

## 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/  $\rm mi^2$ . Nest density decreased 8% from the past 29-yr average of 0.34 nests/acre (221 nests/ $\rm mi^2$ ). 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> 1964 1965 1966 1967	PERCENT  NEST SUCCESS  55 (55.0)  56 (55.5)  77 (62.7)  62 (62.5)	* AVG. <u>DENSITY</u> 258 (258) 210 (234) 257 (242) 241 (242)	# DUCKS PRODUCED 13,976 (13,976) 15,101 (14,539) 22,888 (17,321) 20,133 (18,025)
	1968 1969 1970 1971 1972 1973	54 (60.8) 62 (61.0) 48 (59.1) 38 (56.5) 48 (55.6) 49 (54.9)	312 (256) 297 (263) 296 (267) 288 (270) 173 (259) 326 (266)	18,120 (18,044) 24,247 (19,078) 19,536 (19,143) 13,942 (18,493) 12,299 (17,805) 7,920 (16,816)
**	1974 1975 1976 1977	32 (52.8) 43 (52.0) 39 (51.0) 12 (48.2)	149 (255) 89 (242) 130 (233)	5,274 (15,767) 4,570 (14,834) 2,849 (13,915) 1.123 (13,002)
	1978 1979 1980 1981 1982 1983 1984 1985	28 (46.9) 42 (46.6) 37 (46.0) 42 (45.8) 49 (45.9) 48 (46.1) 52 (46.3) 65 (47.2) 65 (48.0)	75 (222) 72 (212) 176 (209) 198 (209) 209 (209) 217 (209) 285 (213) 289 (216) 257 (218)	2,135 (12,277) 5.681 (11.865) 8,466 (11,665) 12,600 (11,717) 13,525 (11,812) 13,511 (11,897) 20,576 (12,310) 18,078 (12,573) 22,269 (12,994)
	1987 1988 1989 1990 1991 1992 1993	65 (48.7) 55 (48.9) 58 (49.3) 50 (49.3) 23 (48.4) 35 (47.9) 52 (48.0) 59 (48.4)	342 (224) 285 (226) 247 (227) 171 (225) 148 (222) 180 (221) 177 (221) 203 (220)	26,584 (13,560) 20,532 (13,839) 17,243 (13,970) 8,366 (13,762) 3,732 (13,404) 7,716 (13,208) 10,434 (13,116) 13,402 (13,125)

<sup>\*</sup> Estimated nest density is calculated in nests/square mile.

current year (running average)

<sup>\*\*</sup> Transects were not run in 1977, production based on pair and brood surveys.

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

	-		Nun Syden				
UNIT	1988	1989	1990	1991	1992	1993	1994
1 2 3 4 5 6 7 8 9 0 11 14 15 16 7 18 19 19 20 12 22 23 24	2 23 3 1 10 13 9 32 8 1 4 2 7 11 11 1 4 5 2 0 7	1 1 23 14 0 4 9 5 7 3 2 1 0 10 2 17 4 1 3 1 4 1 3 1 4 1 4 1 4 1 4 1 4 1 4 1	1 0 3 5 0 4 8 10 3 7 4 2 0 0 4 2 4 0 1 1 1 1 2 2	3 16 6 0 3 6 2 2 5 1 1 2 0 0 0 0 0 0 0 0 0 0	7365018605212335111005	5 2 1 1 1 0 6 3 6 5 3 3 2 1 4 7 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 1 14 4 2 1 3 0 9 7 2 3 1 3 7 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
TOTAL	158	133	90	78	95	93	107

#### MONTE VISTA NATIONAL WILDLIFE REFUGE RIO GRANDE AND ALAMOSA COUNTIES, COLORADO CONTED STATES . ... UNITED STATES DEPORTMENT OF THE INTERNET FIEH MO ENDLIFE SERVES R7E R8E RBE 100.10 100"04" R9E 5 87 F 1523 Call + 114 14.6 VICIBILY MAR \*\*\*\*\*\*\*\* REFUGE BOUNDARY 00 Transcet 37" DO Chillo 7 38 N A T 133 137 14 37 37 148not 17 Unit 16 Unit15 N N SEVERAME ROAD 109 113 117 151 125 93 97 Int 105 Unitao 37" 28 77 .. 87 Transact - 106°10' R8E 105"04" R7E RBE R9E CONFILED IN SURVEYS AND MAPS FROM SURVEYS BY THE B LM. U.S.G.S. AND F W.S. NEW MEXICO PRINCIPAL MERIDIAN DIGLINATION THE PERSON NAMED IN THE PE DENVER COLORADO MANUALY 1059 6R CO. 450 401

### Waterfowl Production Survey

server R. Garaca	Date 6/0/94 Unit #	18 Transect # 16
FIRST VISIT		SECOND VISIT-Fate
	COVER TYPE	
Species Redheal	(circle dominant cover) Sx Willow	Date 7176196 .
Nest # 333 Status (check one)	Sve Greasewood Crx Rabbit brush Dst Salt grass	(check one)
Hatched Abandoned	Gx Grass species MoF Sweetclover	Hatch  Megg hatch
Destroyed	Wx Weed species Jba Baltic rush	2# egg remai
# eggs 18d Inc. stage	Cx Sedge Ex Spikerush	Abandoned
# parasitic eggs	Ex Spikerush CTIa Cattail Sva Bullrush	☐ Flosded
Dist. to standing H <sub>2</sub> 0 Oft	Other	Destroyed - Paven/magpi
Soil Surface (check one)		□ skank □ Raccoon
Moist Ficoded		Coyote
Aerial Cover (check one)		Other
☐ A. 100-75% ☐ B. 75-50% ☐	c. 50-25%	
41.1	Loca	tion Sketch
tes Next approx Q' E.F.	Unit # 18	(A)N
	Transect # 107 Mz Nest # 333 is 10	cated Tak
	25ft / in _Nor	
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	of Transect line	
	Grazing Cell	- 1
	Paddook #	
		Gove St.
		At 283° Reading
		1.66.15
and the state of t	E	
Compute Mayfield  146 Species ADD 134 Tuis	tiation date	