
VIRGINIA DEPARTMENT OF GAME & INLAND FISHERIES
PERFORMANCE REPORT (July 1, 1993 - June 30, 1994)

PROJECT TITLE:	WILDLIFE CONSERVATION	PROJ. NO:	WE99R-3
STUDY TITLE:	RARE, THREATENED, & ENDANGERED BIRD CONSERVATION	STUDY NO:	IV
JOB TITLE:	SHOREBIRD CONSERVATION	JOB NO:	V
PERSONNEL:	BOB CROSS, RUTH BECK, DANA BRADSHAW, BRYAN WATTS, KAREN TERWILLIGER	COSTS:	
		Total:	\$33,000
		Federal:	\$31,200
		State:	\$1,800

SUMMARY:

Piping plovers exhibited an 8% decline from 212 individuals in 1993 to 196 in 1994, according to the results of the 1994 population survey conducted during the first week in June. This decline is not likely to be significant and probably indicates a relatively stable population. Nesting success for piping plovers in Virginia was derived from monitoring efforts at six sites (60% of population) and was calculated as 1.65 chicks fledged per nesting pair of adults. This represents a 14% improvement over 1993 figures and the greatest nesting success recorded for piping plovers in Virginia to date. The Wilson's plover population estimate declined by 13% to 75 individuals in this year's survey. No estimates are available for nesting success for this species.

OBJECTIVE A: To determine and monitor piping and Wilson's plover populations and selected habitat parameters along the barrier islands and Tidewater Virginia.

PROCEDURE:

Annual surveys for piping plovers and Wilson's plovers have been conducted in Virginia since 1986. The 1994 survey was conducted during the first ten days of June by walking linear transects through all suitable nesting habitat and recording the number and location of all individuals. Breeding was confirmed in most cases by locating the eggs or young or by observing territorial behaviors of the adults. The methodology is expected to minimize the possibility of double-counting individuals within the survey period and to yield an accurate count of the Virginia breeding population for piping and Wilson's plovers. Additionally, data were collected regarding physical parameters of nest locations for long-term analysis of nest site selection. Nesting success for piping plovers was determined at selected sites by closely monitoring nesting pairs in weekly visits throughout incubation and brood rearing. Young were considered fledged at 25 days of age or if they were observed in flight. A statewide productivity was calculated as the weighted mean productivity from six nesting sites.

FINDINGS:

Piping plovers showed a slight decline (8%) from 1993 population estimates according to the results of this year's survey. A total of 196 individuals (96 pairs, 4 singles) were recorded by ten survey participants during the first week of June (Table 1). Compared to last year, notable population increases occurred on Smith Island (+50%), and Assawoman Island (+40%) whereas nesting populations declined on North Metompkin Island (-14%) and Assateague (-30%). On many barrier islands nesting habitat formed by severe storms in 1991-1992 continues to be utilized by increasing numbers

Distribution of Nesting Plovers On The Virginia Barrier Islands, 1994

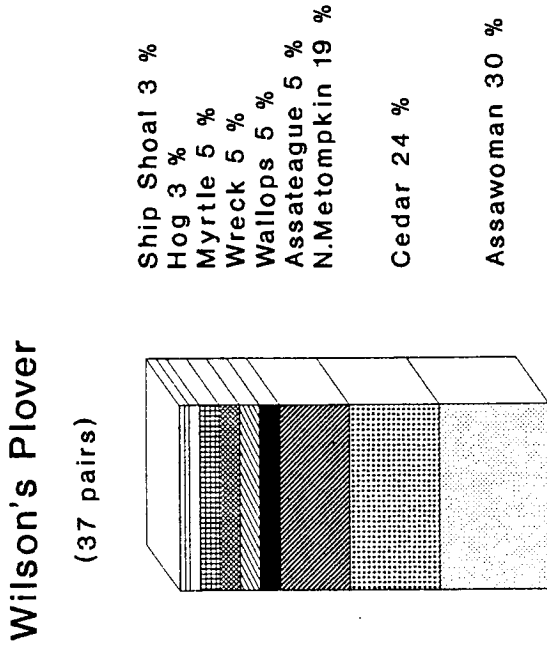
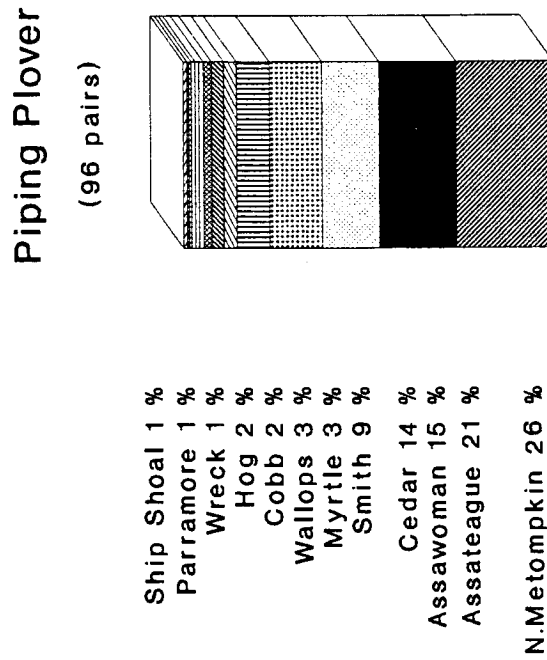


Figure 1

of piping plovers. On Assawoman Island and Cedar Island, large areas of beach are frequently overwashed by high tides and denuded of encroaching vegetation. These areas support many nesting plover despite the danger of nest flooding. In other places, sand has accreted and beaches are becoming more vegetated as they were prior to significant storms. In those areas, piping plovers find suitable nesting habitat less common.

Piping plover were scarce early in the spring on Assateague Island (Chincoteague National Wildlife Refuge). Only 19 pairs were recorded there by refuge personnel during the June survey. However, 25 pairs nested there by the end of the breeding season. Piping plovers returned to the Wash Flats, a seasonally drained waterfowl impoundment on Assateague, after a year's absence and once again nested successfully there.

Despite some small shifts in the distribution of piping plovers on the barrier islands, most birds (72%) were still found on the northern islands of Assateague, North Metompkin, and Assawoman (Figure 1). Some southern islands are lacking in suitable nesting habitat or are plagued with increasing predator populations, but other islands appear highly suitable and still under utilized by piping plovers. On the mainland, piping plovers continued to breed at Craney Island but were absent for the third consecutive year at Grandview Nature Preserve.

Wilson's plovers exhibited a substantial decline (14%) to 37 pairs of breeding adults. Wilson's plover generally favored the same nesting habitats as piping plovers with most breeding occurring on the Assawoman Island (11 pairs) and Cedar Island (9 pairs) (Table 1). Large overwash areas were strongly preferred as nest sites by Wilson's plovers much as they were by piping plovers. Competition for nest sites between the two species was noticeable at times, but was relieved somewhat during brood-rearing by differences in prey selection.

Wilson's plover were found nesting in the southernmost tip of Assateague Island (2 pairs) for the second consecutive year. These may represent the northernmost range limit for this species on the Atlantic Coast. None were found nesting at mainland sites.

Nesting Success:

Fledgling productivity for Virginia was calculated as 1.65 chicks fledged per breeding pair of adults (Table 2), an improvement of 14% over the 1993 figure. This estimate represents the highest yet recorded in the state and exceeds the suggested population maintenance level (1.3-1.4) for the second consecutive year. Nesting success for piping plovers was monitored at six separate sites in Virginia this year comprising 60.4% of the Virginia breeding population, more than any other year since monitoring was initiated in 1987 (Table 3). Unusually high productivity at Chincoteague National Wildlife Refuge (53 chicks fledged, 2.12 chicks/pair) is attributed largely to the use of predator exclosures. Exclosures were used in all nesting areas on the refuge this year. Productivity was also surprisingly high at Cedar Island (1.8 chicks/pair). This year marks the first time that nesting success has been recorded on Cedar, which is largely under private ownership.

Productivity estimates were above 1.0 chicks/pair at all sites except Wallops Island. Wallops and Assawoman islands experienced the lowest productivity (0.67 and 1.08 respectively). Although the causes of chick losses could not be determined through weekly or bi-weekly visits, raccoons (Procyon lotor) were abundant and likely contributed to chick losses at many sites. Red fox (Vulpes vulpes) populations remained low in most areas, a probable result of mange observed in foxes over the previous two years.

At Craney Island all piping plover nesting areas were posted and thoroughly protected from disturbance during the breeding season through the cooperation of the Army Corps of Engineers personnel on site. Breeding success at Craney was hampered by tidal flooding early in the season and one nest was lost due to a red fox. Re-nesting was common. One predator enclosure was successfully employed at Craney by researchers from the College of William and Mary. Predator enclosures were deemed inappropriate for other nests there due to the nature of the nesting substrate.

Posting and symbolic fencing previously employed at the north end of Cedar Island and public access restrictions on portions of Assateague and Wallops islands were continued without change in this year.

Table 1. Results of Virginia piping plover and Wilson's plover survey, 1994.

Site	Piping Plover			Wilson's Plover		
	Pairs	Singles	Total	Pairs	Singles	Total
Assateague	19	0	38	2	0	4
Wallops	3	0	6	2	0	4
Assawoman	14	1	29	11	0	22
N. Metompkin	24	0	48	7	0	14
S. Metompkin	0	1	1	0	0	0
Cedar Sandbar	0	0	0	0	0	0
Cedar Island	13	0	26	9	1	19
Parramore	1	0	2	0	0	0
Hog	2	1	5	1	0	2
Cobb	2	0	4	0	0	0
Wreck	1	0	2	2	0	4
Ship Shoal	1	0	2	1	0	2
Myrtle	3	0	6	2	0	4
Smith	8	1	17	0	0	0
Fisherman	0	0	0	0	0	0
Craney	5	0	10	0	0	0
Grandview	0	0	0	0	0	0
	96	4	196	37	1	75

Table 2. Piping plover nesting success in Virginia, 1994.

Site	Breeding Pairs	No. of Chicks Fledged	Productivity Estimate
Assateague ^a	25	53	2.12
Metompkin ^b	4	5	1.25
Wallops ^b	3	2	0.67
Assawoman ^b	12	13	1.08
Cedar ^c	10	18	1.80
Craney ^d	4	5	1.25

^a Data from I. Ailes

^b Data from R. Cross

^c Data from D. Custis

^d Data from R. Beck

Table 3. Piping plover productivity estimates from Virginia 1987-1994

	1987	1988	1989	1990	1991	1992	1993	1994
Metompkin	1.05 (19)	1.26 (30)					1.75 (4)	1.25 (4)
Assateague	0.19 (46)	0.84 (32)	1.13 (32)	0.57 (42)	0.79 (43)	0.53 (36)	1.07 (27)	2.12 (25)
Assawoman							2.00 (10)	1.08 (12)
Wallops						1.25 (4)	1.33 (3)	0.67 (3)
Grandview					1.0 (2)			
Craney					3.0 (2)		1.40 (5)	1.25 (4)
Cedar								1.80 (10)
VA Prod. Estimate		1.02	1.16	0.65	0.88	0.59	1.45	1.65
Pairs Included		62	32	42	47	40	49	58
VA Pop. Estimate	100	103	121	125	131	97	106	96