

tend to scatter eagles, while severe winters with ice choking even large rivers may move eagles farther south or to food supplies at dams. Immature eagles might react differently than adult eagles. However, our data indicate that in both severe and mild winters (2001-02 was the fifth mildest since record keeping began at the Peoria weather station) the ratio of immature to adult eagles was similar (Figure 1). Other reliable observers are also noting a high percentage of immature eagles in smaller samples from along the Peoria, LaGrange, and Alton pools of the Illinois River (Appendix B). If immature eagles are under-represented, evaluation of population status is compromised. This is no small matter for research, management, conservation, and decision-making people pondering the status of listed species.

Only when a large number of adult eagles made a food-driven stopover did our seasonal immature count fall below 50% (Figure 1). In commenting on spring and fall migration, Buehler (2000) emphasized the importance of stopover habitat, where habitat suitability is

apparently food-driven. On 4 February 1999, a combination of ice breakup on Lake Chautauqua and gizzard shad pouring over a refuge spillway attracted most of the 181 eagles (64% adult) we counted. We suspect CNWR is becoming an important stopover as well as a wintering habitat for Bald Eagles.

Winter survival needs were identified in DeVore (1993). Quoting extensively from the work of

Thomas Dunstan, DeVore (1993) noted that good winter habitat must provide an available food source plus older and larger trees that offer sites for perching, loafing, and night-time roosting. Though sedimentation and barge traffic are destabilizing factors for large, old trees along the Illinois River, expansion and improvement of federal, state, and more recently privately controlled habitat restoration proj-

Figure 1: Mean number of adult and immature Bald Eagles at Chautauqua National Wildlife Refuge along a standardized census route for comparable dates, 1997-98 through 2001-02. The means are based upon 15 to 18 censuses during each of the five seasons, November through March.

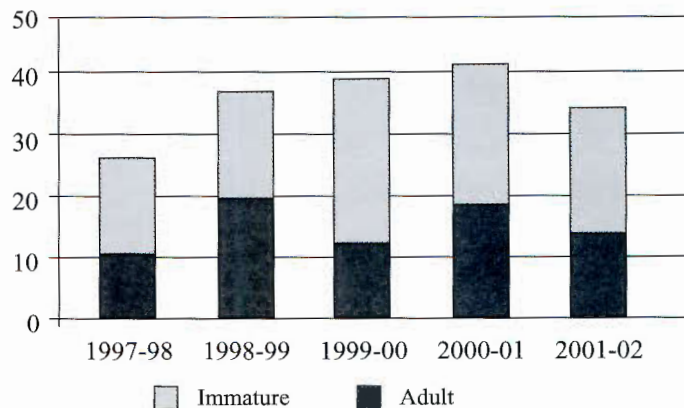


Table 1: Bald Eagle numbers and ages (adult, immature, or unknown) from Audubon Christmas Bird Count centers at Chautauqua NWR, comparing 1973-82 with 1983-92 and 1993-2002. The standard deviation (*s*) was calculated for known-age eagles.

Count Year	Ad	Im	Un	Count Year	Ad	Im	Un	Count Year	Ad	Im	Un
1973	7	3		1983	7	7		1993	47	27	3
1974	6	5		1984	50	33		1994	37	41	
1975	18	17		1985	29	17		1995	35	35	1
1976	10	6	1	1986	39	39	3	1996	42	39	
1977	9	8	1	1987	26	25		1997	39	35	
1978	23	21		1988	30	27	9	1998	41	58	
1979	5	2		1989	12	4		1999	79	72	
1980	26	13		1990	25	6	2	2000	32	39	
1981	17	12		1991	74	39		2001	24	19	
1982	6	3	1	1992	63	46	2	2002	54	52	
Means	12.7	9.0	0.3	Means	35.5	24.3	1.6	Means	43.0	40.8	0.4
<i>s</i>	7.7	6.5	1.4	<i>s</i>	21.4	15.2		<i>s</i>	15.0	15.8	
Age %	57.7	40.9	1.4	Age %	57.8	39.6	2.6	Age %	51.1	48.4	0.5