1981

Form D-1: Waterfowl Production Surveys

Units 1-24

Form D-1 Field Form Unit No. 1

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

	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
Bm	1	71	5/20	117	Mallard	8		✓													✓								6/19				✓			SKUNK
			No Nests found walk																																

Form D-1 Field Form Unit No. 2

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

	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
Bm	2	73	5/21	118	BWT/CT					✓											✓								5/21				✓			SKUNK
			No Nests June Walk																																	

Form D-1 Field Form Unit No. 3

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

	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
BM	3	97	5/21	119	PINTAIL	8		✓										✓		✓									6/18				✓			COYOTE
JK	3	85	6/18	260	Mallard	2	✓														✓								7/22			✓				
JK	3	87	6/18	259	Mallard	7		✓													✓								7/22	✓						
BRY	3	89	6/18	224	GADWALL	8		✓												✓	✓								7/22	✓						
SG	3	103	6/18	73	BWT/CT	8		✓													✓								7/22				✓			SKUNK

Form D-1 Field Form Unit No. 4

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

	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	
JK	4	111	5/21	25	PINTAIL	9		✓												✓	✓								6/19	✓						
JK	4	111	5/21	26	MALLARD	7	✓														✓								6/19	✓						
JK	4	111	5/21	27	MALLARD	10		✓													✓								6/22				✓			Magpie
JK	4	117	~~6/19~~	262	GADWALL	9		✓												✓									7/22	✓						Active - present hatched
JK	4	117	6/19	263	REDHEAD	UN															✓								6/19	✓						

Form D-1 Field Form

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

Unit No. 5

No nests either walk

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	

Form D-1 Field Form Unit No. 6

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

	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
BMY	6	29	5/20	166	PINTAIL	8	✓														✓								6/18				✓			COYOTE
JK	6	33	5/20	14	MALLARD	JUST START															✓								6/17			✓				
JK	6	37	6/17	50	MALLARD	UN					✓										✓								6/17				✓			SKUNK

Form D-1 Field Form Unit No. 7

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

	Unit No.	Transect No.	First Observation: Date	Nest No.	Species	No. Eggs	Nest Status: Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Cover Type: Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Fate: Date	Hatched	No. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)
BM	7	43	5/20	116	MALLARD	UN					✓									✓						✓			5/20				✓			RAVEN
BM	7	53	5/20	114	BWT/CT	UN					✓										✓								5/20				✓			COYOTE
SC	7	57	5/20	55	MALLARD	UN					✓										✓								5/20				✓			RAVEN
BM	7	63	5/20	110	BWT/CT	10		✓													✓								6/17	✓						
BM	7	63	5/20	111	MALLARD	9		✓													✓								6/17	6	3					
BM	7	63	5/20	112	MALLARD	UN					✓										✓								5/20				✓			COYOTE
SC	7	69	5/20	54	BWT/CT	10		✓													✓								6/17	✓						
BM	7	65	5/20	109	BWT/CT	9		✓													✓								6/17				✓			COYOTE
BMY	7	45	6/17	204	BWT/CT	9	✓														✓								7/22	✓						
BMY	7	51	6/17	199	BWT/CT	UN					✓										✓								6/17	✓						
BMY	7	51	6/17	202	MALLARD	4	✓				✓										✓								6/17				✓			UNKNOWN
JK	7	53	6/17	47	MALLARD	UN					✓										✓								6/17				✓			MAGPIE
JK	7	53	6/17	48	BWT/CT	UN					✓										✓								6/17				✓			RACCOON
BMY	7	59	6/17	197	BWT/CT	UN					✓										✓								6/17				✓			WEASEL
JK	7	61	6/17	45	GWT	7		✓													✓								7/22	✓						
JK	7	63	6/17	44	MALLARD	5	✓															✓							7/22				✓			MAGPIE
JK	7	65	6/17	42	BWT/CT	5	✓			✓											✓								7/22			✓				
JK	7	67	6/17	40	SHOVELLER	9		✓													✓								7/22				✓			MAGPIE
JK	7	67	6/17	41	GADWALL	10		✓													✓								7/22	✓						
BMY	7	69	6/17	196	MALLARD	3	✓					✓										✓							6/19					✓		

Form D-1 Field Form Unit No. 8

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	
		No Nests Either Walk on Transect																																	

Form D-1 Field Form Unit No. 9

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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
9	85	5/20	16	PINTAIL	7		✓							✓														6/18	✓						
9	87	5/20	170	MALLARD	6		✓													✓								6/18	✓						
9	87	5/20	169	MALLARD	11		✓													✓								6/18	✓						
9	89	5/20	175	BWT/CT	9		✓													✓								6/18	✓						
9	89	5/20	173	MALLARD	10		✓													✓								6/18	✓						
9	89	5/20	172	BWT/CT	10		✓													✓								6/18				✓			COYOTE
9	91	5/20	18	MALLARD	7		✓													✓								6/18	✓						
9	91	5/20	17	MALLARD	UN					✓										✓								5/20				✓			COYOTE
9	93	5/20	22	MALLARD	UN					✓										✓								5/20				✓			COYOTE
9	93	5/20	21	MALLARD	JUST START															✓								6/18			✓				
9	95	5/20	179	MALLARD	8	✓														✓								6/18	✓						
9	95	5/20	176	REDHEAD	11		✓													✓								6/18				✓			COYOTE
9	97	5/20	180	MALLARD	6	✓														✓								6/18	✓						
9	85	6/18	207	BWT/CT	8															✓								6/18	8						
9	89	6/18	253	BWT/CT	8		✓													✓								7/23	✓						
9	89	6/18	252	BWT/CT	UN															✓								6/18	✓						
9	89	6/18	67	REDHEAD	8 RED 2 BWT		✓													✓								7/23			✓				
9	89	6/18	68	MALLARD	8		✓													✓								7/23	✓						
9	89	6/18	69	BWT/CT	11		✓													✓								7/23	✓						
9	89	6/18	70	MALLARD	6		✓													✓								7/23	✓	2					
9	89	6/18	71	MALLARD	5	✓														✓								7/23	✓	3					
9	91	6/18	211	MALLARD	7		✓													✓								7/23	✓	3					
9	91	6/18	208	MALLARD	6		✓													✓								7/23	✓	1					

Form D-1 Field Form Unit No. 9 (Cont)

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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
9	93	6/18	222	PINTAIL	6		✓													✓								7/23			✓				
9	93	6/18	218	BWT/CT.	8															✓								6/18	8						
9	95	6/18	257	GADWALL	8		✓													✓								7/23			✓				
9	95	6/18	256	MALLARD	JUST		START													✓								7/23			✓				
9	95	6/18	255	MALLARD	1	✓														✓								7/23			✓				
9	95	6/18	254	REDHEAD	5	✓														✓								7/23			✓				
9	97	6/18	258	PINTAIL	3	✓														✓								7/24	✓						
9	101	6/18	72	PINTAIL	Un					✓										✓								6/18				✓			WEASEL
9	87	6/18	66	GADWALL	10		✓													✓								7/23	✓						✓

Form D-1 Field Form Unit No. 10

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	
NO NESTS MAY WALK																																			
10	109	6/18	64	MALLARD	9		✓													✓								7/22			✓				
10	111	6/18	65	GADWALL	10		✓								✓													7/22				✓			MAGPIE

Form D-1 Field Form Unit No. 11

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	
		No Nests Found on Either Walk on Transect																																	

Form D-1 Field Form Unit No. 14

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	33	5/19	104	MALLARD	5	✓														✓								6/15				✓			COYOTE
14	35	6/16	30	BWT/CT	UN					✓										✓								6/16				✓			SKUNK

Form D-1 Field Form Unit No. 15

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	5/19	51	MALLARD	8		✓													✓								6/16	✓						
15	41	5/19	105	MALLARD	5	✓								✓														6/16				✓			COYOTE
15	51	5/19	52	BWT/CT	10		✓													✓								6/16	✓						
15	43	6/16	190	MALLARD	8	✓														✓								7/20	✓	2					
15	45	6/16	193	BWT/CT	9					✓										✓								6/16				✓			WEASEL
15	49	6/16	32	REDHEAD	UN					✓										✓								6/16				✓			MAGPIE
15	49	6/16	34	BWT/CT	9		✓													✓								7/20	✓	1					
15	49	6/16	35	BWT/CT	8 BWT 2 MALL		✓													✓								7/20	✓	1					

Form D-1 Field Form Unit No. 16

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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
16	55	5/19	106	MALLARD	5	✓								✓														6/16				✓			SKUNK

Form D-1 Field Form Unit No. 17

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	
17	75	5/19	154	MALLARD	7		✓													✓								6/16	✓						
17	77	5/19	3	MALLARD	UN					✓										✓								5/19				✓			RACCOON
17	83	5/19	159	PINTAIL	9		✓													✓								6/16	✓						
17	83	6/16	39	BWT/CT	10		✓													✓								7/17	✓						

Form D-1 Field Form Unit No. 18

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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
18	91	5/19	160	BWT/CT	7		✓													✓								6/17	✓						
18	91	5/19	161	MALLARD	8		✓													✓								6/17	✓						
18	91	5/19	162	MALLARD	10	✓																	✓					6/17				✓			MAGPIE
18	93	5/19	5	MALLARD	1	✓																	✓					6/22	✓						
18	93	5/19	6	MALLARD	5	✓														✓								6/17	✓						
18	93	5/19	8	MALLARD	9		✓													✓								6/22				✓			COYOTE
18	93	5/19	10	MALLARD	UN					✓										✓								5/19				✓			COYOTE
18	95	5/19	11	MALLARD	8		✓																✓					6/22	✓						
18	107	5/19	12	MALLARD	8		✓													✓								6/17	✓						✓
18	99	6/17	61	BWT/CT	UN															✓								6/17	✓						
18	93	6/22	UN	MALLARD	UN															✓								6/22	✓						
18	103	6/17	123	PINTAIL	6		✓													✓								7/26			✓				

Form D-1 Field Form Unit No. 19

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	
NO	NESTS	MAY	WALK																																
	ON	TRANSECT																																	
19	11	6/15	58	MALLARD	2	✓			✓											✓								7/16				✓			RAVEN
19	13	6/15	59	MALLARD	1	✓			✓											✓								7/16			✓				
19	15	6/15	60	BWT/CT	7		✓													✓								7/16				✓			SKUNK

Form D-1 Field Form Unit No. 20

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	N. Hatch.	Desert.	Destr.	Flooded	Unknown	
~~20~~ ~~21~~		NO NESTS MAY																																	
WALK ON TRANSECT																																			
20	21	6/15	184	UNKNOWN	UN					✓										✓								6/15				✓			COYOTE
20	23	6/15	186	MALLARD	UN					✓										✓								6/15				✓			MAGPIE

Form D-1 Field Form Unit No. 21

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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
21	37	~~5/18~~ 5/18	103	BWT/CT	UN					✓										✓								5/18				✓			COYOTE
21	37	~~6/15~~ 6/15	28	GWT	UN					✓										✓								6/15				✓			RACCOON
21	47	6/15	29	GADWALL	10		✓							✓														7/16	✓	7					

Form D-1

Observer: ____________

Field Form

WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA

Unit No. 22

Year: 1981

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	

No Nests on Either Walk found On Transect

Form D-1 Field Form Unit No. 23

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	
No Nests Found																																			
Either Walk																																			

Form D-1 Field Form Unit No. 24

Observer: _____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

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	
24	117	5/21	181A	PINTAIL	?		✓										✓											6/18	✓						

Form D-1: Waterfowl Production Surveys

Multiple Units

51-100

Form D-1 Field Form Unit No.

Observer: Steve WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:

Unit No.	Transect No.	First Observation: Date	First Observation: Nest No.	First Observation: Species	First Observation: No. Eggs	Nest Status: Laying	Nest Status: Incub.	Nest Status: Covered	Nest Status: Desert.	Nest Status: Destr.	Nest Status: Flooded	Nest Status: Unknown	Cover Type: Sx	Cover Type: Sve	Cover Type: Crx	Cover Type: Dst	Cover Type: Gx	Cover Type: Mof	Cover Type: Wx	Cover Type: Jba	Cover Type: Cx	Cover Type: Ex	Cover Type: Tla	Cover Type: Sva	Cover Type: Dike	Cover Type: Ditch	Cover Type: Flooded	Fate: Date	Fate: Hatched	Fate: No Hatch.	Fate: Desert.	Fate: Destr.	Fate: Flooded	Fate: Unknown	Remarks (No. & expl. on back
		5-18		Nothing																															
15	39	5-19	51	Mallard	8		✓													1				1											
15	51	1	52	BWT	10		✓													1				1											
15	53	1	53	Mall	1	✓														1				1											
7	69	5-20	54	BWT	10		✓													1															
10	57	1	55	Mall	5		✓													✓															
7	47	1	56	Redhead	7		✓		Rod											1								5-20				✓			
		5-21		Nothing																															
		5-22																																	

Form D-1 Field Form Unit No._____

Observer: Bob WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 1981

Unit No.	Transect No.	First Observation: Date	Nest No.	Species	No. Eggs	Nest Status: Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Cover Type: Sx	Sve	Crx	Dst	Gx	Mof	Wx	Uba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Fate: Date	Hatched	No Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back
20	21	5/18/81	101	Mourn. Dove	0	✓						✓		✓																					
20	23	5/18/81	[illegible]	Unknown Pass. Pair Teal	—					✓										✓															
21	37	"	103	BW/C Teal	—					✓		✓								✓															
14	33	5/19/81	104	Mallard	5		✓													✓															
15	41	5/19/81	105	"	5		✓							✓					✓																
16	55	"	106	Mallard	5		✓							✓						2															
16	55	"	107	M. Dove	1		✓							1						2															
7	67	5/20	108	unknown	—					✓	✓									✓							✓								
7	65	"	109	Teal	9		✓													✓															✓
7	63	"	110	BW/C Teal	10		✓													✓															
7	63	"	111	Mallard	9		✓													✓															
7	63	"	112	Mallard	—					✓										✓															
~~7~~	~~55~~	~~"~~	~~113~~	~~?~~						✓										✓															
7	53	"	113	Mallard	6		✓												✓	✓															
7	53	"	114	9/3 Teal	—					✓										✓															
7	53	"	115	Mallard	—					✓										✓															
7	43	"	116	Mallard	—					✓									✓						✓										
1	71	"	117	Mallard	8		✓													✓															
2	73	5/21	118	Teal (?)	—					✓	Poss. Dump									✓															
3	97	"	119	~~Mallard~~ PINTAIL	8		✓									✓				✓															

Form D-1 Field Form Unit No. Data Sheet 1

Observer: Myiton WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 5/81

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	17	5/18/81	151	Pintail	3					✓										✓												✓			Pred
17	73	5/19/81	152	Mallard	0	✓														✓															
	75	"	153	Mallard	1	✓														✓															
	75	"	154	Mallard	7		✓													✓															
	~~75~~	~~"~~	~~155~~	~~Mallard~~	~~1~~															~~✓~~												✓			~~No nest found~~
	81	"	156	Teal	11		✓													✓															
	83	"	157	Teal	7		✓													✓															
	83	"	158	Mallard	9		✓													✓															ON MAN MADE ISLAND
	83	"	159	Pintail	9		✓													✓															✓
18	91	"	160	Teal	7		✓													✓															
	91	"	161	Mallard	8		✓													✓															
	91	"	162	Mallard	10	✓																✓													
	97	"	163	Mallard	9		✓													✓															
	97	"	164	Mallard	9		✓													✓															
	97	"	165	Mallard	7		✓													✓															between 105 & 107
6	29	5/20/81	166	Pintail	8	✓														✓															
	37	"	167	Mallard	10		✓							✓																					
9	87	"	168	Mallard	0															✓															
	87	"	169	Mallard	11		✓						✓							✓															
	87	"	170	Mallard	6		✓													✓															
	87	"	171	Mallard	1	✓														✓															
	89	"	172	Teal	10		✓													✓															
	89	"	173	Mallard	10		✓													✓															
	89	"	174	Mallard	10		✓													✓															

Form D-1 Field Form Unit No._____

Observer:_____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

Unit No.	Transect No.	First Observation: Date	Nest No.	Species	No. Eggs	Nest Status: Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Cover Type: Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Fate: Date	Hatched	No Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back
19	off	5/18	1	PINTAIL	9	✓		Bet	ween	15	&	2	9	Pond						✓		Line			19										
19	off	5/18	2	MALLARD	5		✓																												
17	77	5/19	3	Mallard						✓										✓								5/19	✓	2					
17	77	5/19	4	C. Coot																								↓							
18	93	5/19	5	Mallard	1	✓																	✓												
18	93	"	6	Mallard	5	✓														✓															
18	93	5/19	7	BJT/27	10		✓													✓															
18	93	5/19	8	Mallard	9		✓													✓															—
18	93	"	9	Pintail	3	✓														✓															
18	93	"	10	Mallard	unk					✓										✓								5/19				✓			
18	95	"	11	"	8		✓													✓			✓												
18	107	"	12	Mallard	8		✓													✓															
6	33	5/20	13	Mallard	9		✓							✓			✓																		
6	35	5/20	14	Mallard	just start															✓															
6	35	5/20	15	C. Coot		Not		Marked												✓								5/20	✓						
9	85	5/20	16	PINTAIL	7		✓							✓																					
9	91	5/20	17	Mallard			✓			✓										✓								5/20							
9	91	5/20		Marsh Hawk	4		✓													✓															
9	91	5/20	18	Mallard	7		✓													✓															
9	91	5/20	19	Mallard	4	✓														✓															
9	93	5/20	20	Mallard	11		✓													✓															
9	93	5/20	21	"	Just Start, No Hen, Not Marked																														

Form D-1 Field Form Unit No. Data Sheet 2

Observer: Mytton WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 5/81

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	
9	89	5/20/81	175	Teal	9		✓													✓															
	95	"	176	Redhead	11		✓													✓															
	95	"	177	Mallard	4-5					✓										✓								5/20				✓			Unknown
	95	"	178	Teal	8		✓													✓															
	95	"	179	Mallard	8	✓														✓															
	97	"	180	Mallard	6	✓														✓															
	103	"	181	Pintail		✓														✓															
24	117	5/21/81	181A	Pintail	6					✓										✓								5/20				✓			Magpie
4	115	"		Mourning Dove	2		✓																												✓
11	139	5/22/81	182	Pintail	5	✓														✓															
3	87	"	183	Pintail	6	✓														✓															

Form D-1 Field Form Unit No._____

Observer:_____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

		First Observation				Nest Status							Cover Type															Fate							
Unit No.	Transect No.	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
9	93	5/20	22	Mallard			✓			✓										✓								5/20				✓			
9	99	5/20	23	Redhead	5		✓													✓															
10	121	5/21	24	M. Dew	1 young									✓			2												1						
4	111	5/21	25	PINTAIL	9		✓													✓															
4	111	5/21	26	Mallard	7	✓														✓															
4	111	5/21	27	Mallard	10		✓													✓															

Form D-1 Field Form Unit No.

Observer: Bob Majors WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:

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	6/15/81	120	Mallard	2		✓							✓						✓															
22	61	6/15/81	121	Gadwall	7		✓												✓	✓									✓		✓				
17	95	6/17/81	122	Coot	?	possibly													✓	Water									✓						
18	103	"	123	Pintail	6		✓						✓							✓															
18	107	"	124	Coot	0							✓										✓													
18	107	"	125	Coot	2	✓	✓															✓													
18	107	"	126	Coot	1	✓	✓																✓												
18	105	"	127	Coot	4		✓															✓													
18	105	"	128	Coot	1	✓	✓																	✓											
11	121	6/18/81	129	N. Dove	2		✓											✓	✓																
~~4~~	~~130~~	~~6/19/81~~	~~130~~	~~Mallard~~	~~7~~				✓											✓															

Form D-1 Field Form Unit No._____

Observer: SG WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

	Unit No.	Transect No.	First Observation: Date	Nest No.	Species	No. Eggs	Nest Status: Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Cover Type: Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Fate: Date	Hatched	No. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back
✓	19	9	6-15	57	BWT	2	X													X																
	19	17		151																													X			
	19	17		2																													X			
	19	17		1																													X			
✓	19	11		58	MAL	2	X			X											X															
✓	19	13		59	MAL	1	X			X											X															
	19	15		60	BWT	7		X													X															
	22	63		61	Dove	2		X													X															
	14	41	6-16	105																													X			✓
	15	51		52	BWT																									X	8					
	15	53		53	Show	10		X																												
	16	55		106																													X			
	17	75		155				NOT		A				rest							Single		egg						disembalted							
	17	75		154																										X	4					

Form D-1 Field Form Unit No._____

Observer:_____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

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	
21	37	6/15	28	GWTeal?						✓										✓								6/15				✓			
21	47	"	29	Gadwall	10		✓							1						2															
14	35	6/16	30	M Teal						✓										✓								6/16				✓			
		6/16	#31	Mallard		Redheck														✓								6/17	✓	1					
15	49	6/16	31	Coot	Not Shot																	✓													
15	49	6/16	32	Redhead	9					✓				1						2								6/16			5	4			
15	49	6/16	33	Bwt/CT						✓																		6/16			2	2			
15	49	6/16	34	Bwt/CT	9		✓							2						1															
15	49	6/16	35	Bwt/CT	8 Bwt 2 CT				Mallard											✓															✓
15	49	6/16	36	Coot	2	✓																		✓											
16	71	6/16	37	Gadwall	9		✓							1						2															
17	73	6/16	38	CT/Bwt	5	✓											2		1																
Lake		5/k-17	-73	Mallard		17			Back				of	CL			—			Nothing							found	6/16							
17	83	6/16	39	CT/Bwt	10		✓													✓								~~6/16~~ 9							
17	83	6/16	159	Dwt - Redheck																								6/16	9						
17	83	6/16	158	Mal																								6/16				✓			
7	67	6/17	40	Shoveler	9		✓													✓															
7	67	6/17	41	Gadwall	10		✓													✓															
7	65	"	42	Bwt/CT	5	✓			~~Possibly destr~~																		~~6/17~~					✓			
7	65	"	43	Mallard	1	✓																													
7	65	"	109	Bwt/CT	9	✓					Redheck																	6/17				✓			
7	63	"	44	Mallard	5	✓																													
7	63	"	110	Redheck																								6/7	✓						

Form D-1 Field Form Unit No.

Observer: Mytton WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 6/81

Unit No.	Transect No.	First Observation: Date	Nest No.	Species	No. Eggs	Nest Status: Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Cover Type: Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Fate: Date	Hatched	No. Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back
20	21	6/15/81	184	UNK	0					✓										✓												X			
20	21	"	185	Mallard	8		✓													✓															
20	23	"	186	Mallard	5	✓				✓										✓												✓			
20	23	"		M. Dove	2	✓														✓															
20	23	"	187	Mallard	7	✓	✓													✓															
20	33	"																																	
20	35	"																																	
21	41	"	188	Pintail	10		✓													✓															
21	41	"	189	Pintail	8		✓													✓															
21	41	"		M. Dove	2																														
21	43																																		
21	49	"																																	
21	51	~~M. Dove~~		M. Dove	2		✓																												
21	53	"																																	
14	23	"																																	
14	25	"																																	
14	27	"																																	
14	29	"																																	
14	31	6/16/81																																	
14	33	"		M Dove																✓									✓						2 young No [illegible]
14	33	"	104	Mallard						✓										✓												✓			
15	43	"	7	M. Dove	2															✓															
15	43	"		M. Dove	2															✓															
15	43	"	190	Mallard	8	✓														✓															

Form D-1 Field Form Unit No._____

Observer: Mayton WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 6/81

Unit No.	Transect No.	First Observation: Date	Nest No.	Species	No. Eggs	Nest Status: Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Cover Type: Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Fate: Date	Hatched	No Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl on back
15	43	6/16/81	191	Redhead	1					✓										✓												✓			
15	43	"	192	Coot	12	✓														✓															
15	45	"	193	BW Teal	9				✓											✓												✓			
15	59	"																																	
15	61	"																																	
15	67	"																																	
15	69	"																																	
15	79	"																																	
15	81	"																																	
7	71	6/17/81	194	Mallard	6						✓									✓													✓		
7	71	"	195	Coot	6	✓															✓	✓													
7	69	"		M Dove	2		✓								✓	✓																			
7	69	"	196	Mallard	3	✓					✓									✓															
Recheck 7	69	"	54	BWT																✓									✓						
7	59	"	197	Teal	7					✓										✓												✓			
7	59	"	198	Pintail	6	✓														✓															
7	57	"	55	Mallard	5					✓										✓												✓			
7	51	"	199	Teal	2					✓										✓												✓			
7	51	"	200	Mallard	8	✓														✓															
7	51	"	201	Teal	4	✓														✓															
7	49	"	202	Mallard	4	✓			✓											✓												✓			
7	49	"	203	Mallard	12		✓													✓															
7	49	"		M. Dove	2									✓																					

Form D-1 Field Form Unit No._____

Observer: SG WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

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
18	91	6-17	160																									6-17	X						
18	91		161																										X	5					
18	91		162																													X			
9	99		61	BWT	?															X									X						
9	99		62	MAL	8		X													X															
9	99		63	BWT	6		X													X															
9	97		180																										X						
18	97		164																										X						
18	97		163																													X			~
10	109	6-18	64	MAL	9		X													X								6-18							
10	111		65	GAD	10		X								X																				
9	87		66	GAD	10		X													X															
9	87		169																									6-18	X						
9	87		170																										X						
9	87		171	MAL	6		X																												
9	89		67	RED	8 red 2 mal		X													X															
9	89		68	MAL	8		X																												
9	89		69	BWT	11		X																												
9	89		172																													X			
9	89		70	MAL	6		X																												
9	89		252	BWT																X									X						
9	89		71	3 diff duck eggs	5	X																													
9	89		174																										X						
9	89		175																										X						

Form D-1 Field Form Unit No._____

Observer:_____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

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
7	65	6/17	111	Redhead																								6/17	6	3					
7	61	6/17	45	BWT	7		✓													✓															
7	55	6/17	46	Mallard						✓																		6/17				✓			
7	53	"	113	Redhead																								6/17				✓			
7	53	"	47	Mallard						✓										✓								6/17				✓			
7	53	"	48	BWT 1/2 T						✓																		6/17				✓			
7	44	"	49	Redhead	11		✓																												
6	37	"	50	Mallard						✓																		6/17				✓			
6	37	"	167	Redhead																								6/17	✓						✓

Form D-1 Field Form Unit No. _____

Observer: Mytton WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 6/81

	Unit No.	Transect No.	First Observation: Date	Nest No.	Species	No. Eggs	Nest Status: Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Cover Type: Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Fate: Date	Hatched	No Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)
		45	6/17/81	204	Teal	9	✓														✓															
	7	49	6/17/81																																	
	6	35	"	205	Mallard	7		✓													✓															
Redwd	6	33	"	14	Mallard					✓																										
"		33		13	Mallard	9					✓																						✓			
	9	107	6/18/81																																	
	3	107	"																																	
	3	105	"	206	Gadwall	4	✓														✓															
	9	105	"																																	
	9	83	"																																	
	9	85	"	207	Teal	8															✓									✓						
Redwd	9	85	"	16																										✓						
R	9	91	"	17																																
	9	91	"	208	Mallard	6		✓													✓															
	9		20' south of	209 Hawk		3																														
	9	91	"	209	Mallard	3	✓														✓															
Redw	9	91	"	18																										✓						
	9	91	"	210	Mallard	11		✓													✓															
	9	91	"	211	Mallard	7		✓													✓															
	9	91	"	19																													✓			
	9	91	"	212	Gadwall	8		✓													✓															
	9	91	"	213	Mallard	4	✓														✓															
	9	91	"	214	Gadwall	9		✓													✓															
	9	91	"	215	Gadwall	12		✓													✓															

Form D-1 Field Form Unit No._____

Observer: SG WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

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
9	101	6-18	72							X										X								6/8				X			
9	103		181																										X						
3	103		73	BWT	8		X													X															
6	29		166																													X			
8	73	6-19	74	BWT																												X			
8	73		118																													X			
4	123			Dove	2		X																												

Form D-1 Field Form Unit No._____

Observer: Mayhan WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year: 6/81

	Unit No.	Transect No.	First Observation: Date	Nest No.	Species	No. Eggs	Nest Status: Laying	Incub.	Covered	Desert.	Destr.	Flooded	Unknown	Cover Type: Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	Fate: Date	Hatched	No Hatch.	Desert.	Destr.	Flooded	Unknown	Remarks (No. & expl. on back)
	9	91-93	6/18/81	216	Mallard	5Z															✓									✓						
	9	93	"	217	Mallard	5Z															✓									✓						
	9	93	"	218	Teal	8															✓									✓						young in nest
	9	93	"	219	Pintail	8		✓													✓															
	9	93	"	220	Mallard/Pintail	3	✓			✓											✓											✓				
	9	93	"	221	Pintail	8		✓													✓															ready to hatch
Pached	9	93	"	20	Pintail	11																														
Rech	9	93		22	Destroyed																															
	9	93	"	222	~~Mallard~~ Pintail	6		✓													✓															✓
	3	95	"	223	Pintail	4Z					✓										✓												✓			
	3	93	"		M. Dove	2		✓						✓		✓																				
	3	91	"																																	
	3	89	"	224	Gadwall	8		✓													✓															
			6/19/81																																	
	2	79	"																																	
	8	79	"																																	
	8	77	"																																	
	2	77	"																																	
	1	59	"																																	
	1	57	"																																	
	4	115	"																																	
	4	113	"																																	
					FINISH																															

Form D-1 Field Form Unit No._____

Observer:_____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

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	
29	115	6/18	250	Mallard																✓								6/18	✓						
		6/18	169	Redhead																								6/18	✓						
		"	170	"																								6/18	✓	2					
9	94	6/18	251	Mallard	5	✓														✓															
9	89	"	252	Butter																✓								6/18	✓						
9	89	"	173	Redhead																								6/18	✓						
9	89	"	253	Butter	8		✓													✓															
9	95	"	176	Redhead																								6/18				✓			
9	95	"	254	Redhead	5	✓														✓															✓
9	95	"	255	Mallard	1	✓														✓															
9	95	"	256	Mallard	Just Start															✓															
9	95	"	179	Redhead																								6/18	✓	4					
9	95	"	257	Redhead	8		✓													✓															
9	97	"	180	Redhead																								6/18	✓						
9	97	"	258	Pintail	3		✓													✓															
3	97	"	119	Redhead																								6/18				✓			
3	87	"	259	Mallard	7		✓													✓			✓												
3	87	"	183	Redhead																								6/18	✓						
3	85	"	260	mallard	2		✓													✓															
8	94	6/19	156	Redhead																								6/19				✓			
8	94	"	157	"																								6/19	✓	1					
1	71	"	117	"																								6/19				✓			
4	117	"	261	Mourning dove	1	✓																													

Form D-1 Field Form Unit No._____

Observer:_____ WATERFOWL PRODUCTION SURVEY DUCK & COOT NESTING DATA Year:_____

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	
4	117	6/19	262	Gadwall	9		✓												✓		✓														
4	117	6/19	263	Redhead																✓								6/19	✓	✓					
4	117	6/19	264	M. Dove	2	Young																						6/19	✓						

Form D-4:

WPS Duck Nesting Transects
Individual Unit Summary

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 1 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	1	0	0		1										1							
Pintail																						
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	1	0	0		1									1								
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 2 Recorder: Kauffield Year: 1981

Transect Coverage in % 50 (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																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.	1	0	0		1										1							
G-W Teal																						
Ruddy																						
Unknown																						
Total	1	0			1										1							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 3 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	Mx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	2	1	50	1											2							
Pintail	1	0	0		1							1										
Gadwall	1	1	100												1							
Shoveller																						
Teal B-W & Cinn.	1	0	0		1										1							
G-W Teal																						
Ruddy																						
Unknown																						
Total	5	2	40	1	2							1			4							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 4 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	2	1	50		1										2							
Pintail	1	1	100											1	1							
Gadwall	1	1	100											1								
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Redhead	1	1	100												1							
Unknown																						
Total	5	4	80		1									1	4							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 5 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	0																					
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 6 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	2	0	0	1	1										2							
Pintail	1	0	0		1										1							
Gadwall																						
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	3	0	0	1	2										3							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 7 Recorder: Kauffield Year: 1981

Transect Coverage in % 50 (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	1			6	1								1	5	2				1		
Pintail																						
Gadwall	1	1													1							
Shoveller	1	0			1										1							
Teal B-W & Cinn.	9	4		1	4										9							
G-W Teal	1	1													1							
Ruddy																						
Unknown																						
Total	20	7	35	1	11	1								1	17	2				1		
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 8 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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																						
Gadwall																						
Shoveller																						
Teal																						
B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	0																					
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 9 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	16	11	69	3	2										16							
Pintail	4	2	50	1	1				1						3							
Gadwall	2	1	50	1											2							
Shoveller																						
Teal B-W & Cinn.	7	6	86		1										7							
G-W Teal																						
Ruddy																						
Redhead	3	0	0	2	1										3							
Unknown																						
Total	32	20	63	7	5				1						31							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 10 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	1	0	0	1											1							
Pintail																						
Gadwall	1	0	0		1					1												
Shoveller																						
Teal																						
B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	2	0	0	1	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. 11 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard																						
Pintail																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	0																					
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 14 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	1	0	0		1										1							
Pintail																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.	1	0	0		1										1							
G-W Teal																						
Ruddy																						
Unknown																						
Total	2	0	0		2										2							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 15 Recorder: KAUFFELD Year: 1981

Transect Coverage in % 50 (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	3	2	67		1				1						2							
Pintail																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.	4	3	75		1										4							
G-W Teal																						
Ruddy																						
Redhead	1	0	0		1										1							
Unknown																						
Total	8	5	63		3				1						7							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 16 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	1	0	0		1				1													
Pintail																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	1	0	0		1				1													
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 17 Recorder: Kauffield Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	2	1	50		1										2							
Pintail	1	1	100												1							
Gadwall																						
Shoveller																						
Teal B-W & Cinn.	1	1	100												1							
G-W Teal																						
Ruddy																						
Unknown																						
Total	4	3	75		1										4							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 18 Recorder: Kauffield Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	9	6	67		3										6			3				
Pintail	1	0	0	1											1							
Gadwall																						
Shoveller																						
Teal B-W & Cinn.	2	2	100												2							
G-W Teal																						
Ruddy																						
Unknown																						
Total	12	8	67	1	3										9			3				
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 19 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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	Nx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded
Mallard	2	0		1	1										2							
Pintail																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.	1	0			1										1							
G-W Teal																						
Ruddy																						
Unknown																						
Total	3	0	0	1	2										3							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 20 Recorder: Kauffield Year: 1981

Transect Coverage in % 50 (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	1	0	0		1										1							
Pintail																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown	1	0	0		1										1							
Total	2	0	0		2										2							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 21 Recorder: Kauffold Year: 1981

Transect Coverage in % 50 (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																						
Gadwall	1	1	100						1													
Shoveller																						
Teal B-W & Cinn.	1	0	0		1										1							
G-W Teal	1	0	0		1										1							
Ruddy																						
Unknown																						
Total	3	1	33		2				1						2							
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 22 Recorder: Kauffield Year: 1981

Transect Coverage in % 50 (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																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	0																					
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 23 Recorder: Kauffeld Year: 1981

Transect Coverage in % 50 (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																						
Gadwall																						
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	0																					
Coot																						

*Obtain data from Field Form D-1

Form D-4

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----INDIVIDUAL UNIT SUMMARY*

Unit No. 24 Recorder: Kauffield Year: 1981

Transect Coverage in % 50 (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	1	100									1										
Gadwall																						
Shoveller																						
Teal B-W & Cinn.																						
G-W Teal																						
Ruddy																						
Unknown																						
Total	1	1	100									1										
Coot																						

*Obtain data from Field Form D-1

Forms D-3 thru D-9:

D3 - WPS Duck Brood Sample Data

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

D9 – WPS Primary Duck Nesting Cover Types – Refuge Annual Summary

Form D-3
Observer: _____

WATERFOWL PRODUCTION SURVEY -- DUCK BROOD SAMPLE DATA

Year: _____

Date	Mallard			Pintail			Gadwall			Shoveller			B-W Teal			G-W Teal			Redhead			Ruddy		
	Unit No.	Pond No.	No. duckl. Class IIc & III Br.	Unit No.	Pond No.	No. duckl. Class IIc & III Br.	Unit No.	Pond No.	No. duckl. Class IIc & III Br.	Unit No.	Pond No.	No. duckl. Class IIc & III Br.	Unit No.	Pond No.	No. duckl. Class IIc & III Br.	Unit No.	Pond No.	No. duckl. Class IIc & III Br.	Unit No.	Pond No.	No. duckl. Class IIc & III Br.	Unit No.	Pond No.	No. duckl. Class IIc & III Br.
7/7			6			6									8			8			8			
			7												7			4			7			
			7												7						8			
			7												6									
			8												8									
			8																					
			6																					
			5																					
7/29			7			6			9			6			6			7			5			6
			8			7			8			10			5			5			6			5
			5			6			7			4			6			8			7			
			8			8			9			9			4						6			
2	8		8			6			10			7			6						7			
8	9		5			6			4			8			3									
7	8		6			7			11						6									
8	7		6						8						6									
10	6		7												6									
5	6		8		8/52			8/66			6/44				5									
7	7		7			6.5			8.3			7.3		15/89				5/32			8/54			2/11
	5		8															6.4			6.8			5.5
39/269	7		7												5.9									
6.9	7		8																					

Form D-5

WATERFOWL PRODUCTION SURVEY

DUCK NESTING TRANSECTS----REFUGE ANNUAL SUMMARY*

Recorder: Kauffield

Year: 81

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

Species	(1) No. Nests on transect (2) % Refuge total (3) # Hatch	1	2	3	4	Unit 24	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	Total
Mallard	(1)	1		2	2		2	8		16	1		1	3	1	2	9	2	1				51
	(2)																						
	(3)	0		1	1		0	1		11	0		0	2	0	1	6	0	0				23-45.1%
Pintail	(1)			1	1	1	1			4						1	1						10
	(2)																						
	(3)			0	1	1	0			2						1	0						5-50%
Gadwall	(1)			1	1			1		2	1									1			7
	(2)																						
	(3)			1	1			1		1	0									1			5-71%
Shov.	(1)							1															1
	(2)																						
	(3)							0															0-0%
B-W & Cinn. Teal	(1)		1	1				9		7			1	4		1	2	1		1			28
	(2)																						
	(3)		0	0				4		6			0	3		1	2	0		0			16-57%
G-W Teal	(1)							1												1			2
	(2)																						
	(3)							1												0			1-50%
Redhead	(1)				1					3				1									5
	(2)																						
	(3)				1					0				0									1-20%
Ruddy	(1)																						
	(2)																						
	(3)																						
____	(1)																						
	(2)																						
	(3)																						
____	(1)																						
	(2)																						
	(3)																						
Unknown	(1)																		1				1
	(2)																						
	(3)																		0				0-0%
Total	(1)																						
	(2)																						
	(3)																						
Coot	(1)	1	1	5	5	1	3	20		32	2		2	8	1	4	12	3	2	3			105
	(2)																						
	(3)	0	0	2	4	1	0	7		20	0		0	5	0	3	8	0	0	1			51-48.6%
	%	0	0	40	80	100	0	35		63	0		0	63	0	75	67	0	0	33			

* Obtain data from Summary Form D-4

Form D-6

CALCULATIONS FOR DETERMINATION OF CORRECTED SPECIES COMPOSITION

(1) Species	Species Composition of Transect Data (2) No. Nests From Form D-5)	(3) Sp. Comp. Known Nests in %	(4) Weight (Col. 3 x [redacted] 2	Species Composition of Breeding Population (5) No. Breeding Ducks	(6) Sp. Comp. in %	(7) Weight (Col. 6 x 1)	(8) Weight (Col. 4 + Col. 7)	Corrected Sp. Comp. of Nests (9) Sp. Comp. in % (Col. 8 / 3)	(10) Sp.Comp. in Nos. (Col. 9 x total
Mallard	51	49.1	98.2	1920	26.6	26.6	124.8	41.6	1611
Pintail	10	9.6	19.2	880	12.2	12.2	31.4	10.5	407
Gadwall	7	6.7	13.4	870	12.1	12.1	25.5	8.5	329
Shoveller	1	1.0	2.0	800	11.1	11.1	13.1	4.4	170
BWT/ Cinn.Teal	28	26.9	53.8	1900	26.4	26.4	80.2	26.9	1042
G.W. Teal	2	1.9	3.8	240	3.4	3.4	7.2	2.4	93
Redhead	5	4.8	9.6	450	6.2	6.2	15.8	5.3	205
Ruddy				80	1.1	1.1	1.1	0.4	15
Widgeon				30	0.4	0.4	0.4	Dropped	
Scaup				40	0.6	0.6	0.6		
(Total)	104								
Unknown	1								
TOTAL	105	100%	200%	7210	100%	100%	300%	100%	3872
Coot									

Form D-6a

CALCULATIONS FOR DETERMINATION OF DUCKS PRODUCED BY SPECIES

Species	(10) Sp. Comp. in Nos. (Col. 9 x total	Hatching Success of Nests			Average Class IIc & III Broods			Sp.Comp.of Ducks Produced to Flight Age	
		(11) No. Nests Hatched on Transects (From Form D-5)	(12) Hatching Success in % (Col.11 / Col. 2)	(13) Total Nests Hatched (Col. 10 x Col.12)	(14) No. Broods Recorded (From Form D-3)	(15) No. Ducklings Recorded (From Form D-3)	(16) Average Brood Size (Col.15 / Col.14)	(17) No. Ducks Produced (Cols.13 x 16)	(18) Sp. Comp. in %
Mallard	1611	23	45.1	727	39	269	6.9	5,016	39.8
Pintail	407	5	50.0	204	8	52	(6.5) 6.8	1,387	11.0
Gadwall	329	5	(71.1) 48.6	160	8	66	(8.3) 6.8	1,088	8.6
Shoveller	170	0	(0) 48.6	83	6	44	(7.3) 6.8	565	4.5
B.W. Teal									
Cinn. Teal	1042	16	57.1	595	15	89	5.9	3,510	27.9
G.W. Teal	93	1	(50) 48.6	45	5	32	(6.4) 6.8	306	2.4
Redhead	205	1	(20) 48.6	100	8	54	6.8	680	5.4
Ruddy	15	–	(-) (48.6)	7	2	11	(5.5) 6.8	48	0.4
Unknown									
TOTAL	3872	51	48.6	1921	91	617	6.8	12,600	100%

Form D-9

WATERFOWL PRODUCTION SURVEY

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

Recorder: KAUFFELD Year: 1981

(1) No. Nests (2) % in Primary Type		Primary Type															
		Sx	Sve	Crx	Dst	Gx	Mof	Wx	Jba	Cx	Ex	Tla	Sva	Dike	Ditch	Flooded	TOTAL
Mallard	(1)		2					1	43	2		3					51
	(2)		3.9					1.9	84.3	3.9		5.9					
Pintail	(1)		1			2			7								10
	(2)		10.0			20.0			70.0								
Gadwall	(1)		1	1				1	4								7
	(2)		14.3	14.3				14.3	57.1								
Shoveller	(1)								1								1
	(2)								100								
B-W & Cinn. Teal	(1)								28								28
	(2)								100								
G.W. Teal	(1)								2								2
	(2)								100								
Redhead	(1)								5								5
	(2)								100								
Ruddy	(1)																
	(2)																
	(1)																
	(2)																
	(1)																
	(2)																
Total	(1)		4	1		2		2	91	2		3					105
	(2)		4	1		2		2	87	2		3					
Coot	(1)																
	(2)																

* Obtain data from Summary Form D-4

Field Notes/Misc. Memo

MAY 1981

ON TRANSECT			A	D
8' 15-37	#51	MALLARD	6/16 Sweep 5/19	
0' 15-51	#52	BWT/CT	6/16 SC 5/19	
3' 7-69	#54	BWT/CT	6/17 SC 5/20	
3' 7-57	#55	Mallard		5/20 Raven
1' 17-75	#154	Mallard	6/16 SC 5/19	
0' 17-83	#159	PINTAIL	6/16 SC 5/19	
5' 18-91	#160	BWT/CT	6/17 SC 5/19	
6' 18-91	#161	Mallard	6/17 SC 5/19	
8' 18-91	#162	Mallard	5/20	6/17 Magpie
4' 6-29	#166	PINTAIL	5/20	6/18 Coyote
8' 9-87	#169	Mallard	6/18 SC 5/20	
8' 9-87	#170	Mallard	6/18 SC 5/20	
1' 9-89	#172	BWT/CT	5/20	6/18 Coyote
6' 9-89	#173	Mallard	6/18 SC 5/20	
3' 9-89	#175	BWT/CT	6/18 SC 5/20	
5' 9-95	#176	Redhead	5/20	6/18 Coyote
2.5' 9-95	#177	Mallard		5/20 Unk
3' 9-95	#179	Mallard	6/18 Sweep 5/20	
7' 9-97	#180	Mallard	6/18 SC 5/20	
2' 24-103	#181A	PINTAIL		5/21 Magpie
19" 17-77	#3	Mallard		5/19 Raven
4'9" 18-93	#5	Mallard	6/22 Active 5/19	
5'3" 18-93	#6	Mallard	6/17 SC 5/19	
5'2" 18-93	#8	Mallard	5/19	6/22 Coyote
1'1" 18-93	#10	Mallard		5/19 Coyote
6'2" 18-95	#11	Mallard	6/22 SC 5/19	
3'6" 18-107	#12	Mallard	6/17 SC 5/19	

OFF TRANSECT			A	D
18' 15-53	(53)	MALLARD	Shoveller 6/16 Sweep 5/19	
74' 7-47	(56)	Redhead	Sweep 6/23 5/20	
36' 19-17	(151)	PINTAIL		5/18 Skunk
17' 17-73	(152)	Mallard	5/19	6/16 Parent
99' 17-75	(153)	Mallard	5/19	6/22 Parent
225' 17-81	(156)	BWT/CT	5/19	6/19 Coyote
120' 17-83	(157)	BWT/CT	6/19 SC 5/19	
26' 17-83	(158)	Mallard	5/19	6/16 Magpie
375' 18-97	(163)	Mallard	6/17 SC 5/19	
63' 18-97	(164)	Mallard	6/17 SC 5/19	
300 105 107 18-	(165)	Mallard	5/19	6/17 Coyote
54' 6-37	(167)	Mallard	6/17 SC 5/20	
45' 9-87	(168)	Mallard	5/20	6/22 Parent
20' 9-87	(171)	Mallard	6/18 Active 5/20	
11' 9-89	(174)	Mallard	6/18 SC 5/20	
15' 9-95	(178)	BWT/CT	6/22 SC 5/20	
77' 9-103	(181)	PINTAIL	6/18 SC 5/20	
11' 11-139	(182)	PINTAIL	5/22	6/22 Parent
29' 3-87	(183)	PINTAIL	6/18 SC 5/22	
30' 17-19	(1)	PINTAIL	5/18	6/15 Coyote
46' 19-17	(2)	Mallard	5/18	6/15 Magpie
22' 18-93	(7)	BWT/CT	6/17 SC 5/19	
26' 18-93	(9)	Pintail	5/19	6/22 Coyote

ON TRANSECT			A	D	OFF TRANSECT			A	D
5'2" 6-33	# 14	Mallard	5/20	6/17 Deserted	14'3" 6-33	(13)	Mallard	5/20	6/17 Raven
3' 9-85	# 16	PINTAIL	6/18 SC 5/20		9'6" 9-91	(19)	Mallard	5/20	6/17 Coyote
7'6" 9-91	# 17	Mallard		5/20 Coyote	12' 9-93	(20)	Mallard	6/17 SC 5/20	
4'9" 9-91	# 18	Mallard	6/18 SC 5/20		53' 9-99	(23)	Red head	5/20	6/22 Raven
3'3" 9-93	# 21	Just Start - Not Marked Mallard	5/20	6/17 Deserted					
0'6" 9-93	# 22	Mallard		5/20 Coyote					
2'8" 4-111	# 25	Pintail	6/19 SC 5/21						
2'2" 4-111	# 26	Mallard	6/19 SC 5/21						
6'6" 4-111	# 27	Mallard	5/21	6/22 Raccoon					
8' ~~20-37~~	# 103	BWT/CT	5/18	6/15 Coyote	12' 20-23	(102)	BWT/CT		5/18 Coyote
3' 14-33	# 104	Mallard	5/19	6/15 Coyote	11' 7-53	(113)	Mallard	5/20	6/17 Skunk
7' 15-41	# 105	Mallard	5/19	6/16 Coyote	10' 7-53	(115)	Mallard	~~5/~~	5/20 Skunk
5' 16-55	# 106	Mallard	5/19	6/16 Skunk					
~~1' 7-65~~	~~# 108~~	Last year Nest Canvasback		5/20 Skunk					
4' 7-65	# 109	BWT/CT	5/20	6/17 Coyote					
2' 7-63	# 110	BWT/CT	6/17 SC 5/20						
2' 7-63	# 111	Mallard	6/17 SC 5/20						
5' 7-63	# 112	Mallard	~~5/~~	5/20 Un M					
3' 7-53	# 114	BWT/CT	6/17 Coyote	5/20 Un A					
3' 7-43	# 116	Mallard		5/20 Raven					
8' 1-71	# 117	Mallard	5/20	6/19 Skunk					
6' 2-73	# 118	BWT/CT		5/21 Skunk					
3-91	# 119	PINTAIL	5/21	6/18 Coyote					

Mallard - 32
BWT/CT - 10
Pintail - 6
Redhead - 1

MAY NESTS — NOT REFOUND

ON TRANSECT

~~#52~~	~~15 - 51~~ (0')	~~BWT/CT~~	
#177	9 - 95 (2.5)	Mallard	- previously destroyed
#181A	24 - 113?	PINTAIL	- 5/21 destroyed
~~#~~			
# 8	18 - 93	Mallard	6/22 Coyote
# 11	18 - 95	Mallard	6/22 Successful
# 27	4 - 111	Mallard	6/22 Raccoon
# 112	7 - 63	Mallard	- 5/20 destroyed
56	7 - 47 (74')	Redhead	6/23 Success, 3 No hatch
153	17 - 75 (99')	Mallard	6/22 Deserted
168	9 - 87 (45')	Mallard	6/22 Deserted
178	9 - 95 (65')	BWT/CT	6/22 Success 1 no hatch
182	11 - 139	PINTAIL	6/22 Deserted
9	18 - 93 (26')	PINTAIL	6/22 Coyote
23	9 - 99 (55')	Redhead	6/22 Raven
102	20 - 23 (12')	BWT/CT	5/18 destroyed

South of S
meadow Sacramento
2.0 ft of ct

18-93

PRODUCTION ON ALAMOSA
1981

Species	SOUTH TIP	MIDDLE	NORTH	Total
Mallard	659	256	165	1,080
BWT/CT	739	370	302	1,411
GADWALL	151	168	168	487
SHOVELLER	67	34	34	135
PINTAIL	34	50	101	185
REDHEAD	118	17	50	185
BWT	101	50	50	201
RUDDY	34			34
TOTAL	1,903	945	870	3,718

June

	Active or Success	Destroyed	Deserted Flooded	Total
Mallard	14	4	1	19
BWT/CT	13	5	0	18
Gadwall	7	0	0	7
Redhead	3	1	0	4
Unknown	1	2	0	3
Pintail	3	0	0	3
GWT	1	1	0	2
Shoveler	1	0	0	1
	43	13	1	57
	75%	23%	2%	

Destroyed Nests

Species	May Nests	June Nests	Total
Coyote	13	0	13
Skunk	3	2	5
Raccoon	2	2	4
Raven	2	1	3
Magpie	2	4	6
Unknown	2	2	4
Weasel	0	2	2
	24	13	37

MAY

Species	Success	Destroyed	Decoy	Total
Mallard	𝍸 𝍸 𝍸	S, R, M, U, RC, C, C, C, C, RC, C, C, S, U, R, C, C, C, C, S	II	
BWT/CT	𝍸	C, M, C		
PINTAIL	III	C		
Redhead				
Mallard	15	15	2	32
BWT/CT	5	5	0	10
PINTAIL	3	3	0	6
Redhead	0	1	0	1
	23	24	2	49
80 - 6 of 38 Latched	47%	49%	4%	

Species	Success or Active	Destroyed	Decoy or Hooked	Total
Mallard	𝍸 𝍸 IIII	M, M, M, S, W, R, U, S, RC,	1	
BWT/CT	𝍸 𝍸 III			
Gadwall	𝍸 II	M,		
Redhead	III	W, U		
Unknown	I			
PINTAIL	III	RC,		
BWT	I			
Shoveler	I			

Comparison Between 1980-81 Transects

ON TRANSECT

	1980	1981	% Incr
Mallard	19	32	+68%
PINTAIL	5	6	+20%
BWT/CT	11	10	-10%
Redhead	0	1	–
Unknown	3	1	–
TOTAL	38	50	+32%

TOTAL ON & OFF TRANSECT

MALLARD	36	49
PINTAIL	8	12
BWT/CT	17	15
Shoveler	1	0
GWT	1	0
Redhead	0	3
Unknown	3	1
	66	80

PREDATION COMPARISON

COYOTE	2	4
Raccoon	1	1
Skunk	0	4
Raven & Magpie	4	4
Un. Mamm.	2	1
Unknown	3	1

12 of 64 total or 18.8% — 15 of 80 or 18.8%

ON TRANSECT 9 of 38 total or 23.7% — 12 of 50 or 24.0%

JUNE 1981

ON TRANSECT

			A	D
0' 19-11	#58	Mallard	6/15	
0' 19-13	#59	Mallard	6/15	
2' 19-15	#60	BWT/CT	6/15	
3' 9-99	#61	BWT/CT	Success 6/17	
8' 18-109	#64	Mallard	6/18	
4' 10-111	#65	GADWALL	6/18	
5' 9-87	#66	GADWALL	6/18	
2' 9-89	#67	Redhead	6/18	
2.5' 9-89	#68	Mallard	6/18	
4.5' 9-89	#69	BWT/CT	6/18	
8' 9-89	#70	Mallard	6/18	
3' 9-89	#71	Unknown	6/18	
8' 9-101	#72	Unknown		6/18 Weasel
3' 3-103	#73	BWT/CT	6/18	
9' 20-21	#184	Unknown		6/15 Unknown
8' 20-23	#186	Mallard		6/15 Magpie
9' 15-43	#190	Mallard	6/16	
3' 15-45	#193	BWT/CT		6/16 Weasel
1' 7-69	#196	Mallard		6/17 Flooded
1.5' 7-59	#197	BWT/CT		6/17 Raven
5' 7-51	#199	BWT/CT		6/17 Unknown
5' 7-51	#202	Mallard		6/17 Magpie
0' 7-45	#204	BWT/CT	6/17	
0' 9-85	#207	BWT/CT	6/18 Success	
3' 9-91	#208	Mallard	6/18	

OFF TRANSECT

			A	D
11' 19-9	#57	BWT/CT	6/15	
15' 9-99	#62	Mallard	6/17	
14' 9-99	#63	BWT/CT	6/17	
11.5' 8-73	#74	BWT/CT		6/18 Magpie
46' 20-21	#185	Mallard	6/15	
10.5' 20-23	#187	Mallard	6/15	
70' 21-41	#188	PINTAIL	6/15	
100' 21-41	#189	PINTAIL	6/15	
50' 15-43	#191	Redhead		6/16 Coyote
90' 7-71	#194	Mallard		6/17 Flooded
150' 7-59	#198	PINTAIL	6/17	
40' 7-51	#200	Mallard	6/17	
20' 7-51	#201	BWT/CT	6/17	
10' 7-49	#203	Mallard	6/17	
60' 6-35	#205	Mallard	6/17	
21' 3-105	#206	Gadwall	6/18	
20' 9-91	#209	Mallard	6/18	

BIG MATTOON

ON TRANSECT

			A	D
9' 9-91	# 211	Mallard	6/18	
0' 9-93	# 218	BWT/CT	6/18 Sweeps	
1' 9-93	# 222	PINTAIL	6/18	
2.5' 3-89	# 224	GADWALL	6/18	
4' B-103 (Bob Masses)	# 123	PINTAIL	6/17	
2' 21-37	# 28	GWT		6/15 Raccoon
1' 21-47	# 29	GADWALL	6/15	
8'4" 14-35	# 30	BWT/CT		6/16 SKUNK
215' 15-49	# 32	Redhead		6/16 Magpie
4' 15-49	# 34	BWT/CT	6/16	
4.6' 15-49	# 35	BWT/CT	6/16	
6'6" 17-83	# 39	BWT/CT	6/16	
1' 7-67	# 40	Shoveller	6/17	
0' 7-67	# 41	GADWALL	6/17	
5'3" 7-65	# 42	BWT/CT	6/17	
1'9" 7-63	# 44	Mallard	6/17	
1' 7-61	# 45	GWT	6/17	
6'6" 7-53	# 47	Mallard		6/17 Magpie
4'6" 7-53	# 48	BWT/CT		6/17 Raccoon
7'8" 6-37	# 50	Mallard		6/17 SKUNK

BILL MATTON

OFF TRANSECT

			A	D
0'6 9-91	# 210	Mallard	6/18	
46 9-91	# 212	Gadwall	6/18	
20' 9-91	# 213	Mallard	6/18	
10' 9-91	# 214	Gadwall	6/18	
14' 9-91	# 215	Gadwall	6/18	
0'6 9-93	# 216	Mallard	6/18 Sweeps	
25' 9-93	# 217	Mallard	6/18 Sweeps	
90' 9-93	# 219	PINTAIL	6/18	
90' 9-93	# 220	Mallard	6/18	
75' 9-93	# 221	PINTAIL	6/18	
17' 3-95	# 223	PINTAIL		6/18 Coyote
10' 22-61	# 121	GADWALL	6/15	
21' 15-49	# 33	BWT/CT		6/14 Raccoon
31' 16-71	# 37	GADWALL	6/16	
14' 17-73	# 38	BWT/CT	6/16	
12' 7-65	# 43	Mallard	6/17	
11' 7-55	# 46	Mallard		6/17 Raven
0'0 7-45	# 49	GADWALL	6/17	

ON TRANSECT			A	D	OFF TRANSECT	A	D
2' •9-89	# 252	BWT/CT	6/08 Sawers		15' •24-113 #250	Mallard	6/18 Sawers
8'5" •9-89	# 253	BWT/CT	6/18		0'6 •9-89 #251	Mallard	6/18
6' •9-95	# 254	Redhead	6/18				
3' •9-95	# 255	Mallard	6/18				
7'8" •9-95	# 256	Mallard	6/18				
3' •9-95	# 257	Gadwall	6/18				
8'5" •9-97	# 258	PINTAIL	6/18				
6' •3-87	# 259	Mallard	6/18				
0' •3-85	# 260	Mallard	6/18				
2' •4-117	# 262	Gadwall	6/19				
4'6" •4-117	# 263	Redhead	6/19 Sawers				
2' •18-93	# UN	Mallard	6/22 Sawers				
Total		59			TOTAL	37	

OTHER SPECIES

MAY WALK

	NEST NO	SPECIES	U	T	Ft from Centerline	DATE	FATE
Bob Major	101	M. Dove	20	21	9'	5/18	Just start
	107	M. Dove	16	55	4'	5/19	Incubating
	4	C. Goose	17	77	63'	5/19	Successful
Jon Knuffield	15	C. Goose	6	35	15'	5/20	Successful
	UN	M. Hawk	9	91	?	5/20	Successful - 6/18
	124	M. Dove	10	121	1'	5/21	Successful - 1 young
Bill Mutton	UN	M. Dove	4	115		5/21	Incubating

JUNE WALK

	120	M. Dove	19	5	2'	6/15	Incubating
•	122	Coot	17	95	3'	6/17	Successful
•	124	Coot	18	107	8'	6/17	Just Start
Bob Major	125	Coot	18	107	3'	6/17	Laying - 2 eggs
•	126	Coot	18	107	11'	6/17	Laying - 1 egg
•	127	Coot	18	105	11'	6/17	Incub - 4 egg
•	128	Coot	18	105	0'	6/17	Laying 1 egg
	129	M. Dove	11	129	7'	6/18	Incub - 2 eggs
	261	M. Dove	4	117	15'	6/19	Laying - 1 egg
Jon Knuffield	264	M. Dove	4	117	1'	6/19	Success - 2 young
•	31	Coot	15	49	0'	6/16	Just Start
•	36	Coot	15	49	8'	6/16	Laying - 2 eggs
	UN	M. Dove	20	23		6/15	Incub - 2 eggs
	UN	M. Dove	21	41		6/15	" - 2 "
Bill Mutton	UN	M. Dove	21	51		6/15	" - 2 "
	UN	M. Dove	14	33		6/16	Hatched - 2 young
	UN	M. Dove	15	43		6/16	Incub - 2 eggs

OTHER SPECIES
JUNE WALK (CONT)

	NEST NO	SPECIES	U	T	Ft. from Coastline	DATE	FATE
	UN	M. Dove	15	43		6/16	Incub - 2 eggs
•	192	Coot	15	43	20'	6/16	Incub - 12 eggs
BILL MATTON	195	Coot	7	71	0'	6/17	Laying - 6 eggs
	UN	M. Dove	7	69		6/17	Incub - 2 eggs
	UN	M. Dove	7	49		6/17	Incub - 2 eggs
	UN	M. Dove	3	93		6/18	Incub - 2 eggs
STEVE GRAY	61	M. Dove	22	63	3'	6/15	Incub - 2 eggs
	UN	M. Dove	4	123		6/19	Incub - 2 eggs

from 81 file

United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO:

CO-3

MAILING ADDRESS:
Office of Migratory Bird Management
Terra Professional Building, Suite 103
1360 South Wadsworth Boulevard
Denver, Colorado 80226
Phone No. 234-5340

November 3, 1981

FILE
Nai
Espinosa
Martinez
Mondragon
Major
Gray
Information
NOV 6 REC'D

Jon Kauffeld, Assistant Refuge Manager
Monte Vista National Wildlife Refuge
P.O. Box 1148
Alamosa, Colorado 81101

Dear Jon:

Thanks for the opportunity to look at the results of your nesting study. In these days of endrin and other crises, it is fun to work with real-world data that relates to the resource.

In my opinion, you did get off the Mayfield track in that it is highly unlikely that you would find all incubating nests on the first day of incubation, i.e., all had 24 days to go. Probably you found some with 24 days to go and others with 23 days to go, 22 days, etc. to perhaps one or two nests with only one day to go. Over-stating the days to go, i.e., nest-days, leads to under estimating the daily mortality rates.

It appears to me that the best data set you have are from "laying" nests. You have "aged" them albeit on the basis of "full clutches" (which may bias the estimate of daily mortality downward a bit because re-nests often are less than full clutches, i.e., have less than 35 total days to go). Therefore your best estimate would be:

Hatched	Destroyed
1 x 34 = 34 nest days	5 x 34 = 170 nest days
1 x 32 = 32	2 x 33 = 66
2 x 30 = 60	1 x 32 = 32
1 x 29 = 29	1 x 31 = 31
1 x 28 = 28	6 x 30 = 180
2 x 27 = 54	1 x 27 = 27
1 x 26 = 26	1 x 25 = 25
Totals 263	531

- 531 x 0.4 = 212.4 + 263 = 475.4 nest days
- 17 destroyed nest ÷ 475.4 = 0.03576 daily mortality rate
- 1 - 0.03576 = 0.9642 daily survival rate
- 0.9642^{35} = 0.2796 probability of hatching.

Therefore, the 51 hatched nests you observed represented an estimated 182 nests initiated (51 ÷ 0.2796 = 182).

We have to ask whether or not these estimates are reasonable. We recognize that the sample of "aged" nests is small and obviously not a "normal distribution" among age categories (e.g., eight 5-egg nests). But, we do have a clue that things are not rosy when we see only one out of six 1-egg nests hatched (those nests are the best source of observed hatch rate information). And, the proportion of nests that were terminated when found is a second clue that destruction is high (although we recognize that it is much easier to find destroyed than it is hatched nests).

You have noted from the JWM article that I found daily survival rates were essentially identical during laying and incubation. Continued studies at Northern Prairie have demonstrated that to be "close enough for government work." If we assume identical rates, we can sort of reconstruct what you found in the "laying" and "incubating" categories, e.g.:

- 45 nests active when found and subsequently hatched ÷ 0.2796 (probability of hatch) = 161 nest initiations represented by "active" nests.

- 36 nests incubating when found and subsequently hatched ÷ 0.417 (survival rate over 24 days) = 86 nests entered incubation of which 51 were found = 0.59 "finding rate."

- 161 nests initiated - 86 nests entering incubation = 75 nests available only during laying stage of which 26 were found = 0.35 "finding rate."

This funky reconstruction suggests that you are doing a reasonable job of finding nests considering the intervals between your searches. The probabilities are that most of the nests that did not get beyond the "laying" stage would have been initiated and destroyed between searches. With little or no down and some predators, e.g., coyotes, that do not leave behind egg shells, I would not be disappointed at "missing" nearly two-thirds of such nests. The nests that made it to "incubating" are easier to find because they exist longer and accumulate down which helps "mark" the destroyed nests. In fact, if the same proportion of the estimated 182 initiated nests as "active" nests entered incubation (86 ÷ 161 = 53%) and my suspicions that you found most of the "destroyed when found" nests because there was down are correct, you actually accounted for many of the "missed" nests.

The results you have provided suggest to me that the estimates based upon the "laying" nests and the Mayfield Method are reasonable, i.e., that less than one-third of the duck nests initiated on Monte Vista in 1981 actually made it to the hatching stage.

I recommend that you consider "aging" the "incubating" nests in future studies. Enclosed is a copy of Weller's article on candling duck eggs for your reference. One hint, we used a section of relatively thin and flexible radiator hose instead of the mailing tube. The size was 8"-12" x 1 1/4" approximate diameter.

If you have any problems with these interpretations, please give me a call.

Sincerely yours,

Harvey

Harvey W. Miller
Central Flyway Representative

Enclosure

Regards to Mel & Family.

A SIMPLE FIELD CANDLER FOR WATERFOWL EGGS[1]

Milton W. Weller

Missouri Cooperative Wildlife Research Unit, University of Missouri, Columbia, Missouri

In nesting studies of waterfowl and other game birds it is often desirable to determine the stages of incubation of clutches of eggs. This information makes it possible to determine when incubation began and to calculate the date of hatching. In some studies, the stage of incubation has been determined by breaking an egg of each clutch. This is an unnecessary waste, and for species which lay parasitically in other birds' nests, such as the redhead and ruddy duck, the breaking of one egg has little value because eggs in a single nest may be in many stages of incubation.

Westerskov (1950) discussed the need for age determination of embryos and presented several methods which he used in the laboratory in working with pheasant and European partridge eggs. These methods were weighing, floating, and candling of eggs.

The use of egg weights in the field necessitates carrying a delicate balance and making calculations from the weights in order to determine the stage of incubation.

In the second method, eggs are floated in water; their buoyancy and position are related to the stage of incubation. While this method is satisfactory for use in the laboratory or for species which nest over water, it is inconvenient for land nesters. This technique permits rapid age determination in the early stages of incubation but becomes less accurate as incubation progresses.

By the use of a laboratory candler, Westerskov found that the size of the air cell and the early development of the embryo were good criteria for determining the stage of incubation of pheasant eggs. The increased density of the yolk mass plus the opacity of the shell reduced visibility so that the embryo could not be seen properly after the first week of incubation; but the size of the air cell proved an excellent criterion throughout. The use of the air cell in candling chicken eggs has been reported by many workers, including Banner (1920), and Lamon (1921).

Candling has been little used in the field because of the lack of simple and efficient equipment. Evans (1951) used a cardboard mailing tube for candling duck eggs in the field; from the comparative size of the air cell, he determined when the eggs were near hatching. Hanson (1954a) developed a battery-operated field candler which provided excellent visibility of many details of the egg. He presented a list of criteria and photographs of eggs at various stages of incubation (1954b).

In order to develop criteria by which the stage of incubation of duck eggs could be determined in the field with the simple mailing tube suggested by Evans, the present study was initiated in the spring of 1952. Twenty-six redhead, ten canvasback, five pintail, and five mallard eggs were candled when brought into the hatchery, found to be fresh, and were placed in an incubator. The development of these eggs was followed with the mailing tube candler.

Candler

The simplicity of the mailing tube is its principal advantage. It can be made sturdy by a coat of shellac and will hold an oval shape, thus reducing light-leakage. Any long flexible tube can be used. Evans (personal communication) prefers a large diameter rubber hose (as used in automotive cooling systems) because of its flexibility and durability. A notebook or magazine works well because it can be rolled so that its diameter is slightly less than that of the particular egg being examined. The egg is held tightly against the open end of the candling tube so that its long axis forms a right angle with that of the tube.

[1] Contribution from the Delta Waterfowl Research Station, Delta, Manitoba, and the Missouri Cooperative Wildlife Research Unit: U. S. Fish and Wildlife Service, Wildlife Management Institute, Missouri Conservation Commission, Edward K. Love Foundation, and University of Missouri cooperating. The writer wishes to acknowledge the advice and assistance of Wm. H. Elder and T. S. Baskett, Missouri Cooperative Wildlife Research Unit, and H. Albert Hochbaum and Peter Ward, Delta Waterfowl Research Station.

LIGHT SOURCE

The sun, even on cloudy days, provides sufficient illumination. Practice with the tube lends skill in using available light; the egg is usually viewed toward the sun, but can be held slightly away from the sun in order to clarify minor details. The tube should be held so that its shadow falls upon the inner corner of the eye, thus reducing the chance of light leakage between the nose and the candler.

CRITERIA FOR AGE DETERMINATION

The appearance of the developing embryo and its associated structures as seen through the candler are shown in Figure 1. Three views are provided of each stage because changes are often more apparent in one view than in another. There are five criteria which aid in age classification: size of the embryo when visible, shape and appearance of the yolk, development of the extra-embryonic circulatory system, density of the opaque areas, and the size of the air cell. Characteristics of redhead eggs at four day intervals are as follows:

UNINCUBATED—The yolk is barely visible due to its pale yellow color. It is free floating and the air cell is quite small. In unincubated eggs which have been deserted by the female, the yolk soon adheres to the shell membrane and turns brown.

FOUR DAYS—The embryo and the extra-embryonic vascular system are clearly visible and red in color (the "spider" stage of the poultryman). The yolk is yellow-orange and less solid than in the fresh egg. The margin of area vasculosa, the sinus terminalis, is often visible.

EIGHT DAYS—The outline of the embryo is less distinct, appearing as two isolated dark

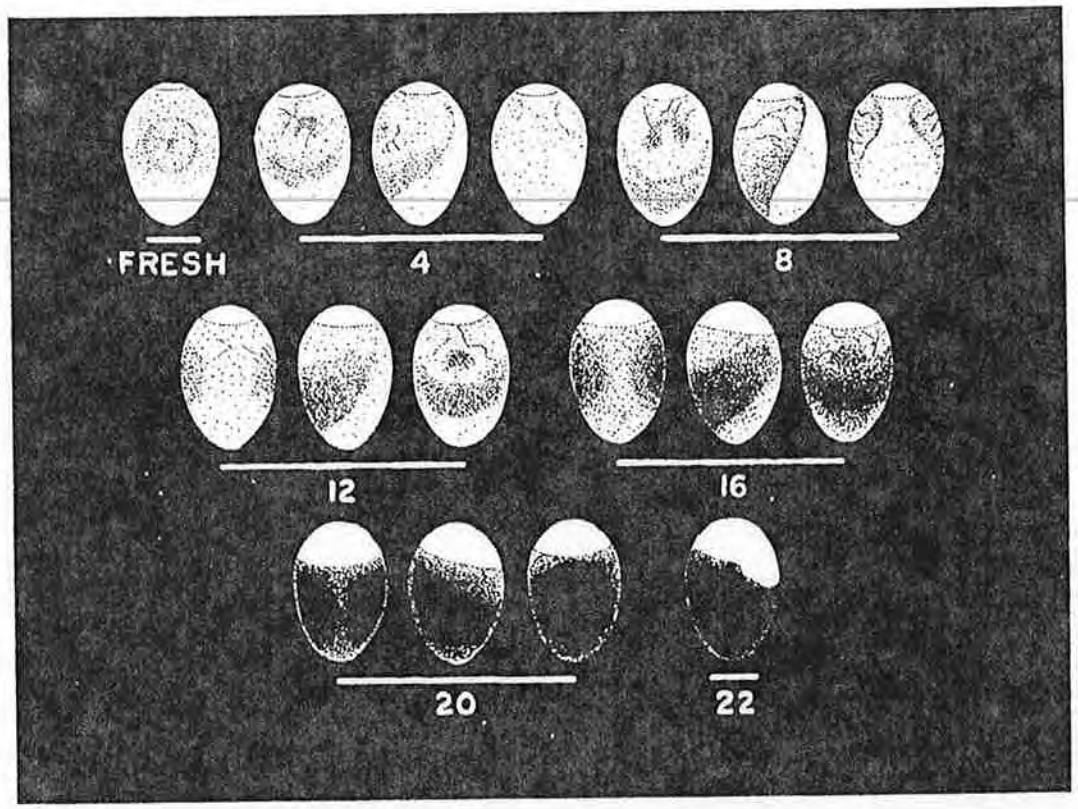

FIG. 1. Criteria for the determination of the stage of incubation of redhead eggs. Where three views are shown, they are from left to right: (1) Front view, with the embryo adjacent to the viewer, (2) Side view, with the egg rotated 90 degrees to the left, and (3) Rear view, with the egg rotated 180 degrees to the left from the front view.

areas. These are the head and the trunk; the thin neck is barely visible. A rocking motion of the embryo may be seen at this time but is retarded by handling. The yolk now appears to be more solid because it has been enveloped by the yolk sac and in the side view, the sinus terminalis is distinct; its margin may parallel the long axis of the egg or may be diagonal.

Twelve Days—The yolk sac has completely enclosed the yolk except for a small area opposite the embryo where the albumen is attached. The vascularization causes an increased density and less distinct outline of the yolk mass. The growth of the embryo forces the remaining yolk into two lobes, one lying on either side of the duckling. The most opaque areas outline these lobes where they are pressed against the shell. The embryo is indistinctly visible as a dark area isolated from the yolk.

Sixteen Days—When seen from the rear view, this stage differs from that of the twelve day stage in that the light band separating the embryo and the yolk mass is much narrower, due to an obvious increase in the size and opacity of the embryo. The air cell is noticeably larger than in the 12 day stage.

Twenty Days—The egg is now opaque, except for the air cell and the area immediately adjacent, plus a minute area at the small end. The lobes of the yolk mass are barely discernible.

Twenty-two Days—The bill of the duckling is now pressed against the inner shell membrane and is visible as a projection in the air cell.

Hatching occurs at twenty-four to twenty-eight days in the incubator according to Hochbaum (1944), Peter Ward, hatchery superintendent at the Delta Waterfowl Research Station (personal communication), and my own observations.

In embryos which die before hatching, the blood vessels and yolk appear brown. The observer will learn to distinguish these with practice.

Figure 1 and the age criteria described above are satisfactory for other species with a similar incubation period (canvasback and mallard). The pintail, and probably the blue-winged teal, which have an incubation period of 21 to 23 days, can be aged by using these same illustrations if it is realized that the last three stages represent 15, 18, and 20 days of incubation in these species. The technique is not sufficiently refined to make distinctions between species having incubation periods between 21 and 23 days.

Among the species examined, this method worked best with the eggs of the redhead, mallard, blue-winged teal, baldpate, and gadwall; it was more difficult with eggs of canvasback, pintail, and lesser scaup because of the greater density of their shells. The density of the shell structure or coloration was so great in the eggs of the ruddy duck, Canada goose, coot, sharp-tailed grouse, and Hungarian partridge, that the size of the air cell was the only practical criterion.

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