

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 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 30.3-60.6 m 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

The mild spring and early summer accelerated the breeding activities for the Molly Island water birds. A summary of the nesting and fledging censuses for the period 1977 through 1987 is presented in Table 1. Generally, the 1987 breeding season was 2-3 weeks early with the breeding activities being more synchronized into a rather compressed time period. On June 23 a majority of the birds were 10-14 days old, with some young exceeding 3 weeks of age. Most of the pelican nests

Table 1. Numbers of water birds nests and young fledged in the Molly Islands breeding colony, 1977-1987.

Year	Species	Date	Nesting Census			Fledgling Census			
			Rocky Island		Sandy Island		No. of Fledglings	No. 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	1	1	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					
1984	White Pelican	7/6	49	2	268	9	8/24	0	1.52
	Double-crested Cormorant	7/6	3	1	17	1	8/5	482	
		7/6	3	1	0	0	8/15	d	
	Caspian Tern	7/6					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	
		7/3	0		0	0	8/10	0	
	Caspian Tern	7/3							
1986	White Pelican	6/24	25		16		8/5	13 chicks	25-65% developed
	Double-crested Cormorants	6/24	8		17		8/5	50 chicks	25-65% developed
		6/24	0		0				
	Caspian Tern	6/24							

1987	White Pelican	6/23	148	2	256	3	8/11	563	1.39
	Double-crested								
	Cormorants	6/23	32	3	28	1	8/11	+100	+1.67
	Caspian Tern	6/23	20	1	0	0	8/11	+11	+0.55

- 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.

appeared to contain young.

Nesting white pelicans on the Rocky Island appeared to have encroached deeper into the area usually intensively occupied by nesting California Gulls. Overall, there appeared to be fewer nesting California Gulls than seen in previous years. Double-crested Cormorant nesting showed a marked increase (over 200%) over previous censuses. Also, the Caspian Tern nesting efforts was one of the highest recorded since 1977.

The relatively mild, dry summer favored survival and a near record number of White Pelicans were fledged. On August 11 a total of 563 young pelicans were counted, of which about 550 were expected to survive as flying young. During this census, 10-15% of the young either took their first flight or had been flying for several days.

While only 11 Caspian Terns were observed, it was felt that at least some 5-7 birds were hiding in the dense shore vegetation. This assumption was based on the number and aggressive behavior of Caspian Tern adults around and over that vegetated area. The young terns had achieved about 85% of their growth.

An equally successful reproductive effort appeared to have been enjoyed by the Double-crested Cormorants. While 17 young cormorants were still confined to nests, at least 50-60 young, non-flying cormorants were swimming out from the islands. Also, a number of young cormorants were observed flying with adults. Considering the nesting effort and the young observed, the number of cormorants fledging from the Molly Islands would likely be +100.

#### Literature Cited

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