

Memorandum

TO : Regional Refuge Biologist DATE: March 30, 1987
Portland, OR

FROM : Wildlife Biologist
San Luis NWR Complex
Los Banos, CA

SUBJECT: Disease Loss Report, 1986-87

Attached are the 1986-87 Wildlife Disease Reports for San Luis, Kesterson, and Merced NWR's. Also attached is a summary of necropsy results from 57 birds sent to the National Wildlife Health Lab (NWHL) and 4 birds sent to the CDF&G Wildlife Investigations Lab. This report also includes a summary of birds salvaged from the West Grasslands WMA, Modesto Sewer Pond and Mapes' Ranch near Modesto.

The major disease outbreaks in 1986-87 involved snow and Ross' geese at Merced NWR and Aleutian Canada geese dying at the Modesto Sewer ponds, Salinas Gun Club in the North Grasslands, Mapes' Ranch near Modesto, and the Sierra-Duckville Gun Clubs in the South Grasslands.

A total of 104 birds were salvaged at Merced NWR. The avian cholera outbreak occurred between January 2 and March 17, 1987. Timing of the outbreak is summarized in Figure 1 and shows that the outbreak proceeded slowly for more than two months. Of the birds salvaged, 73% were snow and Ross' geese found primarily in the major roost areas in EG-B (25%), EG-C (17%), LF-B (18%), and EM-D (11%) (Table 1). Of the 37 birds necropsied from Merced NWR, 20 were diagnosed as dying from avian cholera infection, 2 unknown cause of death, 1 crippling loss, 1 lead poisoning, and 13 specimens assumed to be avian cholera were saved as teaching specimens (Table 2). A total of 35 hours were spent searching for and picking up dead birds.

Disease loss at San Luis NWR was limited to a juvenile red-tailed hawk that died of a heavy parasite burden, and two double-crested cormorants and one gadwall that have not been diagnosed.

Three birds (2 ruddy, 1 coot) were picked up at Kesterson NWR (South Gallo) in late January and early February and diagnosed as having died of avian cholera. These were the only birds found dead on the refuge.

An avian cholera outbreak occurred in the Aleutian Canada goose population throughout the Northern San Joaquin Valley beginning in mid-January. A total of 54 Aleutian Canada geese were found dead, with outbreaks occurring at the Modesto Sewer Ponds (31), Salinas Gun Club in the North Grasslands (13), Duckville-Sierra Gun Clubs in the South Grasslands (1), and on the Mapes' Ranch near Modesto (4). Eleven Aleutians were necropsied by the NWHL and diagnosis confirmed nine died of avian cholera and two died from lead poisoning. One bird that died of avian cholera at the Salinas Gun Club had also contracted avian tuberculosis. These necropsies provide the first evidence of lead poisoning and avian tuberculosis in wild Aleutian Canada geese. The two lead poisoned birds were found on the Mapes' Ranch and in the South Grasslands.

Disease monitoring of Aleutian Canada geese and pick-up of dead birds was poorly coordinated this year. The lack of a disease contingency plan caused uncertainty in responsibility of monitoring and coordination in the disease outbreak of a federal endangered species. The Aleutian Canada goose disease contingency plan needs to be completed and agreed upon by all cooperating agencies to prevent the occurrence of a disease going unnoticed in the Aleutian Canada goose population.

In addition to the 13 Aleutian Canada geese found at the Salinas Gun Club, 60 other birds were also found dead. The number of birds found by species is listed on the Disease Loss Report form and included 29 ducks, 14 geese, one gull, 10 coots, and 6 unidentified small Canada geese that were either cacklers or Aleutians. Twelve of the 14 birds submitted to the NWHL for necropsy were diagnosed as having died of avian cholera with one other having died of lead poisoning. One suspected lead poisoning case has not been necropsied at this time.

One endangered Peregrine falcon was found dead in the South Grasslands on February 5, 1987. The falcon had been seen the previous two days perched on a powerpole on Almond Drive. The NWHL confirmed avian cholera as the cause of death.

The majority of birds that died in the South Grasslands were snow geese (7 of 8 birds picked-up). Avian cholera and lead poisoning was diagnosed as the cause of death by the NWHL.

Disease monitoring in the North and South Grasslands has been minimal in the past. Small losses occur annually and disease is generally dismissed as being

normal. Since the potential population at risk includes 20-25% of the endangered Aleutian Canada goose population, more emphasis should be placed on monitoring and control of losses of these birds to disease.

In the future the Refuge will coordinate disease monitoring in the Grasslands WMA with California Department of Fish and Game Unit Biologists and the Aleutian Canada goose management team.

DSEVERSON:sc

Dan Severson

Figure 1. Timing of avian cholera outbreak on Merced NWR in 1986-87

<u>Date</u>	<u>No. of birds Picked Up</u>
1/2	1
1/5	15
1/8	1
1/9	1
1/13	8
1/16	3
1/20	7
1/23	12
1/26	4
1/28	12
1/30	10
2/3	9
2/5	12
2/10	2
2/18	2
3/2	4
3/17	1
	<u>104</u>

Table 1. Birds species salvaged by unit at Merced NWR in 1986-87

	EAST GRASSLANDS		EAST MARSH						WEST MARSH			LEVEE FIELD		TOTAL
	B	C	B	C	D	E	F	G	H	I	J	B	C	
Snow	14	4	5		5		2	1	3	3		6	6	49
Ross'	6	9		1	1	1				2	1	5	1	27
White-front	2	1			1						1	1		6
Cackler	2						1							3
Pintail					2							4		6
Mallard		1			1			1						3
Wigeon					1							1		2
Ruddy		1												1
Coot	2	2						1				2		7
Total	26	18	5	1	11	1	3	3	3	5	2	19	7	104

Table 2. SUMMARY OF NECROPY RESULTS-1986-87

<u>SPECIES</u>	<u>DATE</u>	<u>LOCATION</u>	<u>CAUSE OF DEATH</u>
Ross' Goose	01/05/87	Merced NWR EG-B	Avian Cholera
Ross' Goose	01/05/87	Merced NWR EG-B	Avian Cholera
Ross' Goose	01/05/87	Merced NWR EG-B	Gunshot/A.C.
Ross' Goose	01/26/87	Merced NWR EG-B	Avian Cholera
Ross' Goose	01/20/87	Merced NWR WM-I	Avian Cholera
Ross' Goose	01/23/87	Merced NWR EM-F	Avian Cholera
Ross' Goose	01/20/87	Merced NWR WM-H	Avian Cholera
Ross' Goose	01/20/87	Merced NWR WM-H	Avian Cholera
Ross' Goose	01/16/87	Merced NWR LF-C	Unknown/Emaciated
Ross' Goose	01/20/87	Merced NWR WM-I	Avian Cholera
Ross' Goose	01/16/87	Merced NWR LF-C	Avian Cholera
Ross' Goose	01/23/87	Merced NWR LF-B	Avian Cholera
Ross' Goose	02/05/87	Merced NWR EG-B	Avian Cholera
Ross' Goose	02/05/87	Merced NWR EG-C	Avian Cholera
Ross' Goose	01/30/87	Merced NWR LF-B	Avian Cholera
Ross' Goose	01/17/87	Merced NWR WM-I	Avian Cholera
Ross' Goose	01/15/87	Merced NWR LF-B	Avian Cholera
Snow Goose	01/26/87	Merced NWR LF-B	Avian Cholera
Snow Goose	01/26/87	Merced NWR EM-D	Avian Cholera
Snow Goose	01/28/87	Merced NWR EM-G	Lead Poisoning
Snow Goose	02/05/87	Merced NWR LF-B	Avian Cholera
Snow Goose	01/30/87	Merced NWR LF-B	Avian Cholera
White-front	01/26/87	Merced NWR WM-I	Avian Cholera
White-front	02/05/87	Merced NWR EG-C	Avian Cholera
White-front	02/05/87	Merced NWR EG-C	Avian Cholera
White-front	02/05/87	Merced NWR EM-D	Avian Cholera
White-front	02/05/87	Merced NWR LF-D	Unknown/Emaciated
Cackling C.G.	01/23/87	Merced NWR EM-F	Avian Cholera
Cackling C.G.	02/05/87	Merced NWR EG-B	Avian Cholera
Pintail	01/23/87	Merced NWR LF-B	Avian Cholera
Am. Wigeon	01/23/87	Merced NWR EM-D	Avian Cholera
Ruddy	01/30/87	Merced NWR EG-C	Avian Cholera
Coot	01/23/87	Merced NWR LF-B	Avian Cholera
Red-tailed Hawk	01/26/87	San Luis NWR S.J. River	Heavy Parasite Burden
Ruddy	01/28/87	Kesterson NWR S. Gallo	Avian Cholera
Ruddy	01/28/87	Kesterson NWR S. Gallo	Avian Cholera
Coot	02/05/87	Kesterson NWR S. Gallo	Avian Cholera
Snow Goose	02/07/87	Salinas G.C. N. Grasslands	Avian Cholera
Snow Goose	02/12/87	Salinas G.C. N. Grasslands	Lead Poisoning
Cackling C.G.	02/07/87	Salinas G.C N. Grasslands	No Report/Pending

Cackling C.G.	02/07/87	Salinas G.C.	Avian Cholera
Pintail	02/07/87	N. Grasslands	Avian Cholera
N. Shoveler	02/07/87	Salinas G.C.	Avian Cholera
N. Shoveler	02/07/87	N. Grasslands	Avian Cholera
Gadwall	02/07/87	Salinas G.C.	Avian Cholera
Aleutian C.G.	02/19/87	N. Grasslands	Avian Cholera
Aleutian C.G.	02/12/87	Salinas G.C.	Avian Cholera/T.B.
Aleutian C.G.	02/12/87	N. Grasslands	Avian Cholera
Aleutian C.G.	02/12/87	Salinas G.C.	Avian Cholera
Aleutian C.G.	02/12/87	N. Grasslands	Avian Cholera
Aleutian C.G.	02/12/87	Salinas G.C.	Avian Cholera
Aleutian C.G.	02/12/87	N. Grasslands	Avian Cholera
Snow Goose	02/02/87	Salinas G.C.	Avian Cholera
Aleutian C.G.	02/14/87	N. Grasslands	Avian Cholera
Snow Goose	02/14/87	Salinas G.C.	Avian Cholera
Aleutian C.G.	02/13/87	N. Grasslands	Avian Cholera
Cackling C.G.	02/13/87	Salinas G.C.	Avian Cholera
Great Basin C.G.	02/13/87	N. Grasslands	Avian Cholera
Aleutian C.G.	02/19/87	Bennetti G.C.	Avian Cholera
Aleutian C.G.	02/20/87	S. Grasslands	Lead Poisoning
Aleutian C.G.	02/21/87	Sierra G.C.	Lead Poisoning
Peregrine Falcon	02/05/87	S. Grasslands	Lead Poisoning
		Dr.'s Pond	Lead Poisoning
		Mapes Ranch	Lead Poisoning
		Dr.'s Pond	Lead Poisoning
		Mapes Ranch	Lead Poisoning
		Dr.'s Pond	Avian Cholera
		Mapes Ranch	Avian Cholera
		Dr.'s Pond	Avian Cholera
		Mapes Ranch	Avian Cholera
		Dr.'s Pond	Avian Cholera
		Mapes Ranch	Avian Cholera
		Almond Dr.	Avian Cholera
		S. Grasslands	

Four snow geese from Merced NWR were diagnosed by California Department of Fish and Game Wildlife Investigations Lab as having died of avian cholera.

WILDLIFE DISEASE LOSS REPORT

Location of outbreak Merced NWR - Merced County California
 Throughout refuge.

Date of onset 1/2/87 Date of termination 3/17/87

Diagnosis Avian Cholera

Source of Diagnosis National Wildlife Health Laboratory, Madison, WI

Circumstances which may have initiated the outbreak or influenced its severity Large population of snow and Ross' geese roosting and feeding on the refuge.

<u>Species</u>	<u># dead</u>	<u># sick</u>	<u>Species</u>	<u># dead</u>	<u># sick</u>
1 Snow Goose	49		10 Red-tailed Hawk	1	
2 Ross' Goose	27		11		
3 White-fronted Goose	6		12		
4 Cackling Canada Goose	3		13		
5 Pintail	6		14		
6 Mallard	3		15		
7 Wigeon	2		16		
8 Ruddy	1		17		
9 Coot	7		18		

ADDITIONAL OBSERVATIONS OR REMARKS: The red-tailed hawk died of pesticide poisoning diagnosed by the Merced Raptor Rehabilitation Center.

Submitted by: Dan Severson

Date: March 25, 1987

Address: San Luis NWR Complex
P.O. Box 2176
Los Banos, CA 93635

WILDLIFE DISEASE LOSS REPORT

Location of outbreak Kesterson NWR - Merced County California

South Gallo Pond

Date of onset 1/28/87 Date of termination 2/5/87

Diagnosis Avian Cholera

Source of Diagnosis National Wildlife Health Laboratory, Madison, WI

Circumstances which may have initiated the outbreak or influenced its severity

<u>Species</u>	<u># dead</u>	<u># sick</u>	<u>Species</u>	<u># dead</u>	<u># sick</u>
1 <u>Ruddy</u>	<u>2</u>	<u> </u>	10 <u> </u>	<u> </u>	<u> </u>
2 <u>Coot</u>	<u>1</u>	<u> </u>	11 <u> </u>	<u> </u>	<u> </u>
3 <u> </u>	<u> </u>	<u> </u>	12 <u> </u>	<u> </u>	<u> </u>
4 <u> </u>	<u> </u>	<u> </u>	13 <u> </u>	<u> </u>	<u> </u>
5 <u> </u>	<u> </u>	<u> </u>	14 <u> </u>	<u> </u>	<u> </u>
6 <u> </u>	<u> </u>	<u> </u>	15 <u> </u>	<u> </u>	<u> </u>
7 <u> </u>	<u> </u>	<u> </u>	16 <u> </u>	<u> </u>	<u> </u>
8 <u> </u>	<u> </u>	<u> </u>	17 <u> </u>	<u> </u>	<u> </u>
9 <u> </u>	<u> </u>	<u> </u>	18 <u> </u>	<u> </u>	<u> </u>

ADDITIONAL OBSERVATIONS OR REMARKS:

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Los Banos, CA 93635

WILDLIFE DISEASE LOSS REPORT

Location of outbreak San Luis NWR

Date of onset 1/26/87

Date of termination 3/17/87

Diagnosis Red-tail - Parasite Load

Others - Undiagnosed at this time

Source of Diagnosis National wildlife Health Laboratory, Madison, WI

Circumstances which may have initiated the outbreak or influenced its severity

<u>Species</u>	<u># dead</u>	<u># sick</u>	<u>Species</u>	<u># dead</u>	<u># sick</u>
1 <u>Red-tailed Hawk</u>	<u>1</u>	<u> </u>	10 <u> </u>	<u> </u>	<u> </u>
2 <u>D.C. Cormorant</u>	<u>2</u>	<u> </u>	11 <u> </u>	<u> </u>	<u> </u>
3 <u>Gadwall</u>	<u>1</u>	<u> </u>	12 <u> </u>	<u> </u>	<u> </u>
4 <u> </u>	<u> </u>	<u> </u>	13 <u> </u>	<u> </u>	<u> </u>
5 <u> </u>	<u> </u>	<u> </u>	14 <u> </u>	<u> </u>	<u> </u>
6 <u> </u>	<u> </u>	<u> </u>	15 <u> </u>	<u> </u>	<u> </u>
7 <u> </u>	<u> </u>	<u> </u>	16 <u> </u>	<u> </u>	<u> </u>
8 <u> </u>	<u> </u>	<u> </u>	17 <u> </u>	<u> </u>	<u> </u>
9 <u> </u>	<u> </u>	<u> </u>	18 <u> </u>	<u> </u>	<u> </u>

ADDITIONAL OBSERVATIONS OR REMARKS:

Submitted by: Dan Severson

Date: March 25, 1987

Address: San Luis NWR Complex
P.O. Box 2176
Los Banos, CA 93635

WILDLIFE DISEASE LOSS REPORT

Location of outbreak Salinas Gun Club

North Grasslands WMA

Date of onset 2/7/87

Date of termination 2/20/87

Diagnosis Avian Cholera - Lead Poisoning

Source of Diagnosis National Wildlife Health Laboratory

Circumstances which may have initiated the outbreak or influenced its severity

Aleutian Canada geese were hazed off of the Modesto Sewer Ponds because of an avian cholera out break, and began roosting on Salinas Gun Club which is a traditional roost area. The infection was apparently carried with them from Modesto to the Salinas Gun Club.

<u>Species</u>	<u># dead</u>	<u># sick</u>	<u>Species</u>	<u># dead</u>	<u># sick</u>
<u>1 Aleutian Canada Goose</u>	<u>13</u>	<u></u>	<u>10 Gadwall</u>	<u>6</u>	<u></u>
<u>2 Unk. Sm. Canada Goose</u>	<u>6</u>	<u></u>	<u>11 Green-winged Teal</u>	<u>2</u>	<u></u>
<u>3 Cackling Canada Goose</u>	<u>2</u>	<u></u>	<u>12 Mallard</u>	<u>2</u>	<u></u>
<u>4 Ring-billed Gull</u>	<u>1</u>	<u></u>	<u>13</u>	<u></u>	<u></u>
<u>5 White-fronted Goose</u>	<u>1</u>	<u></u>	<u>14</u>	<u></u>	<u></u>
<u>6 Snow Goose</u>	<u>12</u>	<u></u>	<u>15</u>	<u></u>	<u></u>
<u>7 Pintail</u>	<u>11</u>	<u></u>	<u>16</u>	<u></u>	<u></u>
<u>8 Coot</u>	<u>10</u>	<u></u>	<u>17</u>	<u></u>	<u></u>
<u>9 Shoveler</u>	<u>8</u>	<u></u>	<u>18</u>	<u></u>	<u></u>

ADDITIONAL OBSERVATIONS OR REMARKS:

Of 14 necropsied birds, 12 were avian cholera and 1 lead poisoning, with one undiagnosed specimen.

Submitted by: Dan Severson

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Address: San Luis NWR Complex
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Los Banos, CA 93635

WILDLIFE DISEASE LOSS REPORT

Location of outbreak Mapes' Ranch - Stanislaus County, California

Doctor's Pond

Date of onset 2/12/87

Date of termination 2/21/87

Diagnosis Avian Cholera - Lead Poisoning

Source of Diagnosis National Wildlife Health Laboratory, Madison, WI

Circumstances which may have initiated the outbreak or influenced its severity

Aleutian Canada geese use the Doctor's Pond for roosting.

<u>Species</u>	<u># dead</u>	<u># sick</u>		<u>Species</u>	<u># dead</u>	<u># sick</u>
1 <u>Aleutian Canada Goose</u>	<u>4</u>	<u> </u>	10	<u> </u>	<u> </u>	<u> </u>
2 <u>Cackling Canada Goose</u>	<u>1</u>	<u> </u>	11	<u> </u>	<u> </u>	<u> </u>
3 <u>Great Basin Canada Goose</u>	<u>1</u>	<u> </u>	12	<u> </u>	<u> </u>	<u> </u>
4 <u>Ruddy</u>	<u>1</u>	<u> </u>	13	<u> </u>	<u> </u>	<u> </u>
5 <u> </u>	<u> </u>	<u> </u>	14	<u> </u>	<u> </u>	<u> </u>
6 <u> </u>	<u> </u>	<u> </u>	15	<u> </u>	<u> </u>	<u> </u>
7 <u> </u>	<u> </u>	<u> </u>	16	<u> </u>	<u> </u>	<u> </u>
8 <u> </u>	<u> </u>	<u> </u>	17	<u> </u>	<u> </u>	<u> </u>
9 <u> </u>	<u> </u>	<u> </u>	18	<u> </u>	<u> </u>	<u> </u>

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Los Banos, CA 93635

WILDLIFE DISEASE LOSS REPORT

Location of outbreak South Grasslands WMA - Bennetti Gun Club

Sierra Gun Club, Duckville Gun Club

Date of onset 2/2/87

Date of termination 2/14/87

Diagnosis Avian Cholera - Lead Poisoning

Source of Diagnosis National Wildlife Health Laboratory, Madison, WI

Circumstances which may have initiated the outbreak or influenced its severity

<u>Species</u>	<u># dead</u>	<u># sick</u>	<u>Species</u>	<u># dead</u>	<u># sick</u>
1 Snow Goose	8		10		
2 Aleutian Canada Goose	1		11		
3 Peregrine Falcon	1		12		
4			13		
5			14		
6			15		
7			16		
8			17		
9			18		

ADDITIONAL OBSERVATIONS OR REMARKS:

Peregrine diagnosed avian cholera, Aleutian Canada goose and one snow goose diagnosed as lead poisoning and others were avian cholera.

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