1,973	2,027	2,898	2,223	2,081	1,550	2,963	2,598	1,697	1,632	3,630	1,420
No. observers	2	5	7	4	4	4	3	5	5	5	4	4
Total field hours	16	47.5	76.5	28	42	48	36	69	44	55	44	44
Total species YNP only	69	73	52	73	70	69	70	61	65	71	56	66

Mid-Winter Eagle Survey

The annual mid-winter Bald Eagle/Golden Eagle survey was conducted for the eighteenth consecutive year in Yellowstone National Park and on portions of the northern range outside the park. A total of 65 eagles were counted on January 9, 2004 (Figure 13); 58 Bald Eagles and 7 Golden Eagles. Fifty-two of the 65 total wintering eagles were found in the Jardine/Gardiner/Mammoth area. The northern range outside Yellowstone National Park continues to be the hotspot for wintering eagles. This attraction has to do with carrion availability from the regular- and late-season elk hunts; eagles also take advantage of carcasses exposed by wolf packs. Weather continues to play a major role in eagle distribution, as does prey and carrion availability. It will be interesting to monitor wintering eagle numbers in relation to elk numbers over time.

Figure 13.
Mid-Winter Eagle Survey



Breeding Bird Surveys

Three Breeding Bird Surveys were conducted in 2004. This songbird data was sent to the continental database clearinghouse located at the Patuxent Wildlife Research Center in Laurel, Maryland, and is included in the information available online at <<http://www.mp2-pwrc.usgs.gov/bbs>>. Data from these surveys are used to develop population trends for North American songbirds. Yellowstone National Park Breeding Bird Surveys date back as far as 1982.

Glacier Boulder Route Songbird Survey

The Glacier Boulder songbird survey, which documents birdlife found exclusively in lodgepole pine habitats in Yellowstone National Park, was conducted again in 2004. The transect begins at the Glacier Boulder trailhead near Inspiration Point, consists of 30 stations, and is conducted entirely on foot. Census protocol for this survey is similar to that of a Breeding Bird Survey. This survey first began in 1986, and only one year (2002) has been missed to date. Establishing additional baseline data for neotropical migrant landbird monitoring is highly important. Traffic noise during the summer is beginning to affect Breeding Bird Survey routes, and for this reason, census routes are being developed away from established roads.

Christmas Bird Count

On December 19, 2004, the Yellowstone Christmas Bird Count (YCBC) was conducted in the Gardiner, Montana, and Mammoth, Wyoming, areas. This marked the thirty-second year for this traditional winter bird survey. Details on Yellowstone Christmas Bird Count methods, results, and summaries can be found in the Winter 2001, 2002, and 2003 issues of *Yellowstone Science*.

The 2004 Yellowstone Christmas Bird Count tallied a total of 35 bird species and 1,004 individual birds. Weather conditions were extremely mild and did not represent a normal winter. Temperatures during the 2003 YCBC ranged from 20 to 42°F, with 0–3" of snow, depending on the elevation. River edges were not frozen.

No new species of wintering birds were detected during the 2004 YCBC. Notable finds for the YCBC included: Prairie Falcon, Northern Goshawk, Cooper's Hawk, Northern Pygmy-Owl, and Marsh Wren. For atypical birds, a male Northern Pintail/Mallard hybrid was detected in the vicinity of Mammoth. It was described as a drake, predominately a Mallard with a black head, buffy streaking trailing the eye, a small, short, black-pointed tail, silver-pointed scapulars, and gray bill and legs.

Several bird records were tied or broken during the 2004 YCBC. Tied abundance records include: Prairie Falcon (1), tied previous records set in 1988, 1997, 2000, and 2002; and Northern Pygmy-Owl (1), tied previous records established in eight other years. Four abundance records were broken. New abundance records include: Marsh Wren (5), previous record was 4 in 2003; Gadwall (6), previous record was 3 in 2003; Golden Eagle (13), previous record was 12 in 1992 and 1999; and White-crowned Sparrow (2), previous record was 1 in 1991, 1992, 1994, 1998, and 2003.

In conclusion, the 2004 YCBC was relatively slow due to the mild weather. Below average winter conditions contributed to slightly above average numbers of species and below average numbers of individual birds observed. A grand total of 97 species have been recorded on the YCBC (102 species with the YCBC and count week combined) during the 32 years the count has taken place (Tables 6 and 7). Experience continues to show that colder temperatures and above average snow depths are the optimum conditions for finding the greatest bird richness and abundance during the YCBC. Participants are reminded of these factors when deciding whether to attend YCBCs. Some people enjoy searching for rare birds, while for others just learning the basics of bird identification is a thrill in itself. Many look forward to the exercise and/or social aspects of this festive event. Whatever the calling, the Yellowstone Christmas Bird Count tradition, and the fun associated with this event, continues.

Table 6. Yellowstone Christmas Bird Count, December 19, 2004.

Species	YNP (WY)	YNP (MT)	Park Co., MT	Totals
Green-winged Teal	29	0	0	29
Mallard	35	27	18	80
Gadwall	6	0	0	6
Common Goldeneye	2	0	0	2
Barrow's Goldeneye	0	0	41	41
Bald Eagle	2	2	3	7
Golden Eagle	3	2	8	13
Cooper's Hawk	0	0	1	1
Northern Goshawk	1	0	0	1
Prairie Falcon	0	1	0	1
Rock Pigeon	19	25	107	151
Belted Kingfisher	0	1	1	2

Species	YNP (WY)	YNP (MT)	Park Co., MT	Totals
Hairy Woodpecker	0	0	2	2
Northern Flicker	1	0	1	2
Clark's Nutcracker	6	1	7	14
Black-billed Magpie	54	9	54	117
Common Raven	34	10	100	144
Pinyon Jay	0	0	22	22
Black-capped Chickadee	0	1	27	28
Mountain Chickadee	15	5	18	38
Red-breasted Nuthatch	1	0	4	5
Brown Creeper	0	0	1	1
Marsh Wren	5	0	0	5
Northern Pygmy-Owl	0	0	1	1
American Dipper	20	12	5	37
Townsend's Solitaire	19	2	16	37
American Robin	1	0	1	2
Bohemian Waxwing	0	0	20	20
N. Shrike	1	0	1	2
Song Sparrow	1	0	3	4
White-crowned Sparrow	0	0	2	2
Gray-crowned Rosy Finch	0	0	16	16
House Finch	0	0	19	19
Pine Siskin	0	40	0	40
House Sparrow	0	0	112	112
Totals	255	138	611	1,004

Total species: 35

Additional species count week : 2

Bald Eagle classification: 1 Class III, 6 Class V, 7 Total

Golden Eagle classification: 11 Adults, 2 Immature, 13 Total

Gray-crowned Rosy Finch classification: 12 Gray-crowned race, 4 Hepburn race, 16 Total

Count Week Species: Dark-eyed Junco (SI-colored race), Dec. 22, 2004, Gardiner, Mt.; Great Horned Owl, Dec. 22, 2004, Mammoth, Wyo.

Observers: Curt Bentson, Annie Bochus, Ed Bourquist, Tina Bauer, George Bumann, Mark Donahue, Mary Heller, Catherine Hiestand, Linda Hendy, Dejan Kovac, Dave Martyn, Don MacDougall, Terry McEneaney, Neal Miller, Carl Roth, Gelaine Spoto, Melissa Scott (17)

Feeder watchers: Danielle Chalfant, Emma Heller, Karen McEneaney (3)

Total observers: 20. Tied with previous records 1975 and 1979 for fourth highest number of observers at YCBC.

Records

Tied abundance records: Prairie Falcon (1), tied previous records in 1988, 1997, 2000, and 2002; Northern Pygmy-Owl (1), tied eight other years.

New abundance records: Gadwall (6), previous record 3 in 2003; Golden Eagle (13), previous record 12 in 1992 and 1999; Marsh Wren (5), previous record 4 in 2003; White-crowned Sparrow (2), previous record 1 in 1991, 1992, 1994, 1998, and 2003.

Atypical bird: A male Northern Pintail/Mallard hybrid. Observer: Terry McEneaney, with several witnesses. Location: Mammoth, Wyo.

General observations: Below average winter conditions contributed to slightly above average numbers of species (35; mean 33, n=32) and below average numbers of individual birds (1,004 individuals; mean 1,403, n=32) observed during this count. Temperatures 20–40° F. Snow depth 0–3", deepest at higher elevations. River edges were not frozen. Very mild. Sunny.

Location: MT/WY 45 02 N 110 42 W

Hours: 72 total.

Miles: 60 vehicle miles, 12 miles on foot.

History of count: 97 species tallied on count day. 102 species with the YCBC and the count week combined. This represents 32 years of data.

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Table 7. Most Abundant Species, Yellowstone Christmas Bird Counts, 1920–2004.

Species	No. of Individuals	No. Yrs. Detected	Av. No. Birds/Yr.
Bohemian Waxwing	12,014	29	414.3
Gray-crowned Rosy Finch	6,003	30	200.1
Common Raven	4,450	32	139.1
Mallard	2,673	32	83.5
Black-billed Magpie	2,695	32	84.2
Rock Pigeon	1,908	22	86.7
Mountain Chickadee	1,772	31	57.1
American Dipper	1,633	32	51
Townsend's Solitaire	1,572	32	49.1
Black Rosy Finch	720	24	30
Clark's Nutcracker	862	32	26.9
Black-capped Chickadee	438	31	14.1

MISCELLANEOUS PROJECTS AND PROGRAMS

New Bird Discoveries for Yellowstone National Park

Two new bird species were added to the Field Checklist of Birds of Yellowstone National Park in 2004. The American Ornithologists' Union split the Canada Goose into two species: Canada Goose (*Branta Canadensis*) and Cackling Goose (*Branta hutchinsii*) as of August 2004, meaning that the Cackling Goose found by the staff ornithologist in April 2003 can now be included as a new species for Yellowstone National Park. On June 19, 2004, a Prairie Warbler (*Dendroica discolor*) was found on Stephens Creek (Montana) by Erik Hendrickson, making this the first known record for the species in the park.

As of the end of 2004, 320 species of birds have been documented in the park since it was established in 1872. The Field Checklist of Birds of Yellowstone National Park was revised in March 2004 by the staff ornithologist and made available to the public in April 2004. This checklist is available on the park website at <<http://www.nps.gov/yell/nature/animals/birds/index.htm>>.

The lone Whooper Swan discovered in the park in 2003 extended its stay in Yellowstone, and was last seen on the Yellowstone River on March 1. Other interesting and/or unusual Yellowstone bird finds for the year included the following sightings:

- Ross' Goose on Fountain Flat in March;
- Cattle Egret at Elk Park, Gibbon Meadows, and Old Faithful in May (see next page);
- Mew Gulls (2) on Yellowstone Lake in May (see next page);
- White-faced Ibis (several) spread out at several sites in May and August;
- Indigo Bunting at Tower in May and in June;
- Bobolink at Swan Lake in May;
- Black-billed Cuckoo at Tower in June;
- Say's Phoebe at Cabin Creek in July;
- Gray Catbird at Norris in June;
- Chestnut-sided Warbler on Highway 191 (MT) in June (see frontispiece);
- Herring Gulls (several) found in July, August, October, and November;
- Townsend's Warbler on Yellowstone Lake in September;
- Lark Buntings at Sulphur Mountain in July;
- Sabine's Gulls (several) in September on Yellowstone Lake and one at Frog Rock;
- Northern Mockingbird at the North Entrance Station in September;
- Blue Jays (2) at Fishing Bridge from September through November;
- Wood Ducks (8) at Bridge Bay in October;
- Pacific Loon at Bridge Bay in October and November;
- American Bitterns at Upper Geyser Basin in April and Trout Lake in November;
- American Widgeon (partial-albino) at Trout Creek in April;
- Harlequin Duck (a lone drake) on the Yellowstone River near Fishing Bridge in late November; and
- Northern Pintail/Mallard hybrid in December in Mammoth.



A Cattle Egret seen at Old Faithful and Elk Park in 2004.



A rare visitor to Yellowstone: one of two Mew Gulls observed in the park in 2004.

Environmental Assessments, Status Reviews, Technical Documents

The most important Yellowstone National Park assessments in 2004 that utilized bird data included: Wildfire–Urban Interface (WUI), Madison Sewage Upgrade, Norris Sewage Upgrade, Tower Development Plan, and various road assessments. The U.S. Fish and Wildlife Service is in regular contact with the staff ornithologist regarding status reviews of species whose status remains unclear. More status reviews of this nature are expected in the future.

Greater Yellowstone Bald Eagle Working Group

Established in 1982, the Greater Yellowstone Bald Eagle Working Group monitors and communicates information regarding Bald Eagle productivity and other management information, either via e-mail or an annual meeting. A meeting has not been held in the last three years. The Bald Eagle is doing remarkably well, and is ecologically recovered in the Greater Yellowstone Area. The group is unified in its belief that the Bald Eagle can be delisted in this area. The U.S. Fish and Wildlife Service is expected to take such action in the near future.

Greater Yellowstone Peregrine Falcon Working Group

Peregrine Falcon working groups are primarily organized by state. The park participates in two Peregrine Falcon working groups (Montana and Wyoming), and has been an active participant ever since peregrines were found in the Greater Yellowstone Area. Wyoming has an informal working group; most of the coordination is done over the telephone. Montana has a more formalized working group. Yellowstone National Park works closely with both state groups and the Peregrine Fund. Teamwork of this sort is one of the main reasons the peregrine has made such a remarkable recovery, and was officially delisted on August 26, 1999. The staff ornithologist attended the PFWG meeting in January 2004.

Greater Yellowstone Trumpeter Swan Working Group

The Greater Yellowstone Trumpeter Swan Working Group was organized in 1997. The staff ornithologist was the first chairman of this working group. Yellowstone National Park and Wyoming Game and Fish have been taking the lead to ensure that Greater Yellowstone Area Trumpeter Swans are conserved. Annual population and production data for GYA Trumpeter Swans are collected by the group, and management activities are communicated between agencies at meetings. Yellowstone participated in the fall 2004 meeting held in West Yellowstone, Montana.

Montana Bird Records Committee

The Montana Bird Records Committee meets once or twice a year, depending on the volume of information, to review new bird records. This high profile committee keeps the park up-to-date on the latest advances in ornithology. The staff ornithologist was chairman of this committee for several years, until he resigned the post to devote more time to writing projects. He remains a member of the MBRC.

Harlequin Duck Working Group

Yellowstone National Park is a member of the Harlequin Duck Working Group. Although unable to attend a formal meeting in recent years due to financial reasons, the staff ornithologist is planning on attending future HDWG meetings.

Neotropical Migrant Working Groups

Yellowstone National Park typically participates in three neotropical migrant working groups. The two state working groups are the Montana Partners in Flight and the Wyoming Partners in Flight. The third group, an international working group, is called the Western Working Group Partners in Flight. Ornithologists from all over the West are in this group, including colleagues from Canada and Mexico. They are currently focused on prioritizing species and developing conservation plans. Meetings occur twice a year, usually in different areas of the West. The staff ornithologist did not attend meetings in 2004 due to budget constraints.

Wyoming Important Bird Area Technical Review Committee

In 2004, the staff ornithologist participated as a member of the Wyoming Important Bird Area Technical Review Committee (WIBATRC). The WIBATRC is responsible for reviewing, designating and implementing important land tracts in Wyoming for bird conservation. The WIBATRC is sponsored by Wyoming Audubon. All meetings were attended by conference call because of travel restrictions. Approximately a half dozen new IBAs were evaluated in 2004.

Museum Scientific Bird Collection

No specimens were added to the Albright Visitor Center museum collection in 2004 due to the museum's move to the new Yellowstone Heritage and Research Center.

Swallow, Woodpecker, and Raven Management and Mitigation

Swallows, Northern Flickers, and Ravens continue to pose obstacles for the people responsible for the care and management of buildings in the park. In addition, there are some health risks associated with some of these bird species. These birds are protected by law under the Migratory Bird Treaty Act and, as such, mitigation options are very limited. With proper installation, plastic netting can be used to discourage nesting in selected areas of high public use.

Speaking Engagements and Public Contacts

Public contacts increase each year. The park concessioners annually request bird lectures from professional biologists to train summer and winter guides. Speaking engagements were again popular in 2004. Bird management staff lectured at several venues in outlying communities bordering Yellowstone National Park. In addition, there were hundreds of letters of inquiry and bird information e-mail requests and questions.

Injured and Road-Killed Birdlife

As long as there are roads, there will be injured birdlife. A protocol for handling injured and road-killed birds has been in place for the last few years and appears to be working well. Procedures were followed very well in recent years, and there have been no problems associated

with this protocol. In the past, problems typically involved park personnel not following protocol and procedures, which resulted in improper lines of communication and in turning birds over to unqualified rehabilitators. The only professional bird rehabilitator with which the park is involved is Big Sky Wild Care of Bozeman, Montana. All road-killed birds are to be salvaged, if possible, for future placement in the Heritage and Research Center collection. In November 2003, a revised protocol for injured Yellowstone birds was updated and sent to ranger staff. Copies of this protocol can be obtained by contacting this office.

Trumpeter Swan Data Analysis and Monograph

For the last three years, the staff ornithologist has been actively entering and analyzing Trumpeter Swan data for an upcoming scientific monograph on the Yellowstone Trumpeter Swan. This peer-reviewed publication is scheduled to be completed within two years, and will pave a new course of action for Trumpeter Swan management in Yellowstone National Park.

Yellowstone Winter Use Wildlife Study

A multi-disciplinary team was established in the fall of 2002 to improve understanding of how winter use (snowmobiles, snowcoaches, skiers) impacts wildlife populations. The bird management program is assisting in the design, field training and collection, and analysis of winter use data in an effort to better understand these recreational impacts, particularly on Trumpeter Swans and Bald Eagles.

Six Mile Madison River Bald Eagle Nest Closure

A pair of Bald Eagles occupied a nest approximately 150 feet off the road at Six Mile (Eagle Bend) on the Madison River. The eagles created quite an attraction from mid-February through early July for a third year in a row. In an effort to protect the eagles from human disturbance, park staff (bird management, resource management, patrol rangers, and interpretation) coordinated a temporary closure in the immediate vicinity of the nest. A zone-style system was established wherein visitors could stop and observe or photograph the eagles from a distance, then travel by the nest without stopping. The no-stopping zone allowed the eagles to come and go freely with prey and nest material without being disturbed by people. Although some people violated the closure, compliance was exemplary for the most part. The eagles hatched two chicks, both of which died when a windstorm blew the heavy nest out of the tree. The adult eagles continued to add material to the nest, however, and the closure is expected to be in place as long as the eagles continue to nest there.

Seven Mile Bridge Trumpeter Swan Nesting Area

The area known as Seven Mile Bridge (seven miles east of West Yellowstone) along the Madison River has been a traditional nesting area for Trumpeter Swans for at least the last 21 years. A total of 23 cygnets have fledged from this site since 1983, making it one of the more productive swan nesting areas in Yellowstone National Park in recent years. In February 2001, the adult male, or cob, was killed by a coyote near Seven Mile Bridge, leaving the adult female without a mate. Finally, in August 2004, after 42 months without a mate, the adult female swan picked up with a “floater” male yearling and remained in the vicinity of the Seven Mile Bridge site. Traditionally, potential adult swan recruitment in Yellowstone came from Montana’s Centennial Valley. In the past two decades, swan numbers in that area have declined substantially, causing swan recruits or floaters to be nearly non-existent. The arrival of this male is a positive sign that some subadult recruitment is beginning to take place in the park. However,

it would take a large number of floaters to replace the swans already lost during the last two decades, and the painstakingly slow recruitment of subadult/adult swans from outside the park has played a major role in the rate at which swans are replaced or new mates are found. Park staff will continue to monitor the status of the swans of this area. If recovery does occur it will be extremely slow, since this is a long-lived bird with low reproductive potential.

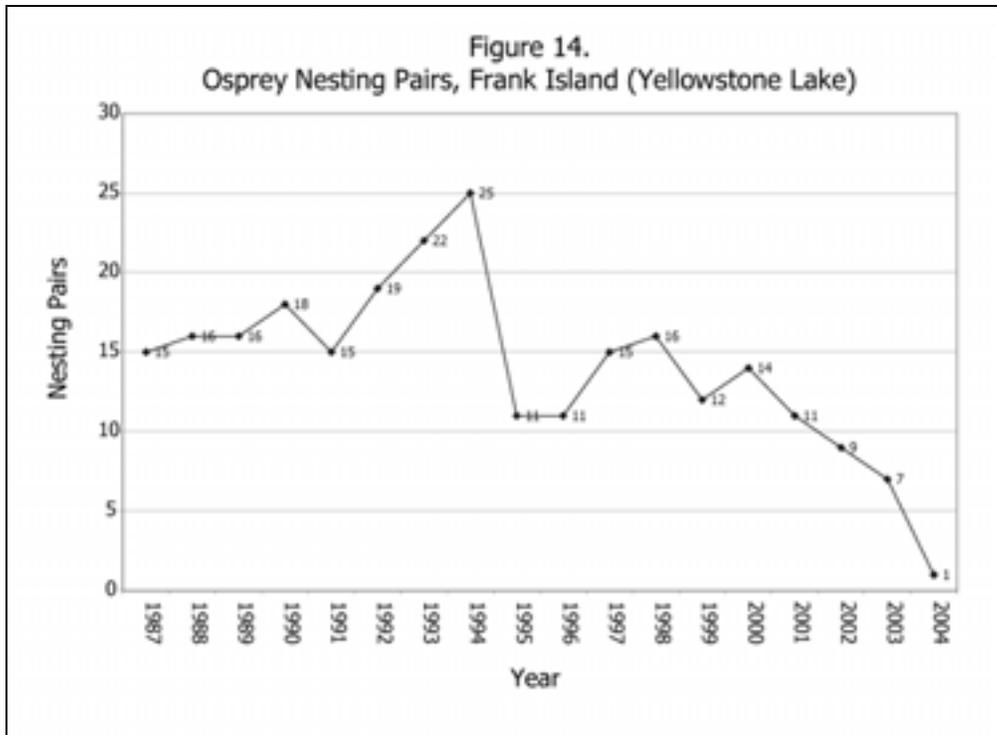
Aftermath of the 2003 Frank Island Wildfire

Frank Island has always been a major area for nesting ospreys in Yellowstone. The island is so important, in fact, that in 1987 it was designated a protected area and off-limits to the public, with only the small area to the southeast point or picnic area portion open for visitor use. All that changed on August 8, 2003, when lightning struck Frank Island and an inferno developed. Approximately 570 acres of the 600-acre island burned, engulfing nearly all of the old growth trees in a relatively short period of time.



The 2004 Promontory wildfire. Wildfires pose constant threats to many nesting birds.

Over an 18-year period, osprey nesting ranged from 1 to 25 nesting pairs on Frank Island (Figure 14). Nesting pairs peaked six years after the 1988 wildfires, and in recent years a slow, steady decline has occurred, primarily due to strong winds blowing down nest trees. An aerial survey revealed all the osprey nests but one succumbed to the wildfires, and only one osprey fledged from the single nest on Frank Island in 2003. Bald Eagles failed to produce young on Frank Island in 2003 and 2004, and the old nest was destroyed by this wildfire. Surprisingly, however, a newly completed Bald Eagle nest was discovered on the island within 30 days after the wildfire. In 2004, the one Bald Eagle nest and one Osprey nest failed to fledge young due to severe winds. This is typical of the boom-and-bust trend of nesting raptors associated with Yellowstone Lake and similar environments.



Trumpeter Swan Genetics Study

The staff ornithologist continued to participate in the North American Trumpeter Swan genetics study conducted by Sara Oyler-McCance of the University of Denver. Feathers, addled eggs, egg shells, and carcass muscle tissue were collected from nine separate sites in Yellowstone National Park in 2003; nothing was salvaged in 2004. The study hopes to determine, through DNA analysis, whether or not Trumpeter Swans in certain geographical areas are genetically distinct. This is an important study, for the findings will set the framework for future swan introductions in North America, and contribute to understanding of swan genetics.

New AOU Changes in Bird Names for 2004

The American Ornithologists' Union (AOU) formally announced recent changes in the seventh edition of the *AOU Checklist of North American Birds*. In the fourth supplement, released in the July 2004 issue of *The Auk*, the following changes applied to Yellowstone birds: Canada Goose (*Branta canadensis*) has now been split into two species: Canada Goose (*B. Canadensis*) and Cackling Goose (*B. hutchinsonii*), based on recent genetic studies of northern geese. From this point on, the Canada Goose (*B. canadensis*) only involves the larger-bodied forms of the Canada Goose, and includes the following subspecies: *canadensis* "Atlantic;" *interior* "Interior;" *maxima* "Giant;" *moffitti* "Great Basin;" *parvipes* "Lesser;" *fulva* "Vancouver;" and *occidentalis* "Dusky." The Cackling Goose (*B. hutchinsonii*) only involves the smaller-bodied forms, and includes the following subspecies: *hutchinsonii* "Richardson's;" *minima* "Cackling;" *leucopareia* "Aleutian;" *asiatica* "Kamchatka;" and *taverneri* "Taverner's." The Great Basin form *moffitti*, a large form of the Canada Goose, is the predominate resident goose of Yellowstone National Park. However, the staff ornithologist documented a "Richardson's" Cackling Goose the size of a Mallard in YNP in April 2003.

Lake Trout Gill Netting and Bird Mortality

Efforts to reduce lake trout in Yellowstone Lake are not without risks to birds. In 2004, two Barrow's Goldeneyes drowned in gillnets strategically placed for lake trout; eight birds drowned in gillnets in 2003. Most birds found in gillnets are believed to be migrants. However, the fisheries unit and the bird management program are working together to monitor the extent of netting mortality. More data remains to be collected over several years to determine the extent of lake trout gillnetting on birdlife, and to devise meaningful recommendations.

Heart Lake Bird Mortality Mystery Solved

On August 30, 2004, the staff ornithologist received information relayed from Heart Lake ranger Richard Jones concerning visitor reports of multiple songbird mortalities at Heart Lake. The ornithologist traveled to Heart Lake on September 1 to identify and quantify the species involved, and to examine the scene where the deaths occurred. Although West Nile Virus has not been documented in Yellowstone thus far, it could occur at any time, and was not ruled out along with other possible scenarios as the cause of death. With the help of two wildlife pathologists, field necropsies were performed on a few of the specimens. The nine songbirds collected were identified as follows: 1 Yellow-rumped Warbler, 1 Olive-sided Flycatcher, 2 Tree Swallows, and 5 Western Wood-Pewees. All of these species represent a feeding guild called insectivores. The intestines of these birds were examined and found to be devoid of food, which is a classic symptom of starvation. On August 25–26, a major cold spell and related snowstorm in the Heart Lake area apparently cut off the food supply for these birds, and they starved to death. Each carcass was found alone and in close proximity to the lakeshore, further suggesting their reliance on insects for survival. Even though more birds likely died during the storm, it was impossible to get a total count due to the presence of a pair Common Ravens combing the shoreline.



Heart Lake shoreline and the setting for the August 2004 songbird dieoff.

Sandhill Cranes and Trumpeter Swan on Floating Island Lake

Likely due to the drought and presence of predators, a pair of Sandhill Cranes nested on the actual small, floating island in Floating Island Lake. The island is not much bigger in size than the two adults, and they were very visible to the public. The female crane had two eggs, of which one hatched, with the single colt (cranelet) managing to swim to shore on its own and successfully fledge. Soon after that, a lone adult Trumpeter Swan in desperate need of open water and a place to molt took up residence on the same floating island. Because of the importance of Floating Island Lake to sensitive birdlife, this area has been closed to the public for many years, with wildlife viewing restricted to the road and pullout. The lack of water in ponds and lakes of the northern range due to the drought continues to affect bird production and survival.



Signs of a Sandhill Crane in a wetland.

Population Estimates for Red-tailed and Swainson's Hawks in YNP

The year 2004 marked the second of a four-year effort to estimate population sizes of Red-tailed Hawks and Swainson's Hawks in Yellowstone National Park. In addition, incidental information has been collected for nearly two decades on productivity and nest success of these raptors. Incidental information on these species is always welcome.

Population Estimates for Black-billed Magpies and Common Ravens in YNP

The year 2004 marked the first of a three-year effort to estimate population sizes of Black-billed Magpies and Common Ravens in Yellowstone National Park. In addition, incidental information has been collected for nearly two decades on these species. This field exercise establishes a baseline in which future populations can be measured.



The discoveries one can make doing bird surveys on Yellowstone Lake. In addition to having large antlers and powerful hooves for defense, elk will sometimes retreat to water for added security from predators. Sometimes, however, this can result in negative consequences. Close inspection of the carcass yielded evidence of both wolves and ravens.

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Bird nesting skyscraper. Old trees like this ancient Douglas-fir offer virtually a tenement house for cavity bird nesting.

NOTES



American White Pelicans in flight. NPS/Jim Peaco.