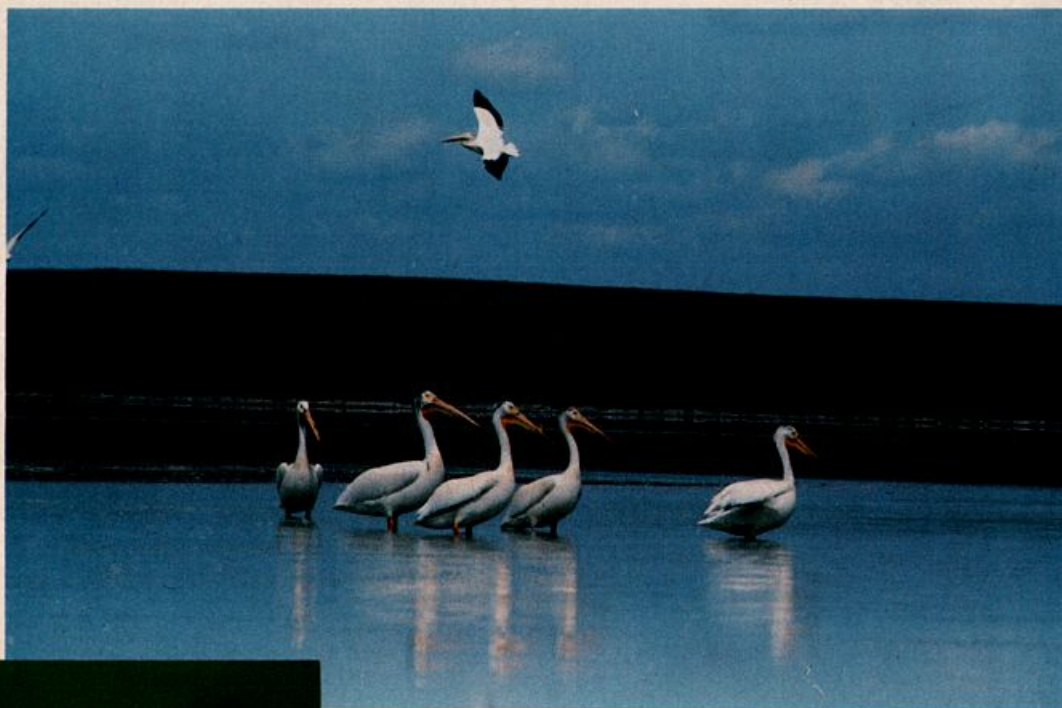


# Status of the American White Pelican: an update

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Left: Nesting island in the Chase Lake National Wildlife Refuge, North Dakota.  
Photos/J.G. Sidle.



***The status of American White Pelicans in the United States and Canada has been much debated. Is it a threatened and endangered species or has the population been increasing?***

**T**HE AMERICAN WHITE PELICAN (*Pelecanus erythrorhynchos*) breeds almost entirely in Canada and the United States. A breeding colony of about 100 nests occurs sporadically at Laguna de Santiaguillo, Durango, Mexico. Lies and Behle (1966) solicited status information on American White Pelican colonies by mail and concluded that in

1964 there were 40,067 breeding white pelicans in North America; 35,745 in the United States and 4322 in Canada. They believed the United States population had declined since the incomplete survey of Thompson (1933) and viewed the American White Pelican as a threatened species. Sloan (1973, 1982) continued the mail questionnaires through 1979 and reported only a slight decline in the United States population. Since 1972, the white pelican has been on the Blue List of

*American Birds* as a species of special concern, "an obvious candidate for federal listing" (Tate 1981). Sloan (1982) also suggested that the white pelican population (31,626 breeding birds) in the United States be considered for addition to the federal list of threatened or endangered species.

Markham (1978) indicated that the American White Pelican population of 31,000 breeding birds in Canada, though higher than the 4322 breeding birds re-

**Table 1. Breeding population of the American White Pelican, 1979-1981.**

|                         |  | <i>Canada</i>          |                  |                               |                                |
|-------------------------|--|------------------------|------------------|-------------------------------|--------------------------------|
| <i>Province/State</i>   | <i>Colony Location</i>                     | <i>Latitude</i>        | <i>Longitude</i> | <i>Number of Nests (year)</i> | <i>Number of Breeding Brds</i> |
| Alberta                 | 1. Slave River                             | 59°58'N                | 111°45'W         | 44(1980) <sup>1</sup>         | 88                             |
|                         | 2. Wadlin Lake                             | 57°45'N                | 115°35'W         | 19(1979) <sup>2</sup>         | 38                             |
|                         | 3. Birch Lake                              | 57°14'N                | 112°44'W         | 55(1980) <sup>1</sup>         | 110                            |
|                         | 4. Utikuma Lake                            | 55°55'N                | 115°24'W         | 165(1980) <sup>1</sup>        | 330                            |
|                         | 5. Pelican Lake                            | 55°50'N                | 113°10'W         | 216(1980) <sup>2</sup>        | 432                            |
|                         | 6. Beaverhill Lake                         | 53°30'N                | 112°30'W         | 41(1980) <sup>1</sup>         | 82                             |
|                         | 7. Pakowki Lake                            | 49°25'N                | 111°00'W         | 8(1980) <sup>1</sup>          | 16                             |
| British Columbia        | 8. Stum Lake                               | 52°16'N                | 123°01'W         | 120(1980) <sup>1</sup>        | 240                            |
| Manitoba                | 9. Talbot Lake                             | 54°09'N                | 99°53'W          | 150(1979) <sup>3</sup>        | 300                            |
|                         | 10. North Moose Lake                       | 54°09'N                | 100°26'W         | 860(1979) <sup>3</sup>        | 1720                           |
|                         | 11. South Moose Lake                       | 53°53'N                | 100°26'W         | 10(1979) <sup>3</sup>         | 20                             |
|                         |  | 53°44'N                | 100°17'W         | 1500(1979) <sup>3</sup>       | 3000                           |
|                         | 12. Lake Winnipegosis                      | 53°04'N                | 100°30'W         | 918(1979) <sup>1</sup>        | 1836                           |
|                         |  | 53°02'N                | 100°28'W         | 800(1979) <sup>1</sup>        | 1600                           |
|                         | 13. Kawinaw Lake                           | 52°50'N                | 99°29'W          | 2004(1979) <sup>1</sup>       | 4008                           |
|                         | 14. Pelican Lake                           | 52°25'N                | 100°20'W         | 1000(1979) <sup>3</sup>       | 2000                           |
|                         | 15. Dog Lake                               | 51°02'N                | 98°30'W          | 1000(1979) <sup>3</sup>       | 2000                           |
|                         | 16. Lake Manitoba                          |                        |                  |                               |                                |
|                         |  | A. West of Duck Island | 50°52'N          | 98°39'W                       | 85(1979) <sup>3</sup>          |
|                         | B. SW of Duck Island                       | 50°49'N                | 98°37'W          | 1167(1979) <sup>1</sup>       | 2334                           |
|                         | C. South of Scotch Bay                     | 50°48'N                | 98°25'W          | 230(1979) <sup>3</sup>        | 460                            |
|                         | 17. West Shoal Lake                        | 50°20'N                | 97°40'W          | 19(1979) <sup>1</sup>         | 38                             |
|                         | 18. East Shoal Lake                        | 50°22'N                | 97°36'W          | 1247(1979) <sup>1</sup>       | 2494                           |
|                         | 19. Lake Winnipeg                          |                        |                  |                               |                                |
|                         | A. Sandy Islands                           | 52°59'N                | 98°00'W          | 101(1979) <sup>3</sup>        | 202                            |
|                         | B. George Island                           | 52°51'N                | 97°43'W          | 60(1979) <sup>3</sup>         | 120                            |
|                         | C. Unnamed Island                          | 52°22'N                | 98°04'W          | 20(1979) <sup>3</sup>         | 40                             |
|                         | D. St. Martin Island                       | 52°17'N                | 98°01'W          | 1250(1979) <sup>1</sup>       | 2500                           |
|                         | E. Johns Island                            | 52°11'N                | 97°20'W          | 100(1979) <sup>3</sup>        | 200                            |
|                         | F. Pipe Stone Rocks                        | 51°23'N                | 96°32'W          | 1500(1979) <sup>1</sup>       | 3000                           |
| Ontario                 | 20. Lake of the Woods                      | 49°03'N                | 94°40'W          | 2140(1980) <sup>2</sup>       | 4280                           |
| Saskatchewan            | 21. Preston Lake                           | 57°30'N                | 109°02'W         | 275(1980) <sup>2</sup>        | 550                            |
|                         | 22. Kazan Lake                             | 55°35'N                | 108°20'W         | 768(1980) <sup>2</sup>        | 1536                           |
|                         | 23. Primrose Lake                          | 54°57'N                | 109°42'W         | 4834(1980) <sup>2</sup>       | 9668                           |
|                         | 24. Lavallee Lake                          | 54°20'N                | 106°35'W         | 3790(1980) <sup>2</sup>       | 7580                           |
|                         | 25. Suggi Lake                             | 54°21'N                | 102°49'W         | 1752(1980) <sup>2</sup>       | 3504                           |
|                         | 26. Redberry Lake                          | 52°40'N                | 107°10'W         | 168(1980) <sup>2</sup>        | 336                            |
|                         | 27. Lenore Lake                            | 52°30'N                | 105°00'W         | 110(1980) <sup>2</sup>        | 220                            |
|                         | 28. Mud Lake                               | 51°58'N                | 104°28'W         | 655(1980) <sup>2</sup>        | 1310                           |
|                         | 29. Old Wives Lake                         | 50°07'N                | 105°55'W         | 3075(1980) <sup>2</sup>       | 6150                           |
| Subtotal (Canada)       |  |                        |                  | 32256                         | 64512                          |
|                         |  | <i>United States</i>   |                  |                               |                                |
| California              | 30. Lower Klamath National Wildlife Refuge | 41°55'N                | 121°45'W         | 750(1980) <sup>4</sup>        | 1500                           |
|                         | 31. Clear Lake National Wildlife Refuge    | 41°51'N                | 121°10'W         | 1571(1980) <sup>4</sup>       | 3142                           |
| Colorado                | 32. Riverside Reservoir                    | 40°15'N                | 104°13'W         | 500(1980) <sup>2</sup>        | 1000                           |
| Minnesota               | 33. Crowduck Island, Lake of the Woods     | 49°20'N                | 94°58'W          | 50(1981) <sup>1</sup>         | 100                            |
|                         | 34. Lac Qui Parle Wildlife Management Area | 45°10'N                | 96°00'W          | 961(1980) <sup>1</sup>        | 1922                           |
| Montana                 | 35. Medicine Lake National Wildlife Refuge | 48°27'N                | 104°23'W         | 1600(1981) <sup>1</sup>       | 3200                           |
|                         | 36. Bowdoin National Wildlife Refuge       | 48°20'N                | 107°40'W         | 1192(1980) <sup>1</sup>       | 2384                           |
| Nevada                  | 37. Anaho Island National Wildlife Refuge  | 39°57'N                | 119°31'W         | 2880(1981) <sup>1</sup>       | 5760                           |
| North Dakota            | 38. Willow Lake National Wildlife Refuge   | 48°56'N                | 99°50'W          | 55(1981) <sup>1</sup>         | 110                            |
|                         | 39. East Devil's Lake                      | 48°00'N                | 98°36'W          | 10(1981) <sup>1</sup>         | 20                             |
|                         | 40. Chase Lake National Wildlife Refuge    | 47°01'N                | 99°27'W          | 6142(1980) <sup>2</sup>       | 12284                          |
| Oregon                  | 41. Upper Klamath National Wildlife Refuge | 42°25'N                | 122°00'W         | 410(1980) <sup>4</sup>        | 820                            |
|                         | 42. Pelican-Crump Lake                     | 42°15'N                | 119°48'W         | 250(1980) <sup>2</sup>        | 500                            |
| South Dakota            | 43. Piyas Lake                             | 45°46'N                | 97°30'W          | 325(1980) <sup>1</sup>        | 650                            |
|                         | 44. Waubay National Wildlife Refuge        | 45°25'N                | 97°30'W          | 245(1980) <sup>1</sup>        | 490                            |
|                         | 45. La Creek National Wildlife Refuge      | 43°07'N                | 101°33'W         | 1900(1980) <sup>1</sup>       | 3800                           |
| Texas                   | 46. South Bird Island                      | 27°29'N                | 97°18'W          | 150(1980) <sup>1</sup>        | 300                            |
| Utah                    | 47. Gunnison Island Great Salt Lake        | 41°30'N                | 112°46'W         | 3023(1980) <sup>2</sup>       | 6046                           |
| Wyoming <sup>5</sup>    | 48. Yellowstone Lake                       | 44°17'N                | 110°14'W         | 285(1980) <sup>1</sup>        | 570                            |
| Subtotal (U.S.)         |  |                        |                  | 22299                         | 44598                          |
| Total (Canada and U.S.) |  |                        |                  | 54555                         | 109110                         |

<sup>1</sup>Ground count of nests or adults on nests.

<sup>2</sup>Aerial photographic count.

<sup>3</sup>Aerial observation count.

<sup>4</sup>Estimated from the number of censused fledged pelicans.

<sup>5</sup>In 1984, a colony of 245 nests was discovered on an island in Pathfinder Reservoir on the North Platte River.



Figure 1. Location of American White Pelican colonies. Numbers refer to the colonies listed in Table 1.



The white pelican is not federally protected in Canada, but provincial protection has increased in recent years. Lakes with suitable nesting islands for pelicans are more numerous in central Canada than elsewhere in North America. Photo/J.G. Sidle.

ported by Lies and Behle (1966), was nonetheless experiencing a long term decline. Combining the data of Markham (1978) and Sloan (1982), the continental population was believed to be about 62,626 breeding birds. However, our data indicate that there are nearly 50,000 additional breeding white pelicans in North America (Table 1). Surveys have revealed some of the additional pelicans, but recruitment is responsible for most of the increase.

Our status report is based on our own surveys at specific colonies and contacts with biologists and managers familiar with the pelican's status at remaining colonies. In the fall of 1982, we solicited information by telephone and correspondence. This procedure enabled us to scrutinize the data directly and ascertain whether pelican estimates were guesses or were based upon aerial photography, observation, ground counts or other reliable means. Our analysis examined only the number of nests at each colony. Nest counts are usually conducted at a time when the maximum number of nests is present. However, at the time of censusing, some breeding birds may have already abandoned the colony or not yet initiated nesting. The number of observed nests  $\times 2$  gives an estimate of the

number of breeding birds at each colony. The continental population of white pelicans is higher than the breeding population. Pelicans do not breed until at least their third year. Thousands of non-breeding birds reside near colonies, occupy lakes and reservoirs far removed from colonies, or remain on the wintering grounds.

### Canada

Lakes with suitable nesting islands for pelicans are more numerous in central Canada than elsewhere in North America. Fifty-nine percent (64,512 breeding birds) of the continent's breeding population occurs in Canada, primarily in Manitoba and Saskatchewan (Table 1). Koonz and Rakowski (1985), and Roney (1978, 1979, 1982, 1984) provided the most thorough census figures for Manitoba and Saskatchewan and indicated a substantial increase in the pelican's population. In Ontario, the population increased from 880 breeding birds in the late 1960s (Vermeer 1970b) to 4280 in 1980; 5500+ breeding birds were censused there by aerial photography in 1983 (V. Macin *pers. comm.*). In Alberta, the pelican population numbered 440 breeding birds in 1967 and 1096 in 1980 (Brechtel

1981). The sole colony in British Columbia has remained stable (Dunbar 1980).

The increase of American White Pelicans in Canada may reflect better and more extensive survey work. Vermeer (1970b) tallied 14,103 nests (28,206 breeding birds) in Canada for the period 1967-1969 and believed that his methods explained the increase from the 4322 breeding birds reported for 1964 by Lies and Behle (1966). Roney (1978) indicated that different survey methods made it difficult to assess Saskatchewan's increasing pelican population (Table 2), but he reported that there had been a genuine population increase in the province (Roney 1982). Koonz and Rakowski (1985) reported that the American White Pelican has extended its range onto Lake Winnipeg and has greatly increased in Manitoba. In 1984, 20,000+ pelican nests were censused in Manitoba, an increase from the 14,021 nests censused in 1979 (Table 1).

Decreased harassment and commercial fishing are possible reasons for the increase of pelicans, formerly persecuted throughout Manitoba and elsewhere. Hydroelectric dams may allow pelicans to colonize areas north of their known historic range. These dams provide open water in which to acquire food long be-



The increase of the white pelican population may reflect more extensive survey work as well as decreased harassment by fishermen. Pelicans feed heavily on fish with no commercial value as well as on salamanders. Photo/J.G. Sidle.

fore surrounding water bodies are free of ice. Large flocks of pelicans winter and forage during migration at dams in the southern United States. The Double-crested Cormorant (*Phalacrocorax auritus*), a frequent breeding associate of pelicans, has also dramatically increased in Manitoba (Koonz and Rakowski 1985), Saskatchewan (Roney 1984), and Minnesota (Guertin and Pfanmuller 1985).

Although the white pelican is not federally protected in Canada, provincial protection has increased in recent years. New regulations in Alberta prohibit unauthorized entry or approach within 0.5 mile of the designated islands at six colonies April 15-September 15, the pelican's nesting and rearing period. In Saskatchewan, all pelican colonies have recently been designated as wildlife refuges and access is also prohibited April 15-September 15, with a 100-meter buffer zone around specified colonies (Roney 1984).

### United States

Our 1982 survey indicated over 10,000 more breeding white pelicans in the United States than the 31,626 reported by Sloan (1982) (Table 1). Large increases were evident at most of the large colonies. At Chase Lake National Wildlife Refuge, North Dakota, the number of nests increased from 4051 (8102 breeding birds) in 1979 to 6152 (12,284 breeding birds) in 1980 (Sidle and Ferguson 1982). In the United States, as in Sas-

katchewan (Table 2), substantial decreases and increases in breeding populations do occur at many colonies. When conditions are favorable small colonies appear at Charles M. Russell National Wildlife Refuge, Montana, Malheur National Wildlife Refuge, Oregon (breeding occurred in 1985), and Sand Lake National Wildlife Refuge and North Drywood Lake, both in northeastern South Dakota.

Forty-one percent (44,598 breeding birds) of the entire breeding population occurs within the United States (Table 1). Most of the major colonies have been protected for many years in national wildlife refuges. In recent years state agencies and private organizations have taken an interest in remaining colonies.

Table 2. Number of American White Pelican nests in Saskatchewan

| Colony         | 1968* | 1976 | 1978   | 1980   | 1982   |
|----------------|-------|------|--------|--------|--------|
| Cypress Lake   | 12    | 0    | 0      | 0      | 0      |
| Dore Lake      | 600   | 0    | 0      | 0      | 0      |
| Kazan Lake     | 902   | 275  | 952    | 768    | 609    |
| Lavallee Lake  | 1020  | 1293 | 3019   | 3790   | 3569   |
| Lenore Lake    | —**   | —    | —      | 110    | 42     |
| Old Wives Lake | 746   | 1420 | 3084   | 3075   | 2617   |
| Preston Lake   | —     | —    | —      | 275    | 95     |
| Primrose Lake  | 2459  | 2313 | 4007   | 4834   | 6822   |
| Mud Lake       | —     | 138  | 232    | 655    | 437    |
| Redberry Lake  | 139   | 89   | 72     | 168    | 240    |
| Suggi Lake     | 680   | 325  | 913    | 1752   | 1049   |
| Total          | 6558  | 5853 | 12,511 | 15,427 | 15,480 |

\*Vermeer (1970a)

\*\*(-) signifies no census conducted in that year.

### Discussion

Historically, the American White Pelican was a more common nester in North America than it is today. For example, at least 23 colonies were known for the far western United States. (U.S. F. & W. S., 1984), but only five remain today and their numbers have stabilized (Smith *et al.* 1984). Overall, we believe that pelican numbers are stable or increasing throughout the remainder of their United States and Canadian ranges. Indeed, they may be more abundant than ever in certain areas such as central Manitoba (Koonz and Rakowski 1985).

A pelican colony is a vulnerable concentration of birds. It takes little disturbance to disrupt the activities of breeding birds. We recommend, as have others, that people be kept away from colonies and that biologists and managers enter colonies only rarely and for legitimate reasons. For monitoring the continental population, we urge the use of aerial photography as described by Sidle and Ferguson (1982) and Roney (1984). Such photography is fast, efficient, and reliable and does not disrupt pelican breeding activity. Canada and the United States should cooperate every two-three years to conduct breeding surveys of American White Pelicans. Current census data are the result of individual interest and not part of a permanent monitoring plan. In the United States, most pelican colonies are located on national wildlife refuges. The United States Fish and Wildlife Service could direct a coordinated aerial census on refuges and initiate discussions with state and provincial agencies and the Canadian Wildlife Service concerning the censusing of remaining colonies.

## ACKNOWLEDGMENTS

We thank John Anderson, Steve Brechtel, Ken Diem, David Dunbar, Steve Elefant, Bruce Harris, D. McGregor, Gary Miller, Geoff Pampush, Lee Pfannmuller, Brian Sharpe and refuge managers of the U.S. Fish and Wildlife Service for providing information on American White Pelican colonies. We also thank Phillip M. Arnold, Charles G. Kjos, and Robert B. Oetting for reviewing the manuscript.

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