

1955

Duck Nesting Survey Report, Raymond Fleetwood

Recd. July 1, 55

The Director, Washington, D. C.

June 28, 1955

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Acting Regional Director, Albuquerque, New Mexico

Predator Control - Monte Vista Refuge

Mr. Salyer's memorandum of June 21, 1955, referred to predator damage on duck nesting at Monte Vista Refuge as indicated in Biologist Fleetwood's itinerary for May 29-June 4.

Apparently Mr. Fleetwood's itinerary covered the period of study on the worst unit on the refuge this year. The general picture is markedly improved over the predator losses of the past two years, with the exception of Unit 14. We are transmitting copy of Mr. Fleetwood's nesting study report for a better understanding of this season's results.

An active predator control campaign was carried on last winter and spring on the lands then under our control. Contrary to Mr. Fleetwood's opinion expressed in his report, we believe the area should be poisoned every spring, the extent to be determined by the prevalence of sign. The new lands should also be treated heavily as they are acquired.

Other items touched on in Mr. Fleetwood's report will be followed up with the refuge manager.

K. C. Kartchner

cc: ☒ Monte Vista Refuge w/ Mr. Fleetwood's report

Mr. Fleetwood, Bosque Refuge

DUCK NESTING AND PREDATION STUDIES ON THE MONTE VISTA NAT'L WILDLIFE REFUGE
May 30 - June 10, 1955

Please forward
to Mr. Bryant.

COVER TYPES AND NESTING

The studies for the past three years, show that black rush or wire grass Juncus ater is the dominant nesting cover for all the duck species that nest on the refuge but this does not imply that it is the preferred cover type, if extensive areas of other cover types were available. More use is made of this cover type for nesting by necessity rather than preference on the part of the duck species. The minimum and maximum use for this cover type are 55 and 75% respectively. This year, 58% of the nests were found in this cover type and this is 6% below the 3 year average of 65% (See table 9). The next cover type on the refuge, that is used by nesting ducks, are the sedges Carex of 6 or more species. However there has been a drop from the maximum of 19% in 1953 to 10% in 1955. This year's use of this cover type is about 3% below the 3 year average of 11%. The drop in usage of this cover type is understandable when it is known, that it is the current year's growth which is the preferred nesting cover and not the dry and dead stems and leaves, although a few nests have been found in last year's growth. A cover type that took a jump this year, was cattail. For 1953 and 1954 the percentages of nests located in this cover type were 2.1% and 1.0% respectively. This year, 19 nests or 11% of all the nests were found in this cover type and this is a much higher percentage than the 3 year average of 4%. The increased usage of this cover type, may be due to the inadequacy of other cover types for nesting purposes or to, the dry conditions of the cattail patches, which make them more favorable for nest construction. It is estimated that there are approximately 3 acres of cattails on the units covered by this survey so this would make a density of 2 nests per acre for this cover type, however, there was one specific acre of cattail that had 5 duck nests.

Grass has remained rather constant in usage, as nesting cover for the 3 year study as there has been less than 1% change. The 3 year average is approx. 6%. Greasewood which provided nesting cover for 9.2% of the nests in 1953, dropped to less than 1% in 1954 but this year there was a slight increase of usage or approx. 1% which is above the 3 year average of 3.9%. Rabbitbush which started with 2.8% usage in 1953 has dropped to less than 1%.

Woods, chiefly fireweed Kochia scoparia and petioled sunflower Helianthus petiolaris showed an increase in nesting usage from 5% last year to 7% this year. The 3 year average is 3%. The sunflowers are found principally, on the north fork of Spring creek while the fireweed, a pioneer plant, is found growing on dikes, stacking lots and spoil banks. Some grass growing in these woods provide good nesting sites, and it is believed that greater use would be made of this cover type, if the woods were taller and thicker.

Duck nests have been found destroyed by predators in all cover types so it is impossible to say, that one cover type has an advantage in protection over any other cover type.

CONDITION OF COVER TYPES

Last year's drought and last winter's snows, plus the current cool spring have affected the cover types on the Monte Vista refuge and this, in turn, has affected duck nesting on the refuge to a certain degree. It might be stated that long and intensive grazing on the Berry land practically eliminated nesting cover so there can not be many duck nests on this land. During the two past years, a number of nests have been found on the Berry land especially along the Empire canal and ditches and fences.

Stock has been excluded from Unit #1 for 2 years and with adequate moisture and growing conditions, there should be an excellent vegetative cover on the area. Instead, the principal species, namely; black rush or "wire grass" *Juncus ater* is thin, short and inadequate for nesting cover, especially on the drier sites. On sites with more moisture, normal growth resulted and there was sufficient cover for the concealment of duck nest. The cool spring has retarded the current growth of this species, grasses, sedges, sunflowers, firweed and New Mexican checkermallow *Sidalcea neomexicana*, as well as many other species. Grasses have been affected the same way as black rush, especially at the head of the south fork of Spring creek. Not only have grasses and black rush died due to the lack of moisture but rabbitbush also. In previous years from 8 to 12 duck nests have been found in this area. This year one nest was found. In previous years, there were nests over the entire unit with a majority concentrated about the headwaters of the two forks. This year practically all the nests were located in the headwaters. The dense stand of sedges *Carex* at the headwaters of the north fork of Spring creek had not grown sufficiently for nesting cover, consequently less than half of a dozen nests were found in last year's growth. The old growth of sedges, grasses and rush, especially in dense stands was blown into rolling masses or hummocks by last winter's winds. These hummocks of vegetation do not have openings and being so firm, ducks are unable to conceal nests. It might be desirable to use a hay rake and rake in the opposite direction, to that, in which the vegetation was blown, so as to open and fluff up the vegetation to make concealment easier. Extensive areas of hummocky vegetation were found on units 1, 9, 10, 11, 12 and 14.

Other areas that were used quite extensively last year, were ruined as nesting areas this spring by irrigation waters. This was especially true in units 12 and a portion of unit # 10. The hay meadows have never been used extensively by ducks as nesting sites due to the irrigations at the time nesting starts. The grazing units, namely units 9, 11 and 14 have a vegetative cover similar to that of the hay meadows except in sloughs where there are patches of cattails, round-stem bulrush and arrow leaf.

A large majority of the plant species in the study area are weeds. These, however, occupy less than $\frac{1}{2}$ of 1% of the area and they are limited to the higher channel banks, stacking lots and highway #15. Their use for nesting cover depends almost entirely on the abundance of old plants as there is little current growth at the beginning of the nesting season. The best cover of this type was along highway #15 but it was not searched for nests. This cover type was chiefly used by the mallard.

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Greenswood, the principal shrub in the San Luis valley and on the refuge, occurs on the higher and drier sites. When wells are drilled near the patches of greenswood, some of the water will run through the shrubs and eventually cause their death. Grasses come in and grow about the hummocks where the greenswood grew and by the nature of growth, there is an opening in the vegetation encircling the hummocks. These hummocks are excellent nesting sites and evidently the ducks thought so too, for several nests were found in hummocks in units 11 and 12. Last year horses grazing on unit #11 destroyed most of the nests. There was no spring grazing on the unit this year consequently several nests were found and hatched this year. This unit with the pond development plus the plant growth present will make this a choice unit of the refuge in the near future.

Drought conditions have affected the vegetative cover along fences and ditches and as a result concealment cover is insufficient so fewer nests were found along these features.

GRAZING AND DUCK NESTING

In my Report for 1953, mention was made to a triangular shaped piece of land on the Berry tract, that contained approx. one acre. The parcel of land had a dense stand of tufted hair grass Deschamnia caespitosa black rush Juncus ater and sedges Carax with a considerable amount of current growth among the old stems. The height and density of the vegetation made the area an ideal nesting site as evinced by 7 duck nest, one short-eared owl nest and one pheasant nest. In spite of the excellent cover every nest was destroyed by predators. A check of the area last year revealed that the area was heavily grazed the winter of 1953-54 and the cover was destroyed, consequently not a single nest was found on the area. Here is one instance where grazing ruined an excellent nesting site on the refuge but field studies do not show that grazing, as it is managed, on the Monte Vista refuge has decreased the number of pairs nesting on the refuge nor has non-grazing increased the number of pairs of nesting ducks on the refuge. It is my belief that the winter elements affect the available nesting cover to a greater degree and detrimental affect, than limited grazing, during the winter season. Any grazing should be limited to fall and winter. Any grazing where ponds and pools have been made will be injurious to nesting cover around the ponds unless the ponds are fenced.

POND DEVELOPMENT AND DUCK NESTING

Since last year's field work on Monte Vista refuge, a large number of pools and ponds have been made near wells or other sources of water. Without question, the increased water supply due to the construction of these pools has increased the summer population of ducks and avocets. The banks around the pools are barren of vegetation and it may be years before there is sufficient cover on the banks and dikes for nesting purposes. However, some of the banks have been seeded and some species of native vegetation, especially greenswood seedlings were noted on some banks. Fireweed Kochia scoparia and sunflower Helianthus are pioneer plants and will be the first ones to appear on the banks and waste places. From the observation of vegetation along the Resettlement canal, five or more years may be required before adequate cover is obtained on the banks. However,

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the process revegetation may be hastened by the working of the banks with machinery, seeding and the planting of sedges and bulrushes around the margins of the ponds. There should be gentle slopes around the pond so that it would be easier for vegetation to become established. It would not be advisable to plant round-stem bulrush around the smaller ponds but the species could be used advantageously around the larger ponds such as those on units # 9 and 10. Not only would the species provide nesting sites after a few years growth but it would protect the dikes from wave and ice action. No doubt, these ponds will help in the survival of ducklings many of which are lost in traveling from nests to water where food is obtained. In some places ducks seem to have an intuition of the distance of their nests from water but on Monte Vista they seem to have lost this ability as nests are located irrespective of the distance from water.

PREDATORS, CONTROL AND DUCK NESTING

In spite of a magpie control program carried on last winter, in the vicinity of the refuge, little or no change in the numbers of magpies on the refuge, could be noted. However fewer birds were observed along the Monte Vista and Empire canals where conditions are to their liking.

The marsh hawk population appears to be normal and 10 nests were found this year. In addition 3 other nests with eggs either with broken or unattended eggs were found. It is believed that the female birds ate meat from animals that had been poisoned. Three marsh hawks were found dead near nests.

The most surprising thing, was the absence of the short-eared owl and their nests. Not a single individual was seen this year, whereas several individuals and 5 nests were observed last year and the year before.

The small rodent population such as chipmunks and meadow voles appeared to be about the same as last year. Jack rabbits were still dying from disease but the population appeared to be normal.

An occasional golden eagle and duck hawk were noted during the field work while the crow and raven appeared more frequently on the refuge than they did last year and the year before. Whenever one was observed it generally had a number of blackbirds chasing it. Only one nest found destroyed was attributed to the magpie and in this case the nest was near a magpie nest.

The chief predator, the skunk that has destroyed many nests and eggs on the refuge during the last two years has had its numbers reduced by a control program carried on last winter on all the units with the exception of 14 where approximately 61% of the nests were destroyed this year. For units # 1, 5, 6, 7, 8, 9, 10, 11, and 12 only 19% of the nests were destroyed. For all the units given above and unit #14, 33% of the nests were destroyed. This is considerable improvement over 1953 and 1954 when 77% and 65% of the nests were destroyed by predators respectively. Hatching success and predator were so out of line with the other units that separate tables were prepared. (See tables #1, 2, 3, 4, 5 & 6). There are two possible explanations. Unit #14 did not get the coverage during the control program, that the other units received or the skunks moved in from the outside after the population

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on the unit had been reduced by control measures. Why didn't they move into unit, a portion of which is surrounded by private land on three sides? In 1953, 92% of the eggs laid by ducks on the refuge, 1954 saw a slight drop to 89.3% were destroyed by predators. As a result of last winter's control program 24-2/3% of the eggs laid by ducks on the refuge were destroyed by predators. This is considerable improvement over the losses of 1953 and 1954. An effort should be made to reduce the skunk population on unit #11 this coming winter and once it is reduced to the present populations on the other units, there will be little loss of nests and eggs. A small loss of nests and eggs from predation is expected and can be borne by the ducks. Losses such as have occurred on the refuge for the last two years cannot continue with an expected buildup of the duck population. This control program on the refuge has done more to increase production on the refuge than any other management practice that has been employed on the refuge. It is not definitely known how long it will take the present skunk population to build up to a population that will be disastrous to the population of nesting ducks on the refuge. I believe that rigid control program will have to be carried out every four years. Future studies may reveal the frequency of control programs.

BIRD POPULATIONS

There are more ducks (estimated 140) on the Monte Vista refuge this year than there were last year or 1953. This probably is due to the increased water supply brought about by the construction of the ponds and impoundments. Avocets have doubled in number and it may not be many years until the black-necked stilt is nesting on the refuge. The banks around the ponds should make ideal nesting sites for both species. During field work this year, a half dozen or more dead ducks were found principally on unit #1 so there must be something killing the ducks. A dead hen was found within five feet of her nest containing 9 eggs on unit #10. There were many swallows on the refuge during migration, the principal species were barn, violet-green, cliff, tree and rough-winged, the last two species are the first records for the refuge.

The song bird population is normal with prospects of a more successful hatch, due to the elimination of skunks. A larger number of song bird nests containing eggs were seen this year than in 1953 and 1954, an indication that skunks have been destroying song bird eggs as well as pheasant and duck eggs. Should mention the discovery of 2 Wilson phalarope, 3 common snipe, 1 Am. bittern, 6 savannah sparrow and 5 meadowlark nests while searching for duck nests. So the predator control program last winter benefited nesting birds from the coot to the sparrow.

Although the starling may never be an abundant nesting bird on the refuge due to the scarcity of nesting sites, there is an increase in the number of nesting pairs around the refuge. As usual, a couple of pairs nested in the abandoned Rock Creek school building. One of another pair was seen carrying food about a mile north of the Rock Creek school building. The fourth pair nested on the farm about 1/2 mile east of the first cross-roads approx. a mile south of refuge headquarters. Other pairs were noted at Del Norte and 10 miles northwest of Monte Vista.

DUCK NESTING AND PREDATION STUDIES ON THE MONTE VISTA NATIONAL WILDLIFE REFUGE, May 30 - June 10, 1955

STATUS OF DUCK NESTS

During the period May 30 - June 10, 1955, the writer was assigned to the Monte Vista refuge to continue the nesting and predation studies that have been carried on for two years with special emphasis to detect trends and to evaluate changes in nesting on the refuge in terms of predator control and deferred controlled grazing and the development of ponds and impoundments.

Studies of the last two years revealed that the majority of duck nests were on these units # 1, 5, 7, 8, 9, 10, 11, 12 and 14. Due to the limited time for the studies this year, field work was confined to units #1, 5, 7, 8, 9, 10, 11, 12 and 14. On account of the extremely grazing of the Berry land last winter and this spring, very little cover was left for nesting ducks so no attention was given to this tract except a rapid hike along the Empire canal through the Berry land. Not a single duck or pheasant nest was found in the mile stretch. Neither were egg shells seen along the canal, whereas they were frequently seen along the same stretch of canal last year. Evidently the predator control program eliminated some of the skunks along the canal.

In 10 days of field work during the period May 31 - June 10, 1955 the writer succeeded in finding 172 duck nests of six species. The nests contained eggs being incubated, egg shells that indicated that they had been destroyed by predators, fragments, down and membranes which indicated that the eggs had hatched and eggs that had been deserted. Out of 172 nests, 50 or 29% of them had been destroyed by predators previous to their discovery by the writer. Membranes, in 24 or 14% of the 172 indicated that they had hatched prior to their discovery while 93 or 54% of the nests contained eggs being incubated at the time of their discovery. At the completion of field work the data on the nests is as follows; 62 nests or 36%, containing 477 eggs (41%) were being incubated, 58 or 34% of the nests containing 286 eggs (24%) had been destroyed by predators; 41 or 24% of the nests had hatched 296 or 25% of the eggs found. Ten nests or 5-3/4% containing 60 (5-1/3%) were deserted. Forty-four eggs were infertile or the young died in the shells or the eggs rolled out of the nests, 3-5/6% of all the eggs laid were in this category. The above data comprises all the units that were covered. When unit #14 is excluded the data is as follows; 45 or 48% of the nests which contained 361 (49-7/8%) eggs were being incubated at the completion of the survey; 10 or 10-7/9% of the nests which contained 51 or 7-1/9% of the eggs had been destroyed by predators; 33 or 35% of the nests which contained 239 (33%) eggs had hatched. Assuming that the present rate of predation and desertion continues throughout the nesting season 38 of the 45 nests being incubated, should hatch, and 318 of the 361 eggs being incubated should hatch and this would make the units exclusive of #14 producing 557 ducks.

Unit #1 which was considered as one of the best nesting areas on the refuge in 1953 because 37 nests were found it, was grazed the previous winter. In 1954 the same unit with grazing prohibited for a year or more produced 50 duck nests. This year only 28 duck nests were found on the unit, but this may be due to the 10 days of field work compared to 25 days in 1954 and 26 days in 1953, but even with this decrease in coverage, it is believed that 80% of the nests on the unit were found. Should the vegetation

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STATUS OF DUCK NESTS

grow rapidly after the middle of June, there could be a considerable number of nests due to the renesting of ducks which had lost nests to predators.

Unit #10 is another choice nesting area on the refuge and during the 25 days of field work in 1954, the writer found 54 duck nests. This year 32 nests were found during 10 days of field work and could the field work continued for an additional 15 days, it is believed that the number of nests on this unit would have exceeded last years number. This would hold true for units #1 and 14.

Unit #14, another choice nesting area had 105 duck nests last year as compared to 79 this year. Here again the time element may have played a part. It is believed that an additional 15 days of field work would have seen the number of nests equal to or exceed that of last year. The second week of June saw hot weather and vegetation in some of the sloughs on this unit probably made some rapid growth and no doubt some ducks will use the current growth for nesting sites. (See table 9)

Nests of six species of ducks were found on the study area consisting of units #1, 5, 7, 8, 9, 10, 11, 12, 13 & 14, that of the mallard most abundantly, 137 nests of this species being found, representing 79% of the total. Nests of the other ducks were found in the following number & percentages: pintail 14, (8%), blue-winged teal 4, (2%), shoveler 4, (2%), cinnamon teal 10, (5-5/6%), gadwall 3, (1-3/4%), thus a total of 172 nests were found and this number probably represents 80% of the nests on the area which would mean that there was a total population of about 215 of nesting ducks on the above units.

During the first year of field work on the Monte Vista refuge which amounted to 25, the average number of nests found per day was 5.7. In 1954, 25 days of field work yielded 256 nests or an average of 10.4. The maximum number of nests found in one day was 32. This year 38 nests was the maximum and 10 days of field work produced 172 nests with an average of 17.2 nests per day. Would like to state that a 125' rope with one end tied to an iron stake driven into the ground, was used for two days on an area that had been gone over by the strip method. Approx. 1.13 acres were covered at each circle and one day 37 acres was covered by this method. Twenty-three acres was covered the other day. Found about as many nests that had hatched or been destroyed as nests that were being incubated. Pheasants would sit tight and would not flush when the rope passed over the nest. Late in the day this method is not reliable as the ducks are more likely to be off the nest and feeding. Twenty-seven pheasant nests containing 215 eggs were found this year compared to 46 nests last year. Hatching success was much better this year than in either of the two previous years.

Respectfully Submitted,

Raymond J. Fleetwood
June 23, 1955

TABLE 1

UNIT #11 MONTE VISTA NATIONAL WILDLIFE REFUGE

Data compiled from the initial visits to the nests

Species	Misc. Nest	Eggs	No. Nests being Incubated	No. eggs being Incubated	No. nests preyed on	No. eggs preyed on	No. nests hatched	No. eggs hatched	No. nests deserted	No. eggs deserted
Mallard	1	9	15	89	35	162	4	30	2	11
Gadwall			2	19	0	0	1	7	0	0
Shoveler			4	41	0	0	0	0	0	0
Pintail			1	5	5	22	2	16	0	0
Cinnamon teal			3	16	4	25	1	4	0	0
Blue-winged teal			0	0	0	0	0	0	0	0

The numbers in () are percentages

25(32) 166(364) 44(56) 209(47) 8(104) 57(13) 2(24) 11(24)

TABLE 2

UNITS #1, 5, 7, 8, 9, 10, 11, 12 MONTE VISTA NATIONAL WILDLIFE REFUGE
June 1955

Mallard	1	9	61	195	6	20	12	80	1	8
Gadwall			0	0	0	0	0	0	0	0
Shoveler			0	0	0	0	0	0	0	0
Pintail			2	14	0	0	3	20	1	2
Cinnamon teal			2	14	0	0	0	0	0	0
Blue-winged teal			3	24	0	0	1	6	0	0

The numbers in () are percentages

1(1-1/9)9(13) 68(72) 548(79) 6(61/2) 20(2-3/4)16(17) 106(15-1/3) 2(2-1/7) 10(11)

TABLE 3

DUCK NESTING SURVEY, MONTE VISTA NATIONAL WILDLIFE REFUGE

June 1955 Data compiled from the initial visits to the nests

Species	No. nests being incubated	No. eggs being incubated	No. nests preyed on	No. eggs preyed on	No. nests hatched	No. eggs hatched	No. nests deserted	No. eggs deserted	Misc.	Unknown not hatched
Mallard	76	504	41	182	16	110	3	9	1	17
Cadwall	2	19	0	0	1	7	0	0	0	0
Shoveler	4	41	0	0	0	0	0	0	0	0
Pintail	3	19	5	22	5	36	1	2	0	3
Cinnamon teal	5	30	4	25	1	4	0	0	0	6
Blue-winged teal	3	24	0	0	1	6	0	0	0	2
Totals	93(94)	717(63½)	50(29)	229(20-1/3)	21(11)	163(11½)	4(2-1/4)	11(1)	1	26(2½)

The numbers in () are percentages

TABLE 4

UNIT #14, DUCK NESTING SURVEY, MONTE VISTA NATIONAL WILDLIFE REFUGE

Data at completion of survey June 10, 1955

Species	No. nests being incubated	No. eggs being incubated	No. nests preyed on	No. eggs preyed on	No nests hatched	No eggs hatched	No. nests deserted	No eggs deserted	Miss.
Mallard	10	60	38	181	4	30	4	23	
Gadwall	1	6	1	7	1	7	0	0	
Shoveler	3	35	0	0	0	0	1	7	
Pintail	1	8	5	22	2	16	0	0	
Cinnamon teal	2	11	4	25	1	4	1	1	
Blue-winged teal	0	0	0	0	0	0	0	0	

Totals	17(21%)	116(26%)	48(60-3/4)	235(53%)	8(10%)	57(13)	6(7%)	31(7)	
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The numbers in () are percentages

TABLE 5

UNITS, #1, 5, 7, 8, 9, 10, 11 & 12 Monte Vista Nat'l. Wildlife Refuge

Data at completion of survey June 10, 1955

Mallard	38	297	10	51	29	213	3	27	1
Gadwall	0	0	0	0	0	0	0	0	0
Shoveler	0	0	0	0	0	0	0	0	0
Pintail	2	17	0	0	3	20	1	2	0
Cinnamon teal	2	14	0	0	0	0	0	0	0
Blue-winged teal	3	33	0	0	1	6	0	0	0
Totals	45(48%)	361(49-7/8)	10(10-7/9)	51(7-1/9)	33(35%)	239(33)	4(4-1/3)	29(4)	1(1%)

The numbers in () are percentages

TABLE 6

DUCK NESTING SURVEY, MONTE VISTA NATIONAL WILDLIFE REFUGE
Data at completion of Survey June 10, 1955

Species	No. nests being incubated	No. eggs being incubated	No. nests preyed on	No. eggs preyed on	No. nests hatched	No. eggs hatched	No. nests deserted	No. eggs deserted	Misc. nests	Unknown Not hatched eggs
Mallard	48	357	48	232	33	243	7	50	1	32
Gadwall	1	6	1	7	1	7	0	0	0	0
Shoveler	3	35	0	0	0	0	1	7	0	0
Pintail	3	21	5	22	5	36	1	2	0	4
Cinnamon teal	4	25	4	25	1	4	1	1	0	6
Blue-winged teal	3	33	0	0	1	6	0	0	0	2
Totals	62(36)	477(41)	58(33-3/4)	286(24-2/3)	41(24)	296(25 1/4)	10(5-3/4)	60	1(2/3)	44 (3-5/6)

TABLE 7

Duck Nesting Survey, Monte Vista National Wildlife Refuge, June 1955

Locations of nests by cover types

Species	Cattail	Sedge (several species)	Junco (wire grass)	Grass	Sunflower	Kochia (fireweed)	Grease wood	Other vegetation	Misc.	Total no. nests
Pintail	1	5	7(50)	1						14(84)
Mallard	18(13-1/5)	12(7)	81(59 1/2)	6(4-1/3)	6(4-1/3)	5	6(4-1/3)	1	2	137(79)
Gadwall			3(100)							3
Shoveler		1	3(75)	1						4
Cinnamon teal			7(70)	3						(5-5/6) 10
Blue-winged teal			2(50)	1			1			4
Totals	19(11)	18(10 1/2)	100(58 1/2)	11(6-1/3)	6(4)	5(3)	7(4-1/8)	1(2/3)	2(1 1/4)	172

TABLE 8 **DUCK NESTING SURVEYS NORTH VICTA NATIONAL WILDLIFE REFUGE**
Comparison of 1953 and 1954 nesting densities on
the principal nesting units

Unit	Number of duck nests 1953	Number of duck nests 1954	Number of duck nests 1955
1	57	50	26
5		8	2
7		6	5
8		0	3
9		8	0
10		54	32
11		6	6
12		8	17
13		5	0
14		105	79
10	37*	237*	172

* Does not include all the nests found as some of the nests were on the Berry land and other units.

TABLE VIII. Nesting Data for 253 duck nests on the
Monte Vista Refuge, June 4- July 15, 1954

	Mallard	Pintail	Gadwall	Cin. Teal	Shoveler	Total
No. of nests	213	16	13	9	2	253
No. of eggs	1524	94	108	58	15	1794
Percent of nest success	24.4	31.2	30.6	44.4	50.0	26.1
Average No. of eggs	7.2	5.9	8.0	6.4	6.5	7.0
Percent egg success	32.5	38.3	38.0	35.5	53.8	27.3

Sixty-six duck nests hatched wholly or in part, either before or after the nests were found. These nests contained 489 eggs that hatched successfully but 5 ducklings are known to have died in the nests so, in so far as known 484 ducklings left the nests. Nine of the 66 nests had 16 infertile eggs so the total number of eggs in the nests was 505 so infertile eggs caused a loss of 3.2% in production.

One hundred and eighty-seven nest containing and estimated 1305 eggs were either destroyed before or after the nests were found, in fact 38 or 48% of the 79 nests found with "good" eggs, were destroyed later. Sufficient evidence at 162 nests placed the guilt for the damage, on the skunk, in fact 95.2% of the destroyed nests must be charged to this predator.

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FISH AND GAME

TABLE VI. QUALITY OF COVER IN RELATION TO THE PART OF
240 DUCK NESTS OF FIVE SPECIES ON THE MONTES VIEJA
NATIONAL WILDLIFE REFUGE June 4 - July 15, 1934

Species	Poor	Fair	Good	Excellent	Total
Hallard	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
14	23	17	48	20	53
5				5	24
204					
Pintail	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
1	1	5	2	3	1
13					
Gadwall	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
1	2	3	2	2	2
12					
Cinnamon Teal	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
1	2	3	3	3	9
9					
Shorelark	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
1	1	1	1	1	2
2					
Total No.	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
16	26	18	58	25	62
11	24	24	24	24	240
240					
Quality of Cover	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
38.1	61.9	23.7	76.3	28.7	71.3
31.4	68.6	31.4	68.6	31.4	68.6
68.6					
Poor	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
42	58.1	28.7	71.3	31.4	68.6
76.3	31.4	68.6	31.4	68.6	31.4
68.6					
Fair	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
76	25.7	71.3	31.4	68.6	31.4
68.6	31.4	68.6	31.4	68.6	31.4
31.4					
Good	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
87	28.7	71.3	31.4	68.6	31.4
68.6	31.4	68.6	31.4	68.6	31.4
31.4					
Excellent	Nests Hatched	Nests Destroyed by Predators	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.	Nests Hatched Destroyed by Pred.
35	31.4	68.6	31.4	68.6	31.4
68.6	31.4	68.6	31.4	68.6	31.4
31.4					

TABLE VII. Location of Nests in Respect to Quality of Cover,
240 Nests; Nests Hatched and Destroyed by Predators



GAME AND FISH COMMISSION

DENVER, COLORADO

THOMAS L. KIMBALL
EXECUTIVE DIRECTOR

Rm. 245 - Forestry Building
Colorado A & M College
Ft. Collins, Colorado

June 13, 1955

Mr. Charles R. Bryant, Refuge Manager
Monte Vista National Wildlife Refuge
Box 566
Monte Vista, Colorado

Dear Pete:

I had intended to contact you the last time we were down, however, the weather was bad and we had to get out of the Valley and into South Park. We didn't make the breeding pair counts on schedule, as our plane came out second best in a wind storm at Fort Morgan. Therefore, our counts were delayed a week.

I am enclosing a copy of the current breeding pair report. You will note that breeding pairs are definitely up in the San Luis Valley. Waterfowl conditions look very good there with more water than was present last year, and also more breeding pairs. I will also be sending you a copy of the waterfowl kill survey as soon as it is mimeographed.

We hope to be down either next week or the following, with our first load of goslings. These will be placed on the Shutte property which will be closed to public trespassing for the summer.

It looks like we will not have as many goslings for this initial plant as I had originally hoped. However, we are doing the best that we can.

While the fellows are down with the goslings, I wonder if it would be possible for them to pick up the transportation cages. As I understand it, our birds will be ready in Montana the week of July 4-9. We would be able to have your pens back to you the following week. If this conflicts with your plans, please advise so that I can make other arrangements.

Thanks a lot. Hope to see you soon.

Yours truly,

A handwritten signature in cursive script that reads "Jack".

Jack R. Grieb
Leader, Waterfowl Project

JRG/kk
Enclosure

Monte Vista National Wildlife Refuge
P.O. Box 566
Monte Vista, Colorado

July 14, 1955

Mr. Jack R. Grieb, Wildlife Statistician
Rm. 245 - Forestry Building
Colorado A & M College
Ft. Collins, Colorado

Dear Jack:

Reference is made to your letter of July 8th, regarding information on nesting conditions here in the valley at the present time. Please be advised that nesting this year has been very good here on the refuge and from broods noticed when traveling throughout the valley we assume that nesting valley-wide has been better than in past years.

Fleetwood only spent two weeks on the area and during that time he found 166 nests of which approximately 10% had been destroyed by predators. We did have a higher loss on one of the units but this was probably due to movement into the area from adjoining lands.

It is expected that the best time for banding young birds would be on or about August 1 and we have two areas on the refuge where banding could be carried on.

We had planned to make a trip to Bear River refuge this year for additional geese but as we will not be able to get geese at this unit this year we will not need our crate and you can keep it until such time as you are through with it.

We have picked up an additional 18 birds from a local fellow who has a class A permit. These birds nested this year but due to the small enclosure in which he had them all of the eggs were destroyed with the exception of one and we did secure this gosling.

I hope that you get along okay with pinioning your birds by the method that we recommended. I have tried a new method on the 18 birds which we received and I feel it is more desirable and I will let you know how we come out with this method when you come to the refuge.

I will be on vacation from July 16th, through August 1st. I would like to get together with you when you are down here.

Sincerely yours,

Charles R. Bryant
Refuge Manager

CRB:vfp



GAME AND FISH COMMISSION

DENVER, COLORADO

THOMAS L. KIMBALL
EXECUTIVE DIRECTOR

Rm. 245 - Forestry Building
Colorado A & M College
Ft. Collins, Colorado

July 8, 1955

Mr. Pete Bryant, Refuge Manager
Monte Vista National Wildlife Refuge
Box 566
Monte Vista, Colorado

Dear Pete:

Although we planned to look you up in several weeks when we come down to begin banding activities, I need any information you may have on nesting conditions in the Valley before then. Would you please drop me a line at your earliest convenience giving all such information and also any preliminary data from Fleetwood's report to the Service.

We just returned from the Bowdoin Refuge with our 75 geese and while it was a rough trip, we made out very well. We only lost one goose in transit, and this bird was probably injured in trapping operations. All the other birds came through in good shape. Incidentally, we pinioned all these birds by the method you recommended and it seemed to go off very well.

I have a lead on some more geese in North Dakota being raised by a private individual and it looks like we will pick up about 45^{sub} adults. I had hoped to get some of his goslings, but he pinioned these before we could get an answer back to him. I had planned to put these birds down on the Shutte property with the others. It is still possible that we may get some more goslings, but our chances are pretty slim now.

I would like to thank you for the use of your cage. I am sure that that is the main reason the birds came through the trip so well. If it is all right with you, we will keep the cage a while longer until we see whether we will need it to go after the North Dakota geese, otherwise we will bring it down probably about the first of September. If this is not satisfactory, please let me know and we will have it down any time you want.

See you soon.

Yours truly,

Jack
Jack H. Grieb
Wildlife Statistician

JRG/kk