

Disease Biologist  
Sacramento NWR

May 7, 1979

Project Leader  
San Luis NWR Complex

Refuge Disease Report 1978-79

The first sign of Avian Cholera on Merced NWR, occurred on December 2, 1978. Avian Cholera continued to plague the Refuge until February 21, 1979. Refuge personnel picked up 287 dead birds during this period. The grasslands unit accounted for 94% of the birds picked up. This unit was monitored 5 days a week during the entire span of the outbreak. The remainder of the Refuge accounting for 6% of the mortality was surveyed on a once-a-week basis.

A total of 113 of the 287 birds picked up were necropsied; approximately 60% by Madison NHL and 40% by the California Fish and Game Disease Lab. 75% of the mortality of those birds necropsied was attributed to Avian Cholera, 12% Trauma, 10% No Diagnosis and 1.8% were suffering from Lead Poisoning when overcome by Avian Cholera. 87.8% of the total birds picked up, comprised of Pintail and Geese. Pintail were hit the hardest, accounting for 35.2% followed by Ross' Goose with 22.3%, Cackling Canada Goose 12.2%, White Fronted Goose 9.4% and Snow Goose at 8.7%.

Attached are three tables. The first and second summarize the birds necropsied and incinerated. The third table is a combined table showing total mortality. If you have any questions, Cathy, just give me a call.

Sincerely,

Leon A. Littlefield  
Project Leader

LRRAUEN/dh

Enclosures

TABLE I

NECROPSY RESULTS OF MERCED NWR

<u>SPECIE</u>	<u>NUMBER</u>	<u>ADULT</u>	<u>JUV.</u>	<u>AGE UNKNOWN</u>	<u>MALE</u>	<u>FEMALE</u>	<u>SEX UNKNOWN</u>	<u>DIAGNOSIS</u>
SNOW GOOSE	11	0	2		5	5	1	Avian Cholera
	1	1			1			Trauma-Gunshot
	2	2			1	1		No Diagnosis
Subtotal	14	12	2		7	6	1	
ROSS' GOOSE	30	29	1		18	11	1	Avian Cholera
	2	2			2			Avian Cholera/Trauma
	1	1			1			Avian Cholera/Lead Poisoning
	4	4			3	1		Trauma-Gunshot
	2	2			2			No Diagnosis
Subtotal	39	38	1		26	12	1	
CAKCLING CANADA GOOSE	15	15			7	8		Avian Cholera
	1		1			1		Trauma
	2	1	1		1		1	No Diagnosis
Subtotal	18	16	2		8	9	1	
WHITE FRONTED GOOSE	9	3	6		6	3		Avian Cholera
	1		1		1			No Diagnosis
Subtotal	10	3	7		7	3		
WHISTLELING SWAN	1		1		1			Starvation
	1		1				1	No Diagnosis
Subtotal	2		2		1		1	
PINTAIL	10	10			8	2		Avian Cholera
	5	5			3	2		No Diagnosis
Subtotal	15	15			11	4		

TABLE I

NECROPSY RESULTS OF MERCED NWR - CONTINUED

<u>SPECIE</u>	<u>NUMBER</u>	<u>ADULT</u>	<u>JUV.</u>	<u>AGE UNKNOWN</u>	<u>MALE</u>	<u>FEMALE</u>	<u>SEX UNKNOWN</u>	<u>DIAGNOSIS</u>
MALLARD	1	1			1			Avian Cholera/Lead Poisoning
	1	1				1		Trauma Gunshot
Subtotal	2	2			1	1		
COOT	3	3				3		Avian Cholera
	1	1					1	Trauma Gunshot
Subtotal	4	4				3	1	
GREEN WINGED TEAL	1	1			1			Trauma Gunshot
CANVASBACK	1	1				1		Trauma Gunshot
SHOVELER	1	1			1			Avian Cholera
SANDHILL CRANE	1	1					1	Avian Cholera
PHEASANT	1					1		Trauma
LONG BILLED CURLEW	1					1		Trauma
SNOWY EGRET	1	1			1			No Diagnosis
AVOCET	1	1			1			Trauma Gunshot
SORA RAIL	1		1		1			Avian Cholera
TOTAL NECROPSY	113							

TABLE II

WATERFOWL MORTALITY OF MERCED NWR NOT SENT TO DISEASE LAB

<u>SPECIE</u>	<u>NUMBER</u>	<u>ADULT</u>	<u>JUVENILE</u>	<u>AGE UNKNOWN</u>	<u>MALE</u>	<u>FEMALE</u>	<u>SEX UNKNOWN</u>	ALL BIRDS WERE HEAVILY SCAVENGED
ROSS' GOOSE	25	25					25	
SNOW GOOSE	11	10	1				11	
WHITE FRONTED GOOSE	17	11	6				17	
CACKLING CANADA GOOSE	17	17					17	
PINTAIL	86	86			53	33		
MALLARD	3	3			2	1		
SHOVELER	7	7			2	5		
RINGNECK	1	1			1			
COOT	7	7					7	

TOTAL MORTALITY 174

TABLE III

TOTAL MORTALITY FOR MERCED NWR

<u>SPECIE</u>	<u>NUMBER</u>	<u>ADULT</u>	<u>JUVENILE</u>	<u>AGE UNKNOWN</u>	<u>MALE</u>	<u>FEMALE</u>	<u>SEX UNKNOWN</u>
SNOW GOOSE	25	22	3		7	6	12
ROSS' GOOSE	64	63	1		26	12	26
CAKCLING CANADA GOOSE	35	32			7	8	17
WHITE FRONTED GOOSE	27	14	13		7	3	17
WHISTLING SWAN	2		2		1		1
PINTAIL	101	101			64	37	
MALLARD	5	5			3	2	
SHOVELER	8	8			3	5	
GREEN-WINGED TEAL	1	1			1		
CANVASBACK	1	1				1	
RINGNECKED DUCK	1	1			1		
COOT	11	11				3	8
SANDHILL CRANE	1	1					1
PHEASANT	1					1	
LONG-BILLED CURLEW	1					1	
SNOWY EGRET	1	1			1		
AVOCET	1	1			1		
SORA RAIL	1		1		1		
TOTAL	287						