



American White Pelican

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of the provincially
endangered American
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Why are American White Pelicans at risk?

British Columbia has only one nesting colony of American White Pelicans. It is located at Stum Lake in White Pelican Provincial Park in the Chilcotin region, 70 kilometres west of Williams Lake. Because these colonial birds are migratory, have only a single nesting site, and feed on fish in shallow lakes sometimes hundreds of kilometres from Stum Lake, they are particularly vulnerable to a variety of threats.

At Stum Lake, both natural and human-influenced events can affect nesting success. Fluctuating water levels are the most frequent natural cause of colony abandonment. In drought years, nesting islands become connected to the mainland, allowing access to land-based predators. A single severe flood or a series of wet years can result in inundation of islands. Over the thousands of years they have existed on this continent, white pelicans have been able to cope with these natural events and maintain their overall population. In recent decades, however, various drainage, irrigation, and diversion projects, particularly in the United States, have resulted in the demise of some colonies.

In some years, predation may have drastic effects on a colony. In 1972, coyotes swam to a nesting island in Stum Lake after the young had hatched, and decimated the colony; only 10 young fledged from 116 nests. More frequently, coyotes cross to the islands on ice and cause the earliest nesters to abandon their nests. These birds usually re-nest successfully a week or two later when the ice has melted and the island is more secure.

Despite the natural losses described above, enough pelicans normally survive to maintain colony size, and even to

permit some increase in numbers. Additional human-caused disturbance can, however, tip the scales in the other direction.

At some nesting colonies, disturbances caused by high-powered boats, low-flying aircraft, or people walking through colonies have caused serious losses, and even complete abandonment. In the panic of such an event, the fleeing adult pelicans often crush eggs or knock them out of the nest. The untended eggs or small nestlings are then quickly preyed on by gulls, ravens, or crows, or may die from exposure to cold rain or searing sun. At Stum Lake about one young reaches the flying stage for every two eggs laid. This is typical for American White Pelicans.

Some pelicans also die from a variety of causes during migration or while on their wintering grounds, including shooting, disease, adverse weather, or entanglement in fishing gear.

Although British Columbia's only nesting colony of white pelicans appears to be holding its own, it is also evident that human-caused disturbances, mortality, and habitat degradation are taking their toll on the species across its range. Surely these magnificent birds deserve better treatment in future years.

What is their status?

Pelicans were first reported nesting at Stum Lake in 1939. There has been a fairly steady increase from about 100 nests in the early 1980s to over 400 in 1993, although numbers fluctuate from year to year.

The world population of the American White Pelican is estimated at about 50 000 nesting pairs, entirely confined to North America. In the United States, 15 000 to 20 000 pairs nest at about 15 widely scattered colonies in the northern plains, Rocky Mountain states, and

California, plus an isolated site on the Gulf Coast of Texas. The nesting range extends northward into Canada to include 30 000 or more nesting pairs at about 30 colonies that are found from British Columbia to the Lake of the Woods area of Western Ontario.

There is little reliable information on whether the North American population of American White Pelicans is increasing or decreasing, because there has not been a continent-wide survey of all colonies in a single year. The total of 50 000 pairs may seem substantial, but most of these nest in a few large colonies which makes them especially vulnerable.

The American White Pelican has been legally designated as an Endangered Species in British Columbia.

Although not included in the federal Migratory Bird Convention Act, the American White Pelican is protected by state and provincial wildlife laws. In British Columbia the species is pro-

protected against killing, capture, or harassment under the Wildlife Act. It is on the provincial Red List, and has been legally designated as an Endangered Species in British Columbia.

What do they look like?

The American White Pelican (*Pelecanus erythrorhynchos*) is unmistakable. Its huge size (wingspan 2.4 to 3.0 metres; weight 6 to 7 kilograms), snowy white plumage with jet-black wing-tips, and huge orange-yellow bill and pouch, distinguish it from all other species.

In flight, white pelicans are a spectacular sight. Almost always in groups, they fly gracefully in precisely spaced lines or "V" formations, flapping slowly in unison half a dozen times, then



gliding, then flapping and gliding again. They fly with the neck held back against the shoulders, and the bill resting against the breast. Whooping Cranes, Snow Geese, and swans all fly with outstretched necks. Despite their ungainly appearance, white pelicans are excellent gliders and agile fliers. When leaving a migration rest-stop, or heading to a foraging lake from the nesting island, they often catch thermal air currents and soar to great heights, even disappearing from view. Their descent from such heights may be spectacular as they drop like meteors, the wind rushing with a roar through their half-closed wings. During normal flight, which is about 50 kilometres per hour, every motion is easy, unhurried, and graceful.

When at rest with the wings folded, almost no black is visible. On the water they float with surprising buoyancy. Other characteristics of pelicans include a hook on the end of the upper bill, a

short tail, short stout orange-red legs, and large webbed feet. Male and female pelicans are similar in appearance, although females are slightly smaller.

In late winter and spring, adult white pelicans develop a horny projection, roughly triangular in shape and about 4 centimetres high, on the upper bill. At this time they also show some pale yellow feathering on the crown of the head and upper breast, and the bare skin around the eye turns orange-yellow. These breeding season characteristics disappear in early summer. Juvenile white pelicans have greyish feathers during their first summer and autumn.

The large, naked pouch of pelicans is connected to the throat, and is very expandable. It is used to catch fish, as a dish from which nestlings can feed on regurgitated fish, and for display during courtship. It can also be fluttered in and out to promote cooling. Contrary to popular belief, pelicans do not fly with fish in their pouches.

The American White Pelican is generally a silent bird, but on the breeding grounds it utters low-toned grunts or subdued croaks. Sounds of fledglings have been described as a low “coughing, whining grunt.”

How do they reproduce?

American White Pelicans nest in colonies from a few to several thousand pairs, on islands in lakes, reservoirs, or large rivers. At Stum Lake, there are two preferred nesting islands. Colony sites are relatively flat, have bare ground or low plants but no dense tree or shrub growth, and are situated fairly close to the water but out of reach of waves. Islands are undoubtedly chosen because land-based predators cannot easily reach them.

Courtship begins immediately after arrival at Stum Lake in late April. A pair bond is formed when a male can successfully defend his chosen mate from other males. The mated pair then

engage in curious rituals such as pouch displays and bowing, and the female selects a nest site.

Nests are about 60 cm across, and may be made of a mound of soil, plant material and debris with a hollow in the middle, or may merely be a scrape on bare ground. They are about one metre apart – just enough that neighbouring pelicans can't reach each other. At Stum Lake, nests are scraped into shape three or four days after the pelicans arrive. Most eggs at Stum Lake are laid in the first 10 days of May.

White pelican eggs are large (about 9 cm long) and dull white, with a coarse-textured, chalky surface. They often become quite stained as incubation proceeds. The usual clutch is two eggs, but varies from one to three, with an average at Stum Lake of 1.8. Incubation takes about 30 days and involves both adults, which faithfully replace one another every one to three days.

Nesting events at Stum Lake have been delayed by a few days, or even weeks, in years when serious disturbance occurred during the egg-laying or early incubation period.

Young pelicans are naked and helpless when born, but have thick white down within a week. They can stand at three weeks, and leave their nests and congregate in juvenile groups called "pods" by their fourth week. While in the nest the youngsters are dutifully tended by both parents, which brood them in cold weather, shade them when it is hot, and guard against predators. The two parents exchange these duties each day. While one is at the nest, the other is away catching fish.

Very small nestlings are fed liquid food from the tip of the adult's bill. As the young grow they probe aggressively into the parents pouch for regurgitated, half-digested food. The adults show less interest in

fledglings that have joined a pod, but both parents are kept busy bringing food to them at this stage, which lasts until they can fly at 7 to 10 weeks of age.

Young American White Pelicans may wander widely for the first two years of their lives, but will return to Stum Lake to nest when they are three years old. The maximum lifespan may reach 17 years.

What do they eat?

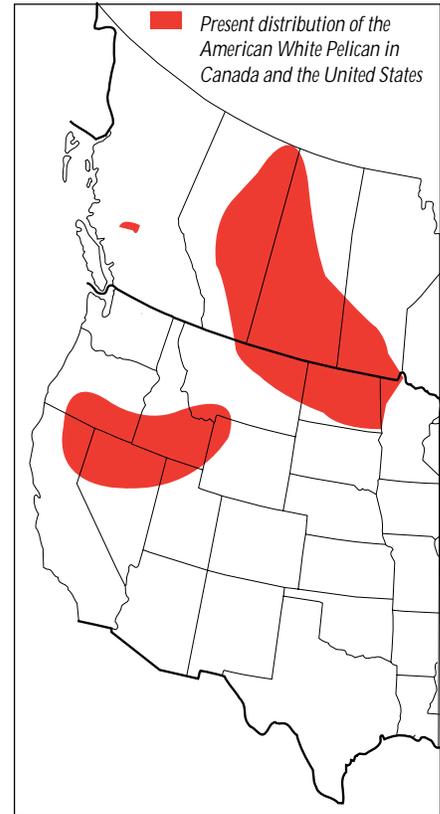
The American White Pelican is piscivorous (fish-eating). It doesn't dive underwater like its close relative the Brown Pelican, but feeds from the surface on fish that live in shallow water. The diet of the white pelican varies considerably, but includes carp, perch, suckers, catfish, chub, and shiners, fish that are at home in shallow, often warm waters. Other aquatic animals such as frogs, salamanders, and crayfish sometimes supplement the pelican diet.

There is little information on pelican food habits in British Columbia. Bones of squawfish and sucker, fish which are abundant in shallow lakes where the Stum Lake birds forage, have been found at the nest site.

There are few fish in Stum Lake, and pelicans do not feed there. Instead

Pelicans feed at lakes up to 164 km away, scattered over 20 000 square kilometres of the Fraser Plateau.

they make regular flights to lakes scattered over 20 000 square kilometres of the Fraser Plateau, and up to 164 km away. Common fish in the main foraging lakes, in addition to squawfish and suckers, include shiners, chub, whitefish, and rainbow trout. Most feeding activity occurs in morning and evening hours, but night-foraging is known to occur in other areas, and probably



occurs in British Columbia too. While at the foraging lakes the pelicans actually spend more time loafing than catching fish. This mostly involves preening and resting activities.

In British Columbia, as in other areas, white pelicans may feed individually or in cooperative social groups. When feeding alone they thrust their bill into the water and normally catch one fish at a time. This may be done while swimming in deep water or walking in shallows. Social feeding involves groups of 10 or more pelicans which form a semi-circle facing the shore, and, with vigorous wing-flapping and splashing, herd schools of fish into a confined area in shallow water where they are easily caught.

Where do they live?

American White Pelicans are highly migratory. Those which nest at Stum Lake spend the winter in southwest California and the Pacific coast of Mexico, while birds from colonies on the Great Plains mostly winter

south to Florida, the Gulf Coast, and east coast of Mexico.

White pelicans enroute to British Columbia begin to leave their southern wintering grounds in March. Most enter the province via the interior of Washington and move north and northwest through the Okanagan and Nicola valleys, and on to Alkali and Stum lakes. In spring, the birds are spurred on by the urge to nest, and the migration period is brief. Peak migration time in the Okanagan occurs between April 15 and 22; most pelicans arrive at Stum Lake between April 20 and 30. Flocks of 10 to 30 or more birds are not uncommon during spring migration.

White Pelicans have been seen in summer on 50 or more lakes scattered widely across the Fraser Plateau. The lakes used most regularly have abundant non-game fish populations, shallows suitable for catching fish, and safe sites for the birds to rest or “loaf” on, such as barren islands, sandbars at river deltas, or logs lying in shallows around lake margins. The most important foraging lakes such as Abuntlet, Alkali, Chilcotin, Kluskus, and Pantage mostly have average depths of 1 m or less, and have suitable loafing sites at them or nearby.

By mid August, the young can fly and pelicans are no longer tied to the nesting islands at Stum Lake. Whether they continue foraging at lakes on the Fraser Plateau in late August and September isn't known, since there are very few

In winter, pelicans from British Columbia frequent coastal bays, lagoons, and estuaries from central California to southern Mexico.

autumn records of pelicans in the Cariboo-Chilcotin region. Most autumn (September-November) records of pelicans in British Columbia are from the Thompson-Okanagan region.

The autumn migration out of British Columbia seems generally to follow the spring route, but is more leisurely, and the flocks are smaller (usually less than



PELICANS NEST IN CLOSE PROXIMITY TO ONE ANOTHER.
R. Wayne Campbell photo

10 birds) and more widely dispersed. The migration through the Okanagan Valley extends from late August to late November. There are occasional autumn records for the West

Kootenay, Shuswap, and south coast areas as well.

During migration, lakes such as Osoyoos, Skaha, and Vaseux in the Okanagan Valley, and Stump, Nicola, and Chapperon lakes in the Nicola Valley, provide temporary resting and feeding sites for white pelicans. In winter, pelicans from British Columbia frequent coastal bays, lagoons, and estuaries from central California to southern Mexico, as well as some inland waters in

California. These migration and wintering habitats are extremely important for long-term survival of pelicans that nest in British Columbia.

Pelicans may occasionally be observed on lakes or in flight during their spring migration through south-central British Columbia, which is at a peak in

the last two weeks of April. Visits to the nesting site at Stum Lake, in White Pelican Provincial Park, are strongly discouraged because the birds are easily disturbed. At some of their foraging lakes, such as Alkali Lake, the pelicans have become accustomed to people and passing traffic and may be readily observed from a respectful distance, primarily in June and July, without harmful disturbance.

What can we do?

In order to provide protection for the only nesting colony of American White Pelicans in British Columbia, Stum Lake and the immediate lands surrounding it were given Provincial Park Status in 1971, and named White Pelican Provincial Park. To provide further protection, and to heighten

awareness of the vulnerability of this bird in the province, it was designated as an Endangered Species under the British Columbia Wildlife Act in 1980.

BC Environment and BC Parks staff, with the assistance of naturalists, conduct annual counts, make periodic patrols to control disturbance of nesting pelicans by recreationists, and encourage people wishing to see or photograph pelicans to visit pelican foraging lakes rather than Stum Lake. Pilots have been



WHITE PELICANS ARE GRACEFUL IN FLIGHT.
R. Wayne Campbell photo



SMALL ISLANDS IN STUM LAKE ARE USED FOR NESTING.
David Dunbar photo



NESTS ARE OFTEN BUILT ON BARE GROUND.
R. Wayne Campbell photo

advised not to fly lower than 600 m over the colony from May to August. Fishing, trapping, hunting and discharge of firearms are not permitted at Stum Lake between March 1 and August 31.

The public is asked to respect the solitude that these great white birds need.

Research studies of great value for protecting and managing white pelicans have been carried out at Stum Lake and surrounding areas. A preliminary recovery plan has been prepared considering matters such as boating, aircraft, and firearms restrictions, enhancement and protection of foraging habitat, improvement of nesting islands in Stum Lake, prevention of predator access to the islands, and potential for starting a second nesting colony in the province.

BC Environment personnel have banded or colour-marked over 1000 juvenile pelicans at Stum Lake since 1968. As band returns and sightings accumulate, they provide valuable information on migration routes and habitats, and on locations, causes, and rates of mortality of Stum Lake pelicans when they are outside of British Columbia.

Future management emphasis will be on protection of nesting and foraging pelicans and their habitat from human disturbance. This is an ever-increasing

threat as the human population of British Columbia grows, logging roads creep closer to pelican lakes, and more and more people wish to view this intriguing species.

Although the current status of the American White Pelican in British Columbia is encouraging, its long-term future is uncertain. The public is asked to respect the solitude that these great white birds need, and to support programs that will ensure they are always part of our precious wildlife heritage. 



YOUNG PELICANS ARE Banded EACH YEAR.
R. Wayne Campbell photo

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