



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Alamosa-Monte Vista National Wildlife Refuge
9383 El Rancho Lane
Alamosa, Colorado 81101

September 14, 1994

MEMORANDUM

TO: Refuge Files and Steve Berlinger, Refuge Manager,
Alamosa-Monte Vista NWR

FROM: R. Garcia, Wildlife Biologist, Alamosa-Monte Vista NWR

SUBJECT: Duck Production on the Monte Vista NWR

CC: R. Schnaderbeck, Alamosa
J. Cornely, Denver

The following summary of 1994 duck production on the Monte Vista NWR (MVNWR) is fashioned from similar summaries from previous years.

In 1994 a total of 107 nests were located on the transects which sample approximately 2.9% of the entire refuge. The total number of nests located represents a decline of 30% from the past 29 year average of 152 nests located. However, when comparing the 1994 data to that of past years (1981-1985 and 1988-1993) when equal acreages (337) were sampled, it represents a decline of only 7% from the average of 115 nests located. Fate determinations were made for 106 nests, one nest could not be relocated and therefore was excluded from analysis.

Nest density

Having sampled 337 acres and finding 107 nests, nest density 0.318 nests/acre, or 203.2 nests/mi². Nest density decreased 8% from the past 29-yr average of 0.34 nests/acre (221 nests/mi²). See attached map for distribution of nests found on MVWNR.

Nest Success

Apparent nest success (successful nests/total nests of known fate) was 59% in 1994, representing a 23% increase from the past 29-yr (1964-93) average of 48.0% (range 23-77). Mayfield nest success was calculated at 47.4%, using 68 (usable) nest records. This excluded 39 nests from the original 107 because; 1 was not relocated, 5 were abandoned (investigator related), and 33 were found already terminated.

Nests on the transects that were not successful consisted of 35 (85%) destroyed by predators, 3 (7%) abandoned, and 3 (7%) flooded, although it is likely that some of the predated nests had also been flooded before predation occurred. In 1994 (for the 4th consecutive year) the number of unsuccessful nests due to predation has been the greatest recorded in transect history, representing a 64% increase from the past 29 year average of 30.8%. Predator destroyed nests were by; raven 20(57%), skunk 3(9%), weasel 2(6%), coyote 1(3%), raccoon 1(3%), and unknown predators 8(23%). This is typical of those years in the past with more intensive predator control efforts carried out, in that the harder to control avian predators are accountable for the majority of the destroyed nests. It is likely that most of the unknown predators may have been coyotes.

The number of unsuccessful nests due to flooding was 3(7%). This was similar to the past 29-yr average of 5%.

The number of unsuccessful nests due to abandonment was 3(7%) which was below the past 29-yr average of 11%. This figure does not include investigator related abandonments.

Species Composition

Species composition of nesting ducks on MVNWR consisted of 50% mallard, 19% teal sp., 15% gadwall, 7% redhead, 5% shoveler, 3% pintail, and 2% ruddy. The past 29 year average species composition for the refuge is 59% mallard, 17% teal sp., 11% pintail, 8% gadwall, 3% shoveler, and 2% redhead.

Nesting Cover

Nesting cover selected by ducks was similar to previous years with 70% in baltic rush, 12% in cattails, 7% in greasewood, 6% in grasses, 3% in weeds, 2% in whitetop, and 1% in all other species combined. The past 29 year average preferred nesting cover is 66% baltic rush, 14% greasewood, 4% cattail, 4% grasses, 4% weeds, 3% saltgrass, 1% spikerush, and 1% sedge sp..

Overall Production

Estimated annual production on the refuge is calculated based on data from transects as well as brood surveys. In 1994 107 nests were found in the 337 acres that were sampled. There are approximately 11,727 acres of the refuge that are available as nesting habitat. Given this, there were approximately 3,723 duck nests on the refuge in 1994. With apparent success at 59%, there were an estimated 2,197 successful nests. The average brood size of class IIc and III broods observed during July and August was 6.1 young/brood. Multiplying average brood size (class IIc and III) by estimated number of successful nests yields approximately 13,402 ducks produced to flight stage.

SUMMARY

1994 - 13,402 ducks produced to flight stage. (26.33% hatchling to fledgling loss) = 18,191 hatchlings / average clutch size of 8.28 = 2,197 successful nests, which is 59% of the 3,723 total nests x 2 breeding ducks per nest = 7,447 breeding ducks on the refuge.

APPARENT NEST SUCCESS, NEST DENSITY
AND NUMBER OF DUCKS PRODUCED
ANNUALLY ON MONTE VISTA NWR
1964-1994

<u>YEAR</u>	<u>PERCENT NEST SUCCESS</u>	<u>* AVG. DENSITY</u>	<u># DUCKS PRODUCED</u>
1964	55 (55.0)	258 (258)	13,976 (13,976)
1965	56 (55.5)	210 (234)	15,101 (14,539)
1966	77 (62.7)	257 (242)	22,888 (17,321)
1967	62 (62.5)	241 (242)	20,133 (18,025)
1968	54 (60.8)	312 (256)	18,120 (18,044)
1969	62 (61.0)	297 (263)	24,247 (19,078)
1970	48 (59.1)	296 (267)	19,536 (19,143)
1971	38 (56.5)	288 (270)	13,942 (18,493)
1972	48 (55.6)	173 (259)	12,299 (17,805)
1973	49 (54.9)	326 (266)	7,920 (16,816)
1974	32 (52.8)	149 (255)	5,274 (15,767)
1975	43 (52.0)	89 (242)	4,570 (14,834)
1976	39 (51.0)	130 (233)	2,849 (13,915)
** 1977	12 (48.2)	- -	1.123 (13,002)
1978	28 (46.9)	75 (222)	2,135 (12,277)
1979	42 (46.6)	72 (212)	5.681 (11.865)
1980	37 (46.0)	176 (209)	8,466 (11,665)
1981	42 (45.8)	198 (209)	12,600 (11,717)
1982	49 (45.9)	209 (209)	13,525 (11,812)
1983	48 (46.1)	217 (209)	13,511 (11,897)
1984	52 (46.3)	285 (213)	20,576 (12,310)
1985	65 (47.2)	289 (216)	18,078 (12,573)
1986	65 (48.0)	257 (218)	22,269 (12,994)
1987	65 (48.7)	342 (224)	26,584 (13,560)
1988	55 (48.9)	285 (226)	20,532 (13,839)
1989	58 (49.3)	247 (227)	17,243 (13,970)
1990	50 (49.3)	171 (225)	8,366 (13,762)
1991	23 (48.4)	148 (222)	3,732 (13,404)
1992	35 (47.9)	180 (221)	7,716 (13,208)
1993	52 (48.0)	177 (221)	10,434 (13,116)
1994	59 (48.4)	203 (220)	13,402 (13,125)

* Estimated nest density is calculated in nests/square mile.

** Transects were not run in 1977, production based on pair and brood surveys.

current year (running average)

NUMBER OF NESTS FOUND ON TRANSECTS
ON A UNIT BASIS
1988 -1994

<u>UNIT</u>	<u>1988</u>	<u>1989</u>	<i>New System</i> <u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
1	2	1	1	3	7	5	3
2	2	1	0	1	3	2	1
3	23	23	3	16	16	11	14
4	3	14	5	6	5	1	4
5	1	0	0	0	0	0	2
6	10	4	4	3	1	6	1
7	13	19	8	6	8	3	3
8	9	5	10	2	6	6	0
9	32	7	37	22	20	25	29
10	8	3	4	5	5	3	7
11	1	2	2	1	2	3	2
14	4	1	0	1	1	2	3
15	2	10	0	2	2	1	1
16	7	10	4	0	3	4	3
17	11	2	2	3	3	7	7
18	11	17	4	3	5	10	20
19	1	4	0	1	1	0	0
20	4	1	1	2	1	1	0
21	5	3	1	1	1	0	0
22	2	1	1	0	0	0	0
23	0	1	1	0	0	0	2
24	7	4	2	0	5	3	5
TOTAL	158	133	90	78	95	93	107

