

WHITE PELICAN REPRODUCTION IN THE MOLLY ISLANDS  
BREEDING COLONY, YELLOWSTONE NATIONAL PARK

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Objectives

Compared to other North American White Pelican, Pelecanus erythrorhynchos, breeding colonies, the Molly Islands Colony is a minor colony consisting of 400-600 adults (Lier and Behle, 1966; Diem and Condon, 1967; Sloan, 1973; Diem, 1976). Despite its small size, the colony is unique for these reasons: 1) it is the only White Pelican breeding colony in a national park; 2) the location of the colony at an elevation of 7,733 ft (2,357 m) is the highest recorded for any breeding colony of the species; 3) discovered in 1890, the colony has had variable surveillance since 1917, with relatively intense monitoring since 1965; 4) the breeding population is composed of birds from both coasts of North America; and 5) the colony's nesting sites on the two Molly Islands change frequently with no predictable pattern. In addition, a cumulative substrate uplift along the north shore of Yellowstone Lake appears to have significantly raised the stable water level of the southern arms of the lake. Consequently, the major objective of this project is to continue monitoring changes in the reproductive success of the Molly Islands White Pelican colony and to continue studies of the factors influencing those changes.

Procedures

Nesting and fledgling censuses continue to be taken from a boat 100-200 ft from shore. Because landing in the colony would be too much of a destructive disturbance, clutch data cannot be collected. Some errors in nest counting probably occur, however, the fledgling censuses are very accurate.

Results

Nesting and fledging counts for the Molly Islands White Pelican colony for the period 1977 through 1985 are summarized in Table 1. A very mild, late spring and early summer created a very favorable breeding environment. The breeding season extended over a longer than normal period. On July 3 around 50% of the young birds were 1/3 - 1/2 grown while 5-10% were just hatched or still in eggs being incubated. On August 10 the degree of this accelerated, as well as, disbursed breeding activity was further evident with around 5% of the young already able to fly while about the same number were still downy. As a result, an all-time record of 650 young pelicans was established. Because of the relatively late developed young, it was estimated that a minimum of 620-630

Table 1. Numbers of water birds nests and young fledged in the Molly Islands breeding colony, 1977-1985.

Year	Species	Date	Nesting Census			Fledgling Census			
			Rocky Island		Sandy Island		No. of Fledged	Per Nest	
			No. of Nests	No. of Nesting Aggregations	No. of Nests	No. of Nesting Aggregations			
1977	White Pelican	7/7	22	3	195+	5	8/11	302	1.39
1978	White Pelican	7/9	24	1	167+	6	8/15	230	1.20
	Double-crested Cormorant	7/9	11	2			8/15	0 <sup>a</sup>	
	Caspian Tern	7/19	0				8/15	0	
1979	White Pelican	6/27	78	2	172 <sup>b</sup>	2 <sup>b</sup>	8/9	418 <sup>b</sup>	1.67
	Double-crested Cormorant	6/27	6	1			8/9	15	1.88
	Caspian Tern	6/27	21	1			8/9	11	0.52
1980	White Pelican	6/23	201	6	84	5	8/12	340	1.19
	Double-crested Cormorant	6/23	1	1			8/12	17 <sup>*c</sup>	?
	Caspian Tern	6/23	18	1			8/12	12	0.67
1981	White Pelican	6/28	91	4	199	6	8/19	232	0.80
	Double-crested Cormorant	6/28	17	3			8/19	19	1.12
	Caspian Tern	6/28	14	1			8/19	18	1.29

1982	White Pelican	7/3	27	1	47+ <sup>d</sup>	2+	8/20	29	d
		7/13	27	1	0	0			
	Double-crested Cormorant	7/3	12 <sup>a</sup>	2	1 <sup>a</sup>	1	8/20	14	d
	Caspian Tern	7/3	17	1			7/13	0	
1983	White Pelican	7/13	102	1	208	5	8/24	268	0.86
	Double-crested Cormorant	7/13	4	2	11	1	8/24	d	
		8/24	9	2	15	1	7/13	5+	
	Caspian Tern	7/13	12	1			8/24	0	
1984	White Pelican	7/6	49	2	268	9	8/5	482	1.52
	Double-crested Cormorant	7/6	3	1	17	1	8/15	d	
	Caspian Tern	7/6	3	1	0	0	8/15	0	
1985	White Pelican	7/3	92	1	197	6	8/10	650	
	Double-crested Cormorant	7/3	10	3	18	1	8/10	d	
	Caspian Tern	7/3	0		0	0	8/10	0	

a Extensive flooding inundated much of the early nesting, thereby making an accurate nesting effort count impossible.

b Two additional nests were established on the Sandy Island after the 6/27 census.

c Three plus additional nests were established after the 6/23 census in 3 plus aggregations.

d Young and adults were indistinguishable in the fledging census.

pelicans would fledge from the Molly Islands in 1985. Based on carcass counts, pre fledging mortality of juvenile pelicans was at least 7%.

The same general breeding conditions prevailed for the Double-crested Cormorants and the California Gulls. The much advanced development made it impossible to obtain an accurate nest count for any of these waterbirds. By the time of the fledging count, the young California gulls had left and the adult and young Cormorants were so intermingled that a fledging count for those two species was equally impossible. There was no evidence of any Caspian Tern breeding in 1985. Only 2 adults were observed and these were seen during the nesting survey.

#### Acknowledgements

I wish to thank John B. Adams and Clifford McCreight for their assistance with these censuses.

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