

1966

Form D1

Waterfowl Production

Surveys

Units 1-23

UNIT I

WATERFOUL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year:

1966

DA RUELLE

Unit No.	Transect No.	First Observation					Nest Status					Cover Type										Fate												
		Date	Nest No.	Species	No. Eggs	Laying Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	Nb. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)
1	57	6/14	505	UX	8	X	X												X						X	X	7-15-66	X						
1	68	6/14	454	Co	5	X									X										X	X	7-15-66	X						
1	67		508	UX	1					X									X					X	X	6/14							only one returned	
1	53	6-16	510	UX	?														X					X	X	6-16								
1	53	6-16	511	UX	?					X									X					X	X	6-16								

Field Form

WATERFOOL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

Unit 2

Unit No.	Transect No.	First Observation			Nest Status							Cover Type												Fate													
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	Nb. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)		
283	5-12-66	251	ma	8	X														X	Jba								X	6-17-66	X	8						
273	6-17-66	414	lx	5																X									6-17-66	X	5						

Form D-1 Station 4 Rosalia

Field Form

UNIT 3

Observer: DARNELL

WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

Unit No.	Transect No.	First Observation			Nest Status							Cover Type													Fate												
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	N. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)		
3	85	5-16-66	254	Mna	7	X														X							X	6-21-66	X	7							Lathe may be # 25
3	87	5-16-66	255	Mna	9	X														X							X	6-21-66	X	7							
3	90	5-16	260	Mna	7	X														X								6-21-66	X	7							
3	91	5-16	263	Mallard	8	X														X								6-21-66	X	8						Lathe # 25	
	96	5-17	258	Mna	7	X														X							X	6-21-66	X	7							
	97	5-17	259	Mna	9	X														X							X	6-21-66	X	9							
	98	5-17	264	Mna	10	X														X							X	6-21-66	X	9							
	99	5-17	265	Mna	9	X														X							X	6-21-66	X	8							
	99	5-17	268	Mna	7	X														X							X	6-21-66	X	3							
	99	5-17	269	Mna	7															X								6-20									
	103	5-18	270	Mna	8	X														X								6-20-66	X	8							
	103	5-18	271	Mna	11	X														X								6-20-66	X	11							
	101	5-18	272	Pi	8	X														X							X	6-20-66	X	6							
	100	5-18	273	TX	8	X														X							X	6-20-66									
3	106	6/20/66	-	Coot	11	X														X							X	7-11	X	10							
3	107	6-20-66	417	Ca	7	X														X																	
3	99	6-21-66	418	N.a.	10	X														X							X	7-11	X	7							
3	96	6-21-66	362	Mallard	8															X							X	6-21-66	X	8							

11 eggs still incubating

2 in set 1e

NEW DEAD L NEAR NEST

4 in set 1e

1 in set 1e

1 in set 1e

Lathe # 25

Lathe may be # 25

Year: 1966

Unit 4

[illegible]

Field Form

Unit 5

WATERFOOL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

[illegible]

Unit No.	Transect No.	First Observation			Nest Status										Cover Type										Fate												
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Gx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	N. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)		
6	29	5/13	1	Mallard	7		X																					7/6	X	7							
6	31	5/13	2	Mallard	6								X															6/8									
6	33	5/13	3	Mallard	9	X																						6/8	X	9							
6	35	5/14	4	Mallard	10	X																						6/8	X	10							
6	36	5/14	5	Mallard	8	X																						6/9	X	8							
6	36	5/14	6	Mallard	8	X																						6/9	X	8							
6	36	5/14	7	Unknown	4					X																		6/9									
6	37	5/14	8	Mallard	7	X																						6/9	X	7							
6	38	5/14	9	Mallard	8	X																						6/9	X	8							
6	38	5/14	10	Teal	9	X																						6/9	X	9							
6	39	5/14	11	Pintail	7	X																						6/9	X	7							
6	28	6/8	28	Gadwall	10					X																		7/6									
6	31	6/8	29	Teal	?					X																		7/6									
6	34	6/8	30	Shoveller	10	X																						7/6									
6	34	6/8	31	Unknown	4					X																		7/6									
6	40	6/9	32	Teal	1					X																		7/7									
6	41	6/9	33	Gadwall	11	X																						7/7	X	11							
6	30	7/6	39	Teal	1					X																		7/6									
6	38	7/6	40	Ruddy	1	X																															
6	33	7/6	41	Gadwall	10	X																						7/6	X	10							
6	33	7/6	42	Unknown	?					X																		7/6									
6	34	7/6	43	Unknown	8					X																		7/6									
6	35	7/7	44	Unknown	9					X																		7/6									

Field Form

Unit No. 7

WATERFOOT PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: May 66

[illegible]

Form D-1 *Stratton & Pasakala*

Field Form

UNIT 8

Observer: *DARRELL*

WATERFOOT PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: *1966*

Unit No.	Transect No.	First Observation			Nest Status							Cover Type												Fate					Remarks (No. & expl. on back)								
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Gx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date		Hatched	Nb. Hatch.	Desert.	Destr.	Flooded	Unknown		
<i>8</i>	<i>74</i>	<i>5-14-66</i>	<i>253</i>	<i>ma</i>	<i>5</i>	<i>X</i>													<i>X</i>	<i>Jba</i>								<i>X</i>	<i>6-17-66</i>	<i>X</i>	<i>52</i>						
<i>8</i>	<i>75</i>	<i>6-17-66</i>	<i>360</i>	<i>Pintail</i>	<i>6</i>	<i>X</i>													<i>X</i>								<i>X</i>	<i>7-11-66</i>	<i>X</i>	<i>5</i>		<i>1</i>					
<i>8</i>	<i>75</i>	<i>6-17-66</i>	<i>361</i>	<i>Mallard</i>	<i>8</i>																							<i>6-17-66</i>	<i>X</i>	<i>6</i>							
<i>8</i>	<i>81</i>	<i>6-20-66</i>	<i>416</i>	<i>TX</i>	<i>9</i>	<i>X</i>													<i>X</i>									<i>6-17-66</i>	<i>X</i>	<i>9</i>							



BUREAU OF SPORT FISHERIES AND WILDLIFE
INTER-OFFICE TRANSMITTAL

Unit No. 9

Year: 1966

30930

☐ Director, _____	☒ Regular Mail
☒ Regional Director, <u>Bureau of Sport Fisheries and Wildlife</u>	☐ Air Mail
☐ Project Leader, _____	☐ Action
☐ _____	☐ Information

From _____	Office _____	Date _____
Refuge Manager	Monte Vista Refuge	9/18/67

Subject : D-1 Waterfowl Production Survey Duck & Coot Nesting Data - Espinosa - 6/20/66

ATTENTION: RED SHELDON

Please find attached Form D-1, Waterfowl Production Survey Duck & Coot Nesting Data, as per your request by telephone on September 15, 1967.

Robert L. Darnell

3-1908 (Attach securely to material to be transmitted & mail through regular channels)
/Dart 6/63)

Date	Hatched	No. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)
7	x	un	4			x	
9							
x	un					x	
x	un					x	
3							
5							
6							
8							
9							
x	un					x	
8							

Field Form

Unit No. 11

WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

[illegible]

Field Form

14

Year: 1966

Unit No.	Transect No.	First Observation			Nest Status							Cover Type												Fate													
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	No. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)		
14	30	10 May	306	✓ <i>Pen.</i>	9																																
14	35	5-12-66	160	✓ <i>ma</i>	9																																
14	36	5-12-66	252	✓ <i>ma</i>	4																																
14	21	6/13	201	✓ <i>Pa</i>	9																																
33	6/14	501	✓ <i>No</i>	15																																	
34	6/14	308	✓ <i>ma</i>	11																																	
35	6/14	281	✓ <i>TX</i>	10																																	
36	6/14	502	✓ <i>No</i>	5																																	
36	6/14	504	✓ <i>TX</i>	2																																	
25	6/14	453	✓ <i>MA</i>	8																																	
14	30	10 May	306	✓ <i>Pen.</i>	9																																
14	35	5-12-66	160	✓ <i>ma</i>	9																																
14	36	5-12-66	252	✓ <i>ma</i>	4																																
14	21	6/13	201	✓ <i>Pa</i>	9																																
33	6/14	501	✓ <i>No</i>	15																																	
34	6/14	308	✓ <i>ma</i>	11																																	
35	6/14	281	✓ <i>TX</i>	10																																	
36	6/14	502	✓ <i>No</i>																																		

Form D-1

Field Form

Unit No. 15Observer: WJ

WATERFOOT PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

Unit No.	Transect No.	First Observation				Nest Status							Cover Type												Fate											
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	No. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)	
15	37	May 10	302	Mallard	9	X	X																X				6-14-66	X	9							Transect 1
15	37	May 10	303	Mallard	9	X	X																				6-14-66	X	8							Transect 1
15	42	May 10	221	Mallard	8	X	X											X									6-14-66	X	8							
15	42	May 10	232	Mallard	8	X	X											X									6-14-66	X	8							
15	44	May 10	231	Mallard	10	X	X											X									6-14-66	X	9							
15	44	May 10	232	Mallard	7	X	X											X									6-14-66	X	8							Transect 1
15	47	May 10	233	Mallard	5	X	X											X									6-14-66	X	3							
15	47	May 10	234	Mallard	2	X	X																				6-14-66	X	3							Could not locate this nest.
15	39	May 10	204	Mallard	9	X	X												X								6-14-66	X	8							Line site egg nest could not be located
15	39	May 10	305	Mallard	1	X	X																				6-14-66									
15	39	6-14-66	353	Unknown	4	X	X													X							7-11-66	X	1							
15	39	6-14-66	354	Mallard	7															X							6-14-66	X	7							
15	37	6-14-66	402	Shoveller	3															X							6-14-66	X	3							
15	38	6-14-66	403	Mallard	7	X	X													X							7-11-66	X								
15	38	6-14-66	404	Mallard	9	X	X													X							7-11-66	X	9							
15	38	6-14-66	405	Unknown	?															X							6-14-66	X	4							INTERVIEW
15	41	6-14-66	406	Ma	7	X														X							7-11-66	X	7							
15	48	6-14-66	355	Mallard	8															X							6-14-66	X	8							
15	48	6-14-66	356	Mallard	7															X							6-14-66	X	7							

DAVE

Field Form

Unit 16

WATERFOOT PRODUCTION SURVEY DUCK & COOT NESTING DATA

1966

Unit No.	Transect No.	First Observation						Nest Status							Cover Type										Fate										
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	N. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)
16	56	5-10-66	256	ma	10														X									6-16-66				46			
	60	5-10	267	ma	7														X									6-16-66	X	52					
	62	5-10	268	ma	8														X									6-16-66							
	66	5-10	267	ma	5														X									6-16-66	X						
	69	5-10	267	ma	8														X									6-16	X	6					
	69	5-10-66	262	ma	8														X									6-16	X	6					
	55	6-16-66	512	ma	10														X									—							
	62	6-16-66	513	ma	11	X													X									7-11-66	X	11					
	65	6-16-66	284	ma	9	X													X									7-11-66	X	9					
	64	6-16-66	1455	P ₁	5														X									—							
	67	6-16-66	514	ux	?														X									6-16-66	X	7					

old eggs collected
or new dead

Form D-1

John B. Capron

Field Form

Unit No. 17

Observer:

WATERFOUL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: May 11 1966

Unit No.	Transect No.	First Observation			Nest Status							Cover Type												Fate					Remarks (No. & expl. on back)							
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Ost	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date		Hatched	No. Hatch.	Desert.	Destr.	Flooded	Unknown	
17	73	May 12	152	Ma	2																							6-16-66	X	6	1					
17	73	May 12	153	Ma	6																							6-16-66	X	6						
17	74	May 12	154	Ma	3																							6-17-66								
17	75	May 12	155	Ma	9																							6-17-66	X	8	1					
17	76	May 12	156	Ma	7																							6-17-66	X	1	2					
17	76	May 12	157	Ma	8																							6-17-66	X	4	2					
17	79	May 12	158	Ma	9																							6-17-66	X	6						
17	78	May 12	159	Ma	10																							6-17-66	X	9						
17	89	May 12	161	AT	5																							6-17-66	X	5						
17	80	May 14	162	Ma	8																							6-17-66								
17	81	May 14	163	Ma	7																							6-17-66								
17	81	May 14	164	AT or GT	8																							6-17-66	X	8						
17	84	May 14	165	Ma	4																							6-17-66								
17	96	6-17	166	Ma	16																							7-11-66								
17	96	6-17-66	167	Ma	2																							6-17-66	X	5	1					
17	96	6-17-66	168	Ma	2																							7-11-66								
17	97	6-17-66	169	Ma	6																							6-17-66	X	1	2					
17	97	6-17-66	170	Ma	6																							6-17-66								
17	80	6-17-66	185	Ma	8																							7-11-66	X	8						

of TRANSECT

Field Form

Unit No. 18

WATERFOIL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: May 1966

Unit No.	Transect No.	First Observation			Nest Status							Cover Type										Date													
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Ost	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	No Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)
18	87	5-11-66 ^W	105	Mallard	7	X													X								X	6-20-66	X	11					✓
18	90	5-11-66 ^W	106	Mallard	5	X													X									6-20-66						✓	
18	90	5-11-66 ^W	107	C. or Bw Teal	11	X													X									6-20-66						✓	
18	91	5-11-66 ^W	108	Pintail	3	X													X									6-20-66						✓	
18	91	5-11-66 ^W	109	Pintail	6	X													X								X	6-20-66						✓	
18	93	5-11-66 ^W	110	Pintail	6	X													X								X	6-20-66						✓	
18	93	5-11-66 ^W	111	Mallard	7	X													X								X	6-20-66						✓	
18	94	5-11-66 ^W	112	Pintail	8	X													X									6-20-66						✓	
18	94	5-11-66 ^W	113	Mallard	6	X													X								X	6-20-66						✓	
18	94	5-11-66 ^W	114	Un	4	X													X								X	6-20-66						✓	
18	95	5-12-66 Th	115	Mallard	7	X													X								X	6-20-66						✓	
18	95	5-12-66 Th	116	C. or Bw Teal	10	X													X								X	6-20-66						✓	
18	95	5-12-66 Th	117	Mallard	8	X													X								X	6-20-66						✓	
18	95	5-12-66 Th	118	Pintail	9	X													X								X	6-20-66						✓	
18	95	5-12-66 Th	119	Mallard	8	X													X								X	6-20-66						✓	
18	96	5-12-66 Th	120	Mallard	10	X													X								X	6-20-66						✓	
18	96	5-12-66 Th	121	Pintail	7	X													X								X	6-20-66						✓	
18	97	5-12-66 Th	122	Mallard	8	X													X								X	6-20-66						✓	
18	97	5-12-66 Th	123	Mallard	7	X													X								X	6-20-66						✓	
18	98	5-12-66 Th	124	Mallard	9	X													X								X	6-20-66						✓	
18	98	5-12-66 Th	125	Mallard	7	X													X								X	6-20-66						✓	
18	98	5-12-66 Th	126	Un	7	X													X								X	6-20-66						✓	
18	98	5-12-66 Th	127	Mallard	10	X													X								X	6-20-66						✓	
18	98	5-12-66 Th	128	C. or Bw Teal	9	X													X								X	6-20-66						✓	

Form D-1 Station - Posipala
Observer: W. M. S. S. S.

Field Form
WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

UNIT 19

Unit No.	Transect No.	First Observation			Nest Status							Cover Type													Fate					Remarks (No. & expl. on back)							
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched		No. Hatch.	Desert.	Destr.	Flooded	Unknown		
19	5	6-13-66	351	Mallard	8								X						X										6-13-66	X	3						
19	14	6-13-66	352	Pintail	11	X													X										7-11-66	X	11						
19	11	6-13-66	401	Mallard	5	X												X											7-11-66					X			

Field Form

Unit No. 20

WATERFOOT PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

Unit No.	Transect No.	First Observation			Nest Status					Cover Type											Fate														
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched	No. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)
20	32	May 11	206	Meadowl	3	X														X								6-14-66						X	
20	37	May 11	207	Meadowl	1																							6-14-66	X	3					
20	21	May 9	201	P1	9	X														X															
20	28	6-13	451	Meadowl	3															X								6-13-66							
20	37	6-13	451	Meadowl	7	X														X								6-13-66							
20	37	6-13	452	Meadowl	7	X														X								6-13-66							

Form D-1

Gilbert Allen

Shelfton & Pasphele

Field Form

Unit No. 21

Observer: Shelfton

WATERFOIL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

Unit No.	Transect No.	First Observation				Nest Status								Cover Type												Fate				Remarks (No. & expl. on back)								
		Date	Nest No.	Species	No. Eggs	Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Gx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Date	Hatched		No. Hatch.	Desert.	Destr.	Flooded	Unknown			
21	42	6-15-66	302	"	2	X														X								6-15-66										
"	43	"	303	"	5	X														X								6-15-66	X	4								
"	47	"	304	"	2	X														X								6-15-66										
"	49	"	305	"	5	X														X								6-15-66	X	4								
"	46	"	310	"	8	X														X								6-15-66	X	8								
21	52	6-15-66	357	Shoveler	9	X														X								7-11-66	X	9								
21	51	6-15-66	358	Mallard	8	X														X								7-11-66	X	8								
21	49	6-15-66	402	Unknown	6						X									X								6-15-66										
21	49	6-15-66	408	Unknown	8	X														X								7-11-66	X	7								
21	43	6-15-66	409	Ma	5	X														X								7-11-66										
21	43	6-15-66	410	Ma	5	X														X								7-11-66										
21	46	6-15-66	411	Ma	11	X														X								7-11-66										

Transect +

Form D-1

Stratton & Porpahele

Field Form

Unit No. 22

Observer:

WATERFOIL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: 1966

[illegible]

Field Form

Unit No. 23Observer: John B. Espino WATERFOIL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Year: May 1966

[illegible]

Forms D2 & D3

D2: WPS – Wildlife Trend Data

D3 WPS – Duck Brood Sample Data

Year: 66

Completed 5-10-66

[illegible]

Form D-2
Unit No: 8

Field Form

WATERFOWL PRODUCTION SURVEY--WILDLIFE TREND DATA

Obs: DARNELL Year: 1966

Species	Record Data on Trans. Series:			Total Obs.	Total Nests, Dens, or Houses Obs.	Active Nests, Dens, & Houses on Trans.	Map Symbol	Trans. No.	Date 1st Obs.	No. Eggs	Date										Cover Type									
	1	2	3								Hatched	No. hatched	Desert.	Destr.	Flooded	Unknown	Sx	Eve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch
Pheasant	X	X	X	XXXXXX	XXXXXX	XXXXXXXXXX	X																							
Lowy Egret		X		XXXXXX	XXXXXX																									
B.C. Night Her.		X		XXXXXX	XXXXXX																									
Avocet		X		XXXXXX	XXXXXX	1 nest																								
Phalarope		X		XXXXXX	XXXXXX																									
Short-ear. Owl		X		XXXXXX	XXXXXX																									
Marsh Hawk		X		XXXXXX	XXXXXX																									
P.-T. Hawk		X		XXXXXX		XXXXXXXXXX																								
G.H. Owl		X		XXXXXX		XXXXXXXXXX																								
Magpie		X		XXXXXX		XXXXXXXXXX																								
Blackbird		X		XXXXXX	XXXXXX																									
Muskrat		X		XXXXXX	XXXXXX																									
adger		X		XXXXXX	XXXXXX																									
Skunk		X		XXXXXX	XXXXXX																									
Cottontail		X		1	XXXXXX																									
Jack Rabbit		X		12	XXXXXX																									
Mourn Dove		X		2	XXXXXX																									

1 of 1 trans

1 12 11 11

Form D-2
Unit No: 9

Field Form

WATERFOWL PRODUCTION: SURVEY--WILDLIFE TREND DATA Obs: John B. Capomano Year: 66

Species	Record Data on Trans. Series:			Total Obs.	Total Nests, Dens, or Houses Obs.	Active Nests, Dens, & Houses on Trans.	Map Symbol	Trans. No.	Date 1st Obs.	No. Eggs	Fate										Cover Type											
	1	2	3								Hatched	No. hatched.	Desert.	Destr.	Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flood.	
Pheasant	X	X	X	XXXXXX	XXXXXX	XXXXXXXXXX		X																								
Snowy Egret		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
B.C. Night Her.		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
Avocet		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
Phalarope		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
Short-ear. Owl		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
Marsh Hawk		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
R. - T. Hawk		X		XXXXXX		XXXXXXXXXX																										
G. H. Owl		X		XXXXXX		XXXXXXXXXX																										
Magpie		X		XXXXXX		XXXXXXXXXX																										
Blackbird		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
Muskrat		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
Badger		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
Skunk		X		XXXXXX	XXXXXX	XXXXXXXXXX																										
Cottontail		X		3	XXXXXX	XXXXXX																										
Jack Rabbit		X		13	XXXXXX	XXXXXX																										
Mourn. Dove		X			XXXXXX	XXXXXX																										

Short-eared owl found (young bird)

1 Skinkered owl found (young bird)

Form D-2
Unit No: 1

WATERFOWL PRODUCTION SURVEY--WILDLIFE TREND DATA

Obs:

Year:

[illegible]

Obs: Dorecil STUDENTS Year: 1966

[illegible]

19

UNIT 19

Obs: DARKWELL Year: 1966

[illegible]

03

SPECIES

Date	Mallard	Pintail	Green-winged Teal	Shoveler	Tx	Redhead	Ruddy	Unknown
6-25	1 - 7							
6-26	3 - 24	1 - 9						
6-27	4 - 23		2 - 8	1 - 8	1 - 2			
6-28	5 - 22				1 - 3			
6-29	9 - 56	4 - 20		1 - 9				
7-8	3 - 19		2 - 17	2 - 15		12 - 6		
7-11	2 - 11		2 - 17	2 - 13	1 - 5			
7-12	3 - 15	1 - 8				1 - 6		
7-13	8 - 48	6 - 34	2 - 5	14 - 94	3 - 28			4 - 27
7-14	2 - 13	6 - 29	2 - 14	9 - 54	2 - 16	1 - 6		1 - 6
7-15	7 - 44	4 - 27	4 - 19	9 - 60	1 - 7	1 - 7		
7-20	5 - 34	4 - 28	2 - 10	12 - 82	5 - 38	4 - 22		1 - 8
7-21	6 - 47		3 - 16	8 - 52	5 - 44	1 - 8	2 - 13	
7-22	9 - 66	3 - 16	1 - 9	5 - 26	8 - 57	1 - 5		1 - 9
Total	66 429	29 171	20 115	63 413	27 200	10 60	2 - 13	7 50

6.50 5.90 5.75 6.56 7.41 6.00 6.5 7.14

$$\frac{1451}{224} = 6.48$$

Observer: Arnold

WATERFOWL PRODUCTION SURVEY -- DUCK BROOD SAMPLE DATA

Year: 1966

Date	Mallard	Pintail	Gadwall	Shoveller	B-W Teal	Grn Teal	Redhead
6-29	6 Unit No. Pond No. No.duckl. Class IIc & III Br.	1 Unit No. Pond No. No.duckl. Class IIc & III Br.					
6-29		6 Unit No. Pond No. No.duckl. Class IIc & III Br.					
6-29				15 Unit No. Pond No. No.duckl. Class IIc & III Br.	9 Unit No. Pond No. No.duckl. Class IIc & III Br.		
6-29	15 Unit No. Pond No. No.duckl. Class IIc & III Br.	4 Unit No. Pond No. No.duckl. Class IIc & III Br.					
6-29	21 Unit No. Pond No. No.duckl. Class IIc & III Br.	9 Unit No. Pond No. No.duckl. Class IIc & III Br.					
6-29		14 Unit No. Pond No. No.duckl. Class IIc & III Br.	4 Unit No. Pond No. No.duckl. Class IIc & III Br.				
6-29	21 Unit No. Pond No. No.duckl. Class IIc & III Br.	5 Unit No. Pond No. No.duckl. Class IIc & III Br.					
6-29	18 Unit No. Pond No. No.duckl. Class IIc & III Br.	6 Unit No. Pond No. No.duckl. Class IIc & III Br.					
6-29	5 Unit No. Pond No. No.duckl. Class IIc & III Br.	8 Unit No. Pond No. No.duckl. Class IIc & III Br.					
6-29		18 Unit No. Pond No. No.duckl. Class IIc & III Br.	5 Unit No. Pond No. No.duckl. Class IIc & III Br.				
7-11				19 Unit No. Pond No. No.duckl. Class IIc & III Br.	7 Unit No. Pond No. No.duckl. Class IIc & III Br.		
7-11			14 Unit No. Pond No. No.duckl. Class IIc & III Br.	10 Unit No. Pond No. No.duckl. Class IIc & III Br.			
7-11			14 Unit No. Pond No. No.duckl. Class IIc & III Br.	7 Unit No. Pond No. No.duckl. Class IIc & III Br.			
7-11	21 Unit No. Pond No. No.duckl. Class IIc & III Br.	6 Unit No. Pond No. No.duckl. Class IIc & III Br.					
7-11				21 Unit No. Pond No. No.duckl. Class IIc & III Br.	6 Unit No. Pond No. No.duckl. Class IIc & III Br.		
7-11	17 Unit No. Pond No. No.duckl. Class IIc & III Br.	5 Unit No. Pond No. No.duckl. Class IIc & III Br.					
7-11					3 Unit No. Pond No. No.duckl. Class IIc & III Br.	5 Unit No. Pond No. No.duckl. Class IIc & III Br.	
7-12							18 Unit No. Pond No. No.duckl. Class IIc & III Br.
7-12	18 Unit No. Pond No. No.duckl. Class IIc & III Br.	5 Unit No. Pond No. No.duckl. Class IIc & III Br.					6 Unit No. Pond No. No.duckl. Class IIc & III Br.
7-12		18 Unit No. Pond No. No.duckl. Class IIc & III Br.	8 Unit No. Pond No. No.duckl. Class IIc & III Br.				
7-12	18 Unit No. Pond No. No.duckl. Class IIc & III Br.	3 Unit No. Pond No. No.duckl. Class IIc & III Br.					
7-12	10 Unit No. Pond No. No.duckl. Class IIc & III Br.	7 Unit No. Pond No. No.duckl. Class IIc & III Br.					
7-13				19 Unit No. Pond No. No.duckl. Class IIc & III Br.	6 Unit No. Pond No. No.duckl. Class IIc & III Br.		

Arnoldo Pospahala

Date	Mallard Unit No. Pond No. No. duckl. Class IIc & III Br.	Pintail Unit No. Pond No. No. duckl. Class IIc & III Br.	Gadwall Unit No. Pond No. No. duckl. Class IIc & III Br.	Shoveller Unit No. Pond No. No. duckl. Class IIc & III Br.	B-W Teal Unit No. Pond No. No. duckl. Class IIc & III Br.	G-W Teal Unit No. Pond No. No. duckl. Class IIc & III Br.	Unknown Unit No. Pond No. No. duckl. Class IIc & III Br.
7-13	14 8						
7-13	15 6						
7-13			17 2				
7-13	17 7						
7-13		17 9					
7-13		17 5					
7-13	17 6						
7-13				17 6			
7-13					17 8		
7-13	17 4						
7-13		3 5					
7-13		3 4					
7-13		3 4					
7-13			17 3				
7-13				18 6			
7-13	18 6						
7-13	18 8						
7-13				10 6			
7-13	10 3						
7-13				10 5			
7-13				10 9			

Observer: Arnold

WATERFOWL PRODUCTION SURVEY -- DUCK BROOD SAMPLE DATA

Year: 1966

Date	Mallard Unit No. Pond No. No. duckl. Class IIc & III Br.	Pintail Unit No. Pond No. No. duckl. Class IIc & III Br.	Gadwall Unit No. Pond No. No. duckl. Class IIc & III Br.	Shoveller Unit No. Pond No. No. duckl. Class IIc & III Br.	B-W Teal Unit No. Pond No. No. duckl. Class IIc & III Br.	G-M Teal Unit No. Pond No. No. duckl. Class IIc & III Br.	Unknown Unit No. Pond No. No. duckl. Class IIc & III Br.
7-13				10	7	16	9
7-13				11	8		
7-13					4	11	
7-13	4	7		4	11		
7-13				4	7		
7-13				15	6		
7-13				15	6		
7-13				15	5		
7-13							15
7-13							15
7-13							8
7-13							6
7-13							6
7-14	14	6		14	2		
7-14							
7-14	14	6					
7-14			14	8			
7-14				14	6		
7-14				14	6		
7-14	15	4					
7-14	9	2					
7-14				17	7		
7-14							17
7-14							6

Observer: Arnold

WATERFOWL PRODUCTION SURVEY -- DUCK BROOD SAMPLE DATA

Year: 1966

Date	Mallard Unit No. Pond No. No. duckl. Class IIc & III Br.	Pintail Unit No. Pond No. No. duckl. Class IIc & III Br.	Gadwall Unit No. Pond No. No. duckl. Class IIc & III Br.	Shoveller Unit No. Pond No. No. duckl. Class IIc & III Br.	B-W Teal Unit No. Pond No. No. duckl. Class IIc & III Br.	G-M Teal Unit No. Pond No. No. duckl. Class IIc & III Br.	Red head Unit No. Pond No. No. duckl. Class IIc & III Br.
7-14							17
7-14			17	6			6
7-14					3	9	
7-14		18					
7-14		18					
7-14				10	7		
7-14				10	6		
7-14	10	7					
7-14				10	6		
7-14				4	10		
7-14				4	4		
7-14	4	6			4	7	
7-14							
7-15			14	2			
7-15			14	7			
7-15				14	7		
7-15							
7-15		14					
7-15							
7-15	14	3					
7-15			14	5			
7-15	17	7					
7-15		17					

458

WATERFOWL PRODUCTION SURVEY -- DUCK BROOD SAMPLE DATA

Year: 1966

[illegible]

Form D4

Waterfowl Production Survey Duck
Nesting Transects Individual Unit
Summary

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 1Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Covery Type (No. of nests in each primary tvpe)													
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	1	1	100	-	-	-	-								1							
Pintail																						
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.																						
G+W Teal																						
Ruddy																						
Unknown	4	2	50	-	2	-	-								4					4		4
Total	5	3	60	-	2	-	-								5					4		4
Coot	1	1	100	-	-	-	-															1

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 2Recorder: ARNOLD + MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Primary Cover Type (No. of nests in each primary type)												
		No. Hatched	% Hatched							Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	1	1	100												1							1
Pintail																						
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.																						
G+W Teal																						
Ruddy																						
Unknown	1	1	100												1							
Total	2	2	100	0	0	0	0								2							1
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 3Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
		No. Hatched	% Hatched																			
Mallard	14	13	93	1								1			12	1						8
Pintail	1	1	100												1							1
Gadwall	1	1	100												1							
Shoveller Teal																						
B-W & Cinn.	1		0		1										1							1
G+W Teal																						
Ruddy																						
Unknown																						
Total	17	15	88.2	1	1	--						1			15	1						10
Coot	1	1	100	0	0	0	0								1							1

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 4Recorder: ARNOLD & MODREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Covery Type (No. of nests in each primary type)															
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded		
Mallard																								
Pintail	1		0		1										1									
Gadwall																								
Shoveller																								
Teal																								
B-W & Cinn.																								
G-W Teal																								
Ruddy																								
Unknown	1		0	1						1														1
Total	2	-	0	1	1	0	0			1					1									1
Coot																								

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 5Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Covery Type (No. of nests in each primary type)													
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	0																					
Pintail																						
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.																						
G+W Teal																						
Ruddy																						
Unknown																						
Total	0																					
Coot																						

*Obtain data from Field Form D-1

NO NESTS
FOUND

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 6Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Covery Type (No. of nests in each primary type)														
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	
Mallard	8	7	88						2						6								
Pintail	1	1	100												1								
Gadwall	3	2	67						2						1								
Shoveller	1	0	0		1										1								
Teal																							
B-W & Cinn.	4	1	25		3				1			1			2								
G+W Teal																							
Ruddy	1	0	0	-			1								1								
Unknown	5	0	0	-	5				1						4								
Total	23	11	47.8	0	9		1																
Coot																							

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 7Recorder: ARNOLD MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Primary Covery Type (No. of nests in each primary type)													
		No. Hatched	% Hatched							Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	
Mallard	5	5	100												4	1							1
Pintail	1	1	100								1												
Gadwall																							
Shoveller																							
Teal																							
B-W & Cinn.	1	0	0	1												1							
G-W Teal																							
Ruddy																							
Unknown	2	0	0	1	1	0									2								
Total	9	6	66.7	2	1	0	0				1				4	2							1
Coot																							

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 8Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
		No. Hatched	% Hatched																			
Mallard	2	2	100												2							1
Pintail	1	1	100												1							1
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.	1	1	100												1							
G-W Teal																						
Ruddy																						
Unknown																						
Total	4	4	100	0	0	0									4							2
Coot																						

*Obtain data from Field Form D-1

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 9Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Covery Type (No. of nests in each primary tvpe)														
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	
Mallard	36	35	97	1					1							35							30
Pintail	3	3	100													3							3
Gadwall	1	1	100													1							
Shoveller	1	1	100													1							1
Teal																							
B-W & Cinn.	4	4	100													4							4
G-W Teal																							
Ruddy																							
REDHEAD	1	1	100						1														1
Unknown	8	8	100													7	1						6
Total	54	53	98	1	-	-	-	-	2							51	1						45
Coot	1	1	100													1							

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 10Recorder: ARNOLD Y MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Covery Type (No. of nests in each primary type)													
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	5	2	40	1	2				2						3							1
Pintail																						
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown	8	5	63	1	1	1			2						6							4
Total	13	7	53.8	2	3	1	0		4						9							5
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 11Recorder: ARNOLD MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Covery Type (No. of nests in each primary tvpe)														
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	
Mallard	3	3	100											2	1								
Pintail																							
Gadwall	1		0		1										1								
Shoveller																							
Teal																							
B-W & Cinn.																							
G+W Teal																							
Ruddy																							
Unknown																							
Total	4	3	75	0	1	0	0								3	1							
Coot																							

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 14Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Cover Type (No. of nests in each primary type)															
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded		
Mallard	4	3	75	-	-	-	1							1	3									
Pintail	2	2	100	-	-	-	-								2									
Gadwall																								
Shoveller	1	0	0	0	1							1												
Teal																								
B-W & Cinn.	1	1	100									1												
G-W Teal																								
Ruddy																								
Unknown	2	2	100									1			1						1			
Total	10	8	80	-	1	-	1					1	2		1	6					1			
Coot	1	1	100	-											1									

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 15Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Primary Cover Type (No. of nests in each primary type)												
		No. Hatched	% Hatched							Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	12	10	83				2		3			3			5				1			
Pintail	1	1	100									1										
Gadwall	1	1	100												1							
Shoveller	1	1	100												1							
Teal																						
B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown	2	2	100												2							
Total	17	15	88	-	-	-	2		3			4			9				1			
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 16Recorder: ARNOLD + MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Cover Type (No. of nests in each primary type)													
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	7	5	71	1			1		1						6							
Pintail	1	-	0	-	1				1													
Gadwall	2	1	50		1										2							
Shoveller																						
Teal																						
B-W & Cinn.																						
G+W Teal																						
Ruddy																						
Unknown	1	1	100						1													
Total	11	7	64	1	2	-	1		3						8							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 13Recorder: ARNOLD G. MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
		No. Hatched	% Hatched																			
Mallard	13	7	54	3			3		1		1	1			10							5
Pintail																						
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.	2	2	100												2							1
G+W Teal																						
Ruddy																						
Unknown	5	2	40	2		1									5							
Total	20	11	55	3	2	-	4		1		1	1			17							6
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 18Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Covery Type (No. of nests in each primary type)														
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	
Mallard	18	13	72		2		3								18								16
Pintail	6	3	50				3								6								4
Gadwall	1						1								1								1
Shoveller Teal																							
B-W & Cinn.	4	3	75				1								4								3
G.W Teal																							
Ruddy																							
REDHEAD	1			1											1								1
Unknown	8	8	100												7	1							6
Total	38	27	71	1	2	-	8								37	1							21
Coot																							

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 19Recorder: ARNOLD Y. MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
		No. Hatched	% Hatched																			
Mallard	2	1	50		1									1	1							
Pintail	1	1	100												1							
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.																						
G+W Teal																						
Ruddy																						
Unknown	1	1	100												1							
Total	4	3	75	-	1	-	-							1	3							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 20Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Primary Covery Type (No. of nests in each primary tvpe)														
		No. Hatched	% Hatched							Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded		
Mallard	3	1	33	1			1		1						2									
Pintail																								
Gadwall																								
Shoveller																								
Teal																								
B-W & Cinn.																								
G-W Teal																								
Ruddy																								
Unknown	2			1		1						1			1									
Total	5	1	20	2	-	1	1		1			1			3									
Coot																								

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 21Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Primary Cover Type (No. of nests in each primary type)												
		No. Hatched	% Hatched							Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	8	6	75		1		1								8							
Pintail																						
Gadwall	1	-	0				1			1												
Shoveller	1	1	100												1							
Teal																						
B-W & Cinn.																						
G+W Teal																						
Ruddy																						
Unknown	2	1	50	1											2							
Total	12	8	66.7	1	1	-	2			1					11							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 22Recorder: ARNOLD & MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Primary Cover Type (No. of nests in each primary type)															
		No. Hatched	% Hatched						Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded		
Mallard	5	2	40		3									14										
Pintail																								
Gadwall																								
Shoveller	1	1	100											1										
Teal																								
B-W & Cinn.																								
G+W Teal																								
Ruddy																								
Unknown	2	-	0				2		1			1												
Total	8	3	38	-	3	-	2		1			1		15										
Coot																								

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----INDIVIDUAL UNIT SUMMARY*

Unit No. 23Recorder: ARNOLD G. MOOREYear: 1966Transect Coverage in % 100 (All transects=100%, every other transect = 50%, etc.)

	Total Nests on Transects	Nests		No. Deserted	No. Destroyed	No. Flooded	Unknown	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
		No. Hatched	% Hatched																			
Mallard																						
Pintail																						
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.																						
G+W Teal																						
Ruddy																						
Unknown	1	1	100												1							
Total	1	1	100																			
Coot																						

*Obtain data from Field Form D-1

Forms D5 – D11

D5 – WPS Duck Nesting Transects Refuge Annual Summary

D6 – Calculations for Determination of Corrected Species Composition

D6a – Calculations For Determination of Ducks Produced by Species

D7 – WPS Duck Nesting Transects Habitat Unit Summary by Years

D8 – WPS Waterfowl Production Estimates Refuge Summary by Years

D-9 – WPS Primary Duck Nesting Cover Types Refuge Annual Summary

D10 – WPS Primary Duck Nesting Cover Types Refuge Summary by Years

D11 – WPS Wildlife Trend Data Refuge Summary by Years

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS-----REFUGE ANNUAL SUMMARY*

Recorder: DARNEYear: 1966

Transect Coverage in %/100 (All transects 100%, every other transect 50%, etc.)

Species		Unit No.																						
(1) No. Nests in transect	(2) % Refuge total	(3) % Hatch	1	2	3	4	5	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	Total
Mallard	(1)		1	1	14			8	5	2	36	5	3	4	12	7	13	18	2	3	8	5		147
	(2)		27	50	82			35	56	50	67	39	75	40	71	64	65	47	50	60	67	63		56.75
	(3)		100	100	93			88	100	100	97	40	100	75	83	71	54	72	50	33	75	40		79.59
Pintail	(1)			1	1			1	1	1	3			2	1	1		6	1					19
	(2)			6	50			4	11	25	5			20	6	9		16	25					7.34
	(3)			100	0			100	100	100	100			100	100	0		50	100					73.18
Gadwall	(1)			1				3			1		1		1	2		1			1			11
	(2)			6				13			2		25		6	18		3			5			4.25
	(3)			100				67			100		0		100	50		0			0			54.55
Shov.	(1)							1			1			1	1						1	1		6
	(2)							4			2			10	6						9	12		2.32
	(3)							0			100			0	100						100	100		66.66
B-W & Cinn.	(1)			1				4	1	1	4			1			2	4						18
	(2)			6				18	11	25	7			10			10	11						6.95
	(3)			0				25	0	100	100			100			100	75						66.66
G-W Teal	(1)																							
	(2)																							
	(3)																							
Redhead	(1)										1							1						2
	(2)										2							2						0.97
	(3)										100							0						50
Ruddy	(1)							1																1
	(2)							4																0.39
	(3)							0																00
	(1)																							
	(2)																							
	(3)																							
	(1)																							
	(2)																							
	(3)																							
Unknown	(1)		4	1		1		5	2		8	8		2	2	1	5	8	1	2	2	2	1	55
	(2)		80	50		50		22	22		13	61		20	11	9	25	21	25	40	17	25	100	21.23
	(3)		50	100		5		0	0		100			100	100	100	40	100	100	0	50		100	61.82
Total	(1)		5	2	17	2	0	23	9	4	54	13	4	10	17	11	20	38	4	5	12	8	1	259
	(2)		100	100	100	100	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	(3)		60	100	88.2	0	0	47.8	66.7	100	98.1	53.8	75	80	88.2	63.6	55	71	75	20	44.7	39.5	100	77.6
Coot	(1)		1		1						1			1										4
	(2)		100		100						100			100										
	(3)		100		100						100			100										100.00

* Obtain data from Summary Form D-4

CALCULATIONS FOR DETERMINATION OF CORRECTED SPECIES COMPOSITION

[illegible]

[illegible]

Calendar Year 1966

[illegible]

WATERFOWL PRODUCTION ESTIMATES-----REFUGEE SUMMARY BY YEARS*

Recorder: Arnold & Moore

Calendar Year 1966

[illegible]

Obtain data from Column 17, Summary Form D-6a

Obtain confidence limits from calculation (C) in text

WATERFOWL PRODUCTION SURVEY

PRIMARY DUCK NESTING COVER TYPES---REFUGES ANNUAL SUMMARY*

Recorder: ARNOLD & MOOREYear: 1966

	(1) No. Nests (2) % in Primary Type		Mallard		Pintail		Gadwall		Shoveller		B-W & Cinn.		Teal		G.W. Teal		Redhead		Ruddy		M. W. W. W.				Total		Coot	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Sx	11	7.5%	1	5.3%	1	5.3%	2	18.2%	1	9.1%			5	5.6%			1	5.0%			5	5.0%			21	8.1%		
Sve	5	3.4%	1	5.3%	1	5.3%	1	16.7%	1	9.1%											3	4.6%			2	8.1%		
Dst	1	1.7%	1	5.3%	1	5.3%																			2	8.1%		
Crx	1	1.7%	1	5.3%	1	5.3%																			2	8.1%		
Gx	5	3.4%	1	5.3%	1	5.3%																			2	8.1%		
NoF	3	2.0%																							3	11.2%		
Wx	3	2.0%																							3	11.2%		
Jba	123	83.0%	16	16.7%	16	16.7%	8	70.1%	5	43.3%	14	14.1%	1	7.8%	1	5.6%	1	5.0%			44	18.0%			5	18.0%		
Cx	3	2.0%																							5	18.0%		
Ex																									1	4.6%		
Tla																												
Sva	1	1.7%																							1	4.6%		
Dike																									5	18.0%		
Ditch																												
Flooded	64	43.5%	9	9.1%	9	9.1%	1	9.1%	1	9.1%															107	41.3%		
Total	147		19		19		11		6				18		5		2		1		55				259			

Primary Type

* Obtain data from Summary Form D-4

PRIMARY DUCK NESTING COVER TYPES---REFUGEE ANNUAL SUMMARY*

Year: 1966
Calendar Year

Recorder: Arnold & Moore

Primary Type	(1) No. Nests		(2) % in Primary Type	
	(1)	(2)	(1)	(2)
Mallard	11	7.5	1	7.3
Sve	11	7.5	1	7.3
Crx	1	0.7	1	0.7
Dst	5	3.4	1	0.7
Gx	5	3.4	1	0.7
Not	3	2.0	16	84.2
Wx	3	2.0	16	84.2
Jba	123	83.1	8	7.2
Cx	3	2.0	5	3.9
Ex	3	2.0	14	83.3
Tla	1	0.7	1	0.7
Sva	1	0.7	1	0.7
Dike	1	0.7	1	0.7
Ditch	64	43.5	9	5.6
Flooded	64	43.5	9	5.6
Total	147		11	7.4
			1	0.7
			1	0.7
			1	0.7
			1	0.7
			1	0.7
			1	0.7
			1	0.7
			1	0.7
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* Obtain data from Summary Form D-9

WATERFOWL PRODUCTION STUDY

PRIMARY DUCK NESTING COVER TYPES----REFUGE SUMMARY BY YEARS*

Recorder: ARNOLD & MOORE

Year		Primary Cover Type															
(1) No. Duck Nests	(2) % in Primary Type	Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Total
(1)																	
(2)																	
(1)																	
(2)																	
(1)																	
(2)																	
1966	(1)	0	21	2	2	12	0	3	21	25	1	0	1	5	0	107	259
	(2)	0	8.1	.8	.8	4.6	0	1.2	81.9	1.9	.4	0	.4	1.9	0	413	
(1)																	
(2)																	
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(2)																	
(1)																	
(2)																	

* Obtain data from Summary Form D-9

1. FUGITIVE FROM THE REFUGEE CAMP BY NAME.

Calendar Year 1966

[illegible]

Arnold & Moore

WIDTIE FROM THE OFFICE OF THE ATTORNEY GENERAL

Obtain data from Field Form 2-2 * Adjust figures to represent 100% Transect coverage

**Misc. Report: "Net Losses
in Grazed vs. Ungrazed
Waterfowl Habitat"
And
Misc. Memos**

NEST LOSSES IN GRAZED vs UNGRAZED WATERFOWL HABITAT

by
Merrill C. Hammond

Introduction

Several waterfowl ecology studies published during the past 27 years have dealt with interrelationships between cattle, ducks and egg-eating predators. Let me review the major conclusions.

1. Moderately grazed pastures were more attractive for blue-wing nesting than ungrazed grasslands. Ungrazed areas may have been equally attractive for other species. (2, Iowa)
2. Nesting success, as measured by studies of natural nests which were approached by the observer, was much higher in pastures than in ungrazed grasslands. (2, Iowa)
3. Cover consisting of alfalfa and grass mixtures was most attractive to nesting ducks. (2, Iowa)
4. Blue-winged teal nest densities were similar under moderate grazing and non-use. (1, Iowa)
5. In a pasture studied for four successive years (1933-1936), skunk and badger dens as well as predation increased during two non-use years. (1, Iowa)
6. Alfalfa was highly preferred as nesting cover. (1, Iowa)
7. One cow to six acres in normal years is beneficial to blue-wings in Iowa's bluegrass pastures. (1, Iowa)
8. The author surmised that in rank vegetation there were brood losses on the trek from nest to water. (5, Iowa)

FISH & WILDLIFE SERVICE
Monte Vista Refuge
AUG 25 1966
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A fair number of you managers, with student help, have just completed a series of dummy nest studies which sampled grazed and ungrazed habitat. I have examined 40 separate sample pairs, 7,331 nests, comparing these two sites between 1951 and 1965, most of them in 1963-1965.

Eight of the 40 pairs showed higher loss rates in ungrazed areas; 32 had higher loss rates in the pastures. The average for all, converted to a 35 day period of exposure, was 63 percent losses in pastures, about 50 percent in idle areas, and 13 percent greater loss in grazed pastures. Here is a 4-to-1 vote for non-use.

To conclude this introduction let me state that there is an apparent contradiction in the evidence. Since many of us have an emotional empathy for the Western symbols of horses, cows and camp fires, it is important that we explore this contradiction further.

Dummy Nest Studies

In its simplest form, nest predation is a game of hide-the-thimble between prey and predator. The more places to hide and the greater the barrier to animal movement, the more secure the nest.

Our data leads me to believe that the standard nesting study, which involves flushing hens and visiting nests, may be highly biased, particularly in the denser cover types. Of the few alternate tools available the dummy nest technique, in which the eggs are placed with a long pole and no tracks or trails are made to the "nest" site, can measure the activity and movement patterns of egg-eating animals in a relatively unbiased manner. Using this technique, Capel (3) learned something of the

We now come to a critical question: How dense can cover be and still be useful to ducks for nesting? This question must eventually be answered for each duck species, for the various degrees of rainfall from place to place and year to year, and for the different patterns of density.

Schranck (personal communication, 1965), who studied the relationship of landing spots to nest site location, had difficulty finding dense cover blocks which did not already have natural landing spots quite well distributed in them. Species, such as gadwalls, mallards, and widgeon, frequently use the densest cover available. Blue-wings, obviously, have a preferred range of cover height and density somewhat lower and lighter than that selected by the former species. Pintails may nest where there is practically no cover.

Salyer (10) found more than 70 per cent of his nests in the thick cover of buckbrush and alfalfa, although brome and natives made up more than half the area dragged.

The prairie grouse studies during 1956-1964 have shown that higher population levels are maintained where land blocks contain at least 40-50 percent of idle grassland. This may be a cover-density/nesting-success relationship plus food competition for essential fall/winter foods between cattle and grouse, or some other factor even less well understood.

Nest Predation

Dummy nest studies have shed some light upon other interesting aspects of general nest predator behavior.

3. Walking to nests in poor to fair cover (e.g., grazed) does not increase predation rates as much as it does in good-to-excellent cover. It follows that the higher duck nest loss rates commonly observed in the better cover classes are probably due to the added loss caused by the observer.

4. Nests visited after a rain (when tracks and trails are more conspicuous) were especially vulnerable.

5. Rain, following a visit to the nest by the observer, reduced the loss rate.

6. Individual areas apparently had a characteristic trend in loss rates between early season and late season. The expected trend is toward decreased loss as cover improves and food availability is greater, even though the number of egg-eaters is increasing through reproduction. Three possible causes for increased late-season losses are: (1) off-refuge haying and harvest causing movement onto the refuge for feeding; (2) warmer weather causes eggs to spoil sooner; rotten eggs may be more vulnerable than fresh eggs; (3) bullsnake predation is known to be more severe in the latter part of the nesting season (Imler's Crescent Lake Study Report, 1939).

7. When dummy nests were set out by pole and rechecked with one to three later visits, loss rates increased from zero to two visits, then dropped considerably. This apparently means that the nests that survive two visits are in more secure sites; the more vulnerable nests have already been taken. This pattern of nest losses is somewhat similar to that found with observed natural duck nests.

12. Dummy nest losses were about the same at the various distances to water sampled. This has also been true for Lower Souris natural nests since foxes became an important predator.

Conclusions and Recommendations

Since nest loss rates in pastures may be running as much as twice that in nearby ungrazed cover, it appears that most refuge grazing programs are in need of re-evaluation.

With grouse now a harvestable species on some refuges there is increased justification for management to maintain higher population levels. Considering both waterfowl and grouse, it appears that nest cover development will bring increased productivity on many areas.

While we do not know just how acceptable certain kinds of dense cover are to ducks or upland game, we do know that idle alfalfa-clover-grass mixtures are highly attractive and have relatively low predation rates. In fact, where cover is being managed primarily for nesting, these legume combinations appear to have many advantages over native grasses.

There was apparently little difference in predation rates between cover belts 600 feet wide and those wider. This may be more than enough. Prairie grouse apparently need 40 to 50 percent idle grassland in large blocks for optimum population levels. Prairie chickens require an over-story of tall grasses in their nesting-roosting-resting environment.

Considering the restricted range of cover available to ducks on private land, there is no question that native grasslands, even grazed at moderate to full use rates, are probably the most productive blocks

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BUREAU OF SPORT FISHERIES AND WILDLIFE
INTER-OFFICE TRANSMITTAL

10930

☐ Director, _____

☒ Regional Director, Bureau of Sport Fisheries and Wildlife (RF)

☐ Project Leader, _____

☐ _____

From

Refuge Manager

Office

Monte Vista Refuge

Date

1/16/70

Subject : Nesting Surveys Monte Vista Refuge - 1969

Attached is nesting survey data which Mr. Sheldon of Refuges requested by telephone this morning, January 16, 1970. For tabulating total production Mr. Sheldon may wish to examine Sheet 2 on the left hand side of the nesting folder. When Mr. Sheldon has finished with this information, please return it to us.

RECEIVED

JAN 19 1970

Charles R. Bryant

WILDLIFE REFUGES

Regional Director, Bureau of Sport
Fisheries and Wildlife, P.O. Box 1306
Albuquerque, New Mexico

March 3, 1966

Refuge Manager, Monte Vista National Wildlife Refuge
P.O. Box 511, Monte Vista, Colorado

Nesting Transects, 1966

We have just received a letter from Dwight Smith, Assistant Professor at Colorado State University, advising us that the graduate students from that college will visit this area on May 9 and 10, 1966.

The first run of our nesting transects for 1966 will be started on May 9 this year and we are wondering if Red Sheldon has made any contact with the Research Branch in Denver to see if they will again furnish personnel to assist with this transect run.

We would also like to know if anyone from the Regional Office will assist us with this program.

Charles R. Bryant

CRB/mg

Maps

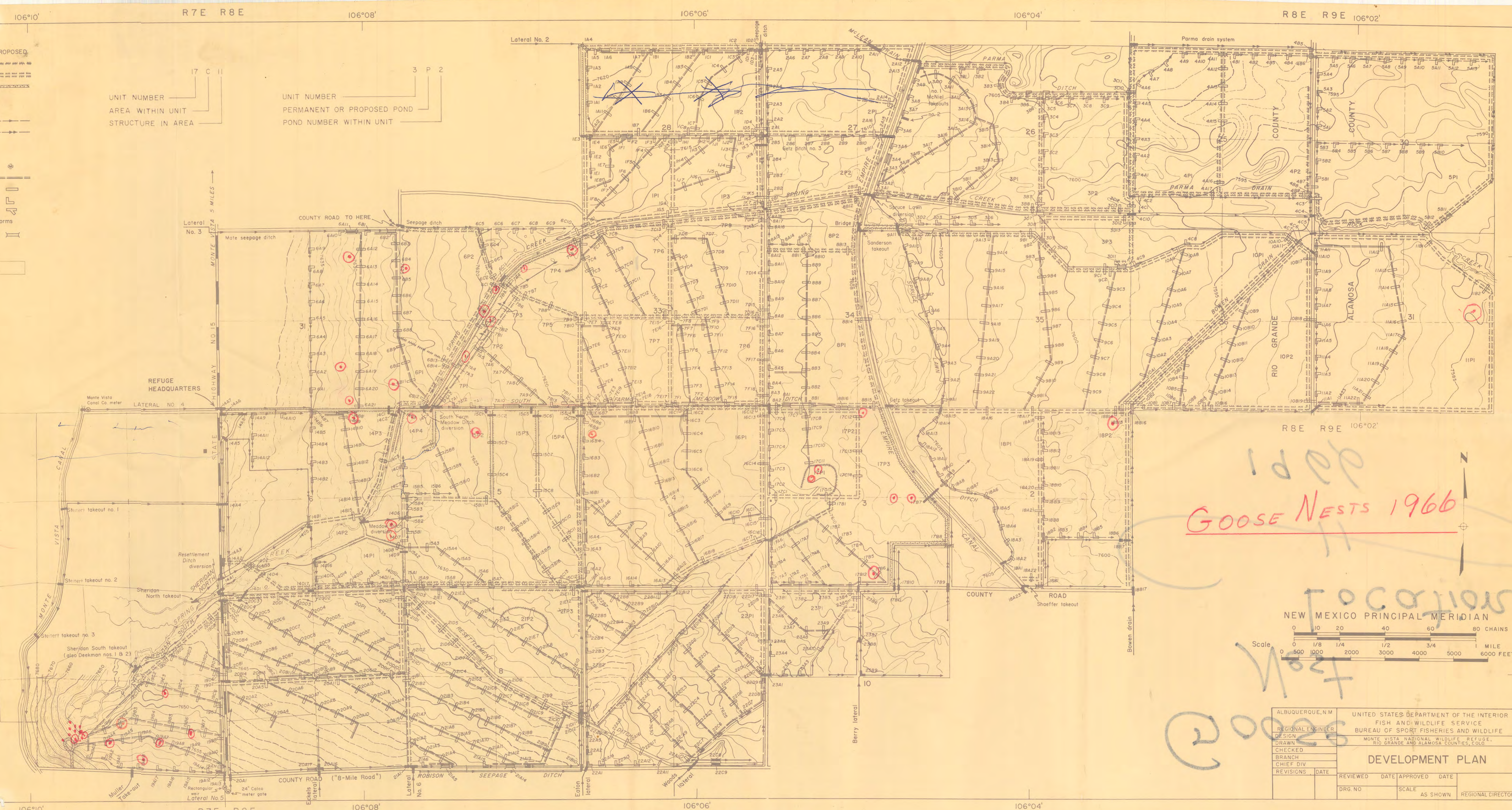
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 Various water-control structures
 Culvert for vehicle crossing

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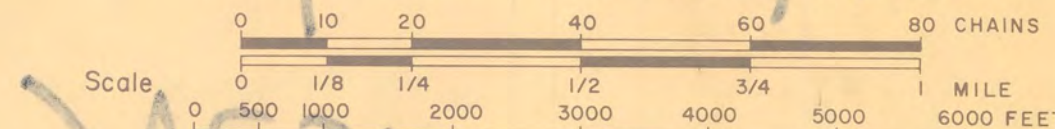
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 GOOSE NESTS 1966

NEW MEXICO PRINCIPAL MERIDIAN



ALBUQUERQUE, N.M.	UNITED STATES DEPARTMENT OF THE INTERIOR
REGIONAL ENGINEER	FISH AND WILDLIFE SERVICE
DESIGN	BUREAU OF SPORT FISHERIES AND WILDLIFE
DRAWN	MONTANA NATIONAL WILDLIFE REFUGE
CHECKED	RIO GRANDE AND ALAMOSA COUNTIES, COLO.
BRANCH	DEVELOPMENT PLAN
CHIEF DIV.	
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