

Foraging Ecology of Endangered American White Pelicans in British Columbia

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In British Columbia, American White Pelicans (*Pelecanus erythrorhynchos*) nest only at Stum Lake, but foraging occurs up to 165 km from the breeding colony over an area of 30,000 km². To support habitat conservation efforts, data was collected from 1999 to 2002 on significant elements of foraging habitat and foraging behaviour. Aerial surveys quantified large-scale patterns of foraging habitat use, and the highest daily counts during these surveys were 623 on May 4, 2001 and 617 on July 16, 2002. Low elevation ice-free lakes in the vicinity of Williams Lake were used for foraging early in the breeding season (late April – early May) but not later in summer. Important foraging areas in summer included Pantage, Chilcotin and Tzenzaicut Lakes. A number of adult pelicans (≥ 77) also occurred approximately 200 km north of the breeding colony at Nulki, Tachick and Stuart Lakes, but these birds appeared to be non-breeders. Relocations of four radio-tagged individuals confirmed that breeding pelicans vary their use widely among various foraging lakes. Ground surveys were used quantify small-scale habitat use patterns, and the highest individual lake counts were 435 at Tzenzaicut Lake on June 13, 2002 and 350 at Pantage Lake on July 10, 2001. Foraging occurred in shallow water along shorelines, at creek mouths, in streams, and in shallow open water in the middle of some lakes. Nocturnal foraging was predominant, and began shortly after dark and continued throughout the night and into dawn. Stream foraging associated with spawning coarse fish, such as longnose suckers (*Catostomus catostomus*), was only observed in the spring and typically occurred at night. Foraging effort (dips per minute) varied significantly among different foraging lakes but catch success (captures per bird per minute) did not. The average prey-capture rate for all lakes was 0.57 small fish per bird per minute, and catch success was three times higher for individual pelicans compared to pelicans foraging as a group. Pelicans swam or flew away when approached by humans, but the response distance varied by the type of disturbance. Fixed-wing aircraft elicited avoidance movements at further average distances (400-800 m) compared to motorboats and canoes (70-150m).