

ROUTING SLIP

BRANCH OF WILDLIFE REFUGES

DATE: 3/16 1949

MR. SALYER _____

MR. KRUMMES _____

MR. DUMONT PAD 3-23-49

MISS BAUM _____

SECTION OF HABITAT IMPROVEMENT:

MR. GRIFFITH DEG 3-18

DR. BOWEN LOS 3-3-21

MISS COOK _____

SECTION OF OPERATIONS:

MR. DALL _____

MR. REGAN WRC 3/25

~~Mr. Frosty~~ Rem 4/29

SECTION OF STRUCTURES:

MR. TAYLOR _____

MR. JOHNSTON _____

SECTION OF LAND MANAGEMENT:

MR. KENT JK

MR. ACKERMAN AK

STENOGRAPHERS:

NARRATIVE REPORT

REFUGE: TULE LAKE

PERIOD: MAY - AUGUST 1948

Regional Director, Portland, Oregon

February 24, 1949

Refuge Manager, Tule Lake Refuge, Tullake, Calif.

Waterfowl Population Data.

Reference is made to Mr. MacDonald's memorandum of February 21, relative discrepancies in production information per wire of December 21, and information appearing in Pacific Waterfowl Flyway Report No. 4.

No production reports were submitted to anyone, except the wire of December 21. Information in that wire was based entirely on brood counts, except for geese which were pretty much actually counted. Except for conversations with various representatives of the California Division of Fish and Game, in the course of which mention of production may have been made - but without any detailed figures - we are unable to account for the Flyway Report figures. Had such information been reported to the state, copies would have been submitted to your office.

The figures reported by wire are substantially correct - probably on the conservative side.

Howard J. Sargeant



February 24, 1949

Regional Director, Portland, Oregon

Refuge Manager, Tule Lake Refuge, Tulelake, Calif.

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The figures reported by wire are substantially correct - probably on the conservative side.

Howard J. Sargent



NARRATIVE REPORT
OF THE TULE LAKE, LOWER KLAMATH, UPPER KLAMATH AND CLEAR LAKE
NATIONAL WILDLIFE REFUGES
PERIOD OF MAY 1 TO AUGUST 31, 1948

PERSONNEL

Sargeant, Howard J.	Refuge Manager
Branson, Jean F.	Refuge Manager
Ramelli, Lloyd R.	Refuge Manager
Russell, Robert F.	Refuge Manager
Birch, James D.	Enforcement Agent
Arnold, Ward	Mechanic
Jacox, Frank B.	Clerk
Christensen, Henry	Maintenance Man
Fisher, James R.	Maintenance Man
Garratt, Thomas	Maintenance Man
Jensen, Glenn C.	Maintenance Man
Udovich, Joseph W.	Maintenance Man
James, Edward S.	Laborer-patrolman
Thomason, James W.	Dragline Operator, WAE
Irvine, Earl M.	Dragline Oiler, WAE

TULE LAKE REFUGE

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NARRATIVE REPORT
TULE LAKE NATIONAL WILDLIFE REFUGE
May, June, July and August 1948

I. GENERAL

A. Weather Conditions.

1948	Precipitation	Max. Temp.	Min. Temp.
May	2.07"	80° F.	26° F.
June	3.72	93	39
July	.67	88	39
August	.12	85	38
Totals	6.58"		
Extremes		93° F.	26° F.
1947			
May	1.80	88	32
June	1.87	82	34
July	.55	88	40
August	.10	90	39
Total	4.32"		
Extremes		90° F.	32° F.

Above data from Bureau of Reclamation - Tulalake, Calif.

1948 precipitation was approximately 150% of 1947 for the same period, with the bulk of the increase coming in June. This, in combination with low temperatures, not fully reflected in the records, materially delayed spring farming operations and initial growth of grain crops. There were frosts - in spots - every month of the period and an especially severe frost the night of July 28, which did considerable damage in some areas.

B. Water Conditions.

		Elevations			
1948	High	Low	1947	High	Low
May	4034.40'	4033.83'		4033.73'	4033.48'
June	34.30	34.11		33.79	33.57
July	34.25	33.81		33.93	33.60
August	33.98	33.47		34.05	33.87
Extremes	4034.40'	4033.47'		4034.05'	4033.48'
Max. Diff.		.93'			.53'

Data from Bureau of Reclamation, Tulalake, Calif.

1948 water levels on Tule Lake were consistently higher than in 1947. The maximum fluctuation (or difference) indicated above is largely the result of a straight line drop during August when Reclamation finally succeeded in pumping out more water than was pumped in, in anticipation of a need for increased storage room in the sumps because of planned construction work on the Lost River-Klamath River diversion canal. Higher water levels were favorably reflected in somewhat better growth of aquatics and emergent vegetation and a greater area of marsh in the upper sump available for nesting.

Reclamation was not able to accomplish any part of the proposed increase in pumping capacity at Plant "D" (Tunnel to Lower Klamath). It is expected that additional pumps (aggregating 100 c.s.f. capacity) will be installed before the spring of 1949.

Work of raising and widening the South Main dike (south side of Lower Sump), most of the same kind of work on "B" dike (north side of Lower Sump) and approximately 50% of the work on the North Main dike (north side of Upper Sump) was accomplished by Reclamation under contract during the period. Material was hauled in by truck and is largely bank run rock. Water side of dikes has about a $1\frac{1}{2}$ to 1 slope, berm side will have about a 3 to 1 slope.

The "N" Canal work - widening canal, strengthening banks, digging parallel drain and extending the canal south - was about 90% completed during the period.

The above dike and canal work are mentioned here because they should in future permit greater flexibility in regulating water levels and in management of water.

C. Fires.

One small fire (Tule Lake Report 48-1) occurred during the period. This fire resulted from clean-up work back of headquarters. It burned off approximately .3 acre of June grass and mustard, and was suppressed before any damage was done.

This fire, in combination with one on Lower Klamath two days before, emphasized the lack of and the urgent need for fire fighting equipment on the Tule Lake Refuge.

II WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

Snow geese and White-fronted geese, as usual, remained on the refuge in fair numbers well into May, and more than the usual numbers of Snows remained throughout the period.

All indications are that the heavy snowfall of March 24 and repeated storms during April adversely affected the Canada goose hatch. Out of a total population of 2500 adults, some 700 were classed as non-breeders, leaving approximately 900 nesting pairs, but total production was only 800.

Duck populations were about normal except that the numbers of resident Cinnamon teal and Redheads were down and production of these species was likewise down.

Resident population of Eared grebes continued low and production of both Eared and Western grebes dropped.

The fall flight was slightly behind that of 1947; the first Pintails arriving on August 5, and the first Mallards and White-fronted geese about August 10.

2. Food and Cover.

Slightly higher water levels in 1948 than in 1947 made for some improvement in nesting habitat in the Upper Sump, with good to excellent growth and seed production of emergent vegetation.

Growth of aquatics was not as heavy as in previous years. This might be due to a relative scarcity of seed because of exceptionally heavy winter and spring use of the refuge by Swans and diving ducks.

Farming operations were late. There was greater and more effective use of scarecrows to keep birds out of young grain than in previous years. Very little harvesting had been accomplished by the end of August and in consequence little stubble field feed was available. Herding operations, chiefly with lights and planes, were carried on during most of August. Very heavy use was made of refuge farmed areas, especially Lot 61A at the north-east corner of the Lower Sump.

3. Botulism.

During the latter part of August a relatively few birds were found dead of botulism in the Lower Sump. Nearly all the migrant waterfowl used this area for resting.

4. Lead Poisoning and other Diseases.

None.

B. Upland Game Birds.

1. Populations and Behavior.

Production of pheasants was better than expected, in view of the number of heavy snow and rain storms in March and April, and a generally wet May and June, but not in keeping with the number of adult birds present.

Valley quail nested very successfully, weather conditions considered. There was a substantial increase in the extreme south end of the refuge adjacent to the Lava Beds Monument.

Chukar partridges were observed along the hill from just north of the CCC camp to some distance south of Hotel Rock, a distance of some six miles.

2. Food and Cover.

Precipitation before and during the early part of the period resulted in the heaviest growth of grass and weeds in several years, which, while it was not of benefit for current nesting use, did improve escape cover and food supply.

3. Disease.

There were no indications of disease.

C. Big Game Animals.

There was little deer use during the early part of the period. During July and August up to ten deer were on and off the south end.

One antelope was on and off the Panhandle and Peninsula Cabin areas.

Grass and weed growth were heavier than normal in the general area.

D. Fur Animals, Predators, Rodents and other Mammals.

There were few signs of muskrat activity noted during the period, although there were some complaints of damage to the dike along the south side of the Upper Sump, this dike being maintained by Winema Farms. Several trips through the marsh in the east part of the Upper Sump failed to indicate any activity in this area. Some increase was looked for because the slightly higher water levels prevalent during the period appeared to improve conditions for muskrat use.

Population of marmots, squirrels (Douglas), weasels and rabbits was down from 1947. Mice were scarce.

Coyotes were practically non-existent on the refuge.

E. Predaceous Birds, including Crows, Ravens and Magpies.

Two Bald eagles remained in the vicinity of Hospital Rock the entire period.

Few hawks were present at any time, except for a few Red-tails along the hill and a few Marsh hawks in the south end.

Short-eared owls were scarce until late in August.

A few Ravens were seen during August in the vicinity of Lisky Siding.

No crows or magpies were seen.

A few vultures were present along the hill.

F. Fish.

None except minnows.

III REFUGE DEVELOPMENT MAINTENANCE

A. Physical Development.

1. Buildings and Grounds.

Work was begun this period on remodeling of barn at headquarters into a $1\frac{1}{2}$ story 2-bedroom house. Mangers, wood-block flooring, etc., were removed, dormer was built, partition studding was put in.

A lavatory was built in the shop. Sewer line was run from the shop into septic tank serving the office.

An end-loader was borrowed from the Park Service and a driveway entirely around the shop was partially excavated, the spoil being used as fill material in the duck hospital area. The driveway will alleviate shortage of working space around the shop and provide a maintainable fire break.

Salvage from one wing and base portion of a U-type barracks in the CCC camp was completed to obtain material for other construction.

Weeds and other debris around the CCC camp buildings were cleaned up, primarily for fire protection.

Weeds were mowed and piled in Peninsula Cabin area as a fire protection measure.

Major repairs were made to one septic tank and two sewer lines in the CCC camp.

A complete rebuild of the bathroom in Quarters 10 was necessary.

2. Equipment.

A car load of pickups (4) was received in June and unloaded. All were checked and serviced in the refuge shop. Two were retained at Tule Lake.

The International TD-9 tractor obtained from surplus was not operable during this period, barely surviving the irrigation pumping on Lower Klamath. The Allis-Chalmers HD-14 broke down in the middle of farming operations. A complete motor overhaul was necessary. Main spring was also replaced.

The Caterpillar RD-7 borrowed from Sacramento to substitute for the HD-14 had bad bearings and could not be operated.

A John Deere 5-disc plow was received late in July and assembled.

Two McCormick-Deering grain drills were received in July but were not assembled.

A top was constructed at the refuge for the International truck-tractor and the vehicle was painted.

In addition, there was the usual quota of repairs to motor vehicles.

It was necessary to borrow a large dewatering pump from Sacramento during the period.

3. Other Work.

Reconstruction of the "N" Canal by Reclamation necessitated the expenditure of several man-days for salvage of wire and some poles from refuge phone line.

Surplus materials from Port Hueneme; tractor, spray rig, pump and several generators for other areas from Sacramento Refuge consumed a number of man-days for their transportation.

B. Plantings.

- | | |
|-------------------------------|-------|
| 1. Aquatics and Marsh Plants. | None. |
| 2. Trees and Shrubs. | None. |
| 3. Upland Herbaceous Plants. | None. |
| 4. Cultivated Crops. | |

Lot 61A was seeded. Periodic pumping of drainage water was necessary into June.

The "Frog Pond" buffer strip was plowed, disked, harrowed and seeded. Adjoining berm was also worked. Approximately 320 acres was involved, broken up by drains into four fields. Road and ground conditions necessitated taking most of the heavy equipment down and moving it a considerable distance to get from one field to another.

It was necessary to rent grain drills for this farming.

It was also necessary to rent spray equipment for weed treatment on the entire Tule Lake planting of about 600 acres. 2,4-D spray was used.

All told, farming operations on Tule Lake during this period required 140 man-days, of which 16 were devoted to weed treating (including

obtaining and returning rented equipment).

Hannschen barley was put in on the Tule Lake lands.

Planting operations were completed in fair season, not as soon and not as late as some operations on adjoining lands.

At the end of the period it was estimated that refuge farmed areas, if harvested, would yield about 60 bushels per acre.

Approximately 1900 acres were in Hannschen barley, under 7 Co-operative Use permits, under which the refuge share was 33 1/3% standing or 25% harvested. Yields were expected to be normal for the area. Another 100 acres was being farmed on a share-crop basis, on which the entire crop was to be left standing.

The bulk of the land under Reclamation lease was in barley, with a few hundred acres in sugar beets and potatoes. No effort was made by lessees in the NE part of the refuge to comply with Reclamation's crop rotation requirements.

C. Collections.

1. Seed and other Propagules.

A small amount of Giant wild rye seed was collected by hand for experimental use on dikes.

2. Specimens.

None.

D. Receipts of Seed and Nursery Stock.

On May 24th, 750 lbs. of Italian Rye Grass seed was purchased under bid, at \$10.57 per cwt.

On August 6th, 527 lbs. of Brome Grass seed was received from Slade Refuge in North Dakota.

IV ECONOMIC USE OF REFUGE

- | | |
|---------------------------|-----------------|
| A. <u>Grazing.</u> | None. |
| B. <u>Haying.</u> | None. |
| C. <u>Fur Harvest.</u> | None. |
| D. <u>Timber Removal.</u> | Not applicable. |
| E. <u>Other Uses.</u> | None. |

V FIELD INVESTIGATION OR APPLIED RESEARCH

Brood counts and weekly population estimates were continued throughout the period, the latter as part of the Pacific Flyway Waterfowl studies.

VI PUBLIC RELATIONS

A. Recreational Uses.

Travel through the refuge to the Lava Beds National Monument was heavy. There were also a number of visitors to the refuge for bird observations.

B. Refuge Visitors. (List on page 8a.)

C. Refuge Participation. None.

D. Hunting. None.

E. Fishing. None.

F. Violations. None.

VII OTHER ITEMS

A. Items of Interest.

1. Depredations.

There were a number of complaints of waterfowl damage, a few in the early part of the period, to hay and new grain, and a number from mid-August on, of damage to maturing grain. Herding permits were issued as necessary.

2. Personnel.

The following changes in personnel occurred during the period:

Henry Christensen entered on duty as Maintenance Man on Aug. 5.

Robert R. Ives, Maintenance Man, resigned on June 23rd.

Lloyd R. Ramelli, Refuge Manager, transferred to Red Rock on August 29th.

REFUGE VISITORS

MAY - AUGUST 1948

<u>Date</u>		
May 31 & June 1	John Schwartz, Refuge Mgr., Sheldon	Supplies, etc.
2 & 5	K. F. MacDonald, Regional Office	Refuge Matters
7	Mr. Miller - Lands	Lower Klamath surv.
9	Mr. Albert, Predator and Rodent control	Muskrats for scent.
11	Messrs. Immler and Ekland, River Basins	Land matters
14	Messrs. Chattin and Foster, Calif. Div. F&G. Dr. Robert Norton & Jerry Vistercil, Sheldon	Wildlife matters. Equip. & supplies.
July 21	Messrs. Willis & Jacoby, Reg. Office	L.K. matters.
23	C. Leichhardt - Reg. GMA Sup.	Law Enforcement.
27	Messrs. D. E. Woodward and A. J. Rissman	Lnds. matters.
28	Messrs. Willis & Jacoby, R.O.	Prop., 313 Str., L.K. survey
Aug. 1,2,		
3	Mr. K. F. MacDonald, Reg. Office	Inspection.
2	Messrs. Leichhardt & Savage, GMA	Law enforcement.
3	Vernon Ekedahl, Sacramento	Flow transfer.
5	Mr. Paul Quick, Reg. Office., & Mr. Vernon D. Northrup, Div. Budget	Refuge inspection.
13	Refuge Mgr. Nelson, Arrowwood Refuge	Visit.
18	Messrs. MacDonald, Leichhardt, Thompson & Savage, R.O. & GMA	Depred. problems.
19	Mr. K. F. MacDonald, Reg. Office	Develop. matters.
24&		
25	Messrs. Willis and West, Reg. Office.	Property matters.
26	Messrs. MacDonald & Schwartz	Finance & Pers.
27	Messrs. Chattin & Foster, Calif. Div. F&G	Banding, etc.
6	Warren J. Houck, Cornell U. Student.	Wildlife
11 -	C. H. Lostetter, GMA	Waterfowl depredations.

WATERFOWL

Refuge Tule Lake Months of May to August 1948

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan	5	5/1			5	S.R.			5
II. <u>Geese:</u> Canada goose	2500	4/30	3100	8/31	3100	8/31	50	600	3100
Cackling goose									
Brant									
White-fronted goose	40	8/16	20000	8/31	20000	8/31			27500
Snow goose	1000	5/1	1000	5/1	7	8/31	1	5	1007
Blue goose									
III. <u>Ducks:</u> Mallard	4000	5/1	12000	8/28			42	2100	15000
Black duck									
Gadwall	2000	5/1	6000	8/28			75	5675	12000
Baldpate			200	Period					200
Pintail	500	5/1	60000	8/28			10	600	100000
Green-winged teal	300	5/1	300	8/28			3	400	1000
Blue-winged teal	10	5/1	60	Period				50	100
Cinnamon teal	1400	5/1	7500	8/7			36	4680	7500
Shoveller	3500	5/1	3500	5/1			3	150	4000
Wood duck									
Redhead	1400	5/1	15000	8/28			124	8680	15000
Ring-necked duck	300	5/1	450	8/28			4	200	450
Canvas-back	1200	5/1	1200	5/1			-	-	1200
Scaup	4000	5/1	4600	8/7			11	655	4600
Golden-eye									
Buffle-head	400	5/1			100	5/8			400
Ruddy duck	4500	5/1	13000	8/28			120	5796	15000
IV. <u>Coots:</u>	7500	5/1					200	6000	7500

SUMMARIES

Total Production:

Geese 605
Ducks 28986
Coots 6000

Total waterfowl usage during period 215, 562

Peak waterfowl numbers 155,415

Areas used by concentrations South part of Upper Sump,
West part of Lower Sump.

Principal nesting areas this season North and east parts
of Upper Sump, Canals and drain banks.

Reported by Howard J. Sargeant
Howard J. Sargeant, Refuge Mgr.

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WEEKLY ESTIMATES OF WATERFOWL POPULATIONS

TULE LAKE

Nat'l Wildlife Refuge

Narrative Report

May - August 1948

	May 1	May 8	May 15	May 22	May 29	June 5	June 12	June 19	June 26
I. Swans:									
Whistling swan	3	3	3	3	3	3	3	3	3
II. Geese:									
Canada goose	2500	2500	2500	2500	2500	2500	2500	2500	2500
Cackling goose	50	50	50	50	-	-	-	-	-
Brant									
White-fronted	6500	4500	4500	100	100	100	50	50	50
Snow goose	1000	600	600	10	10	10	10	10	10
Blue goose									
III. Ducks:									
Mallard	2500	2500	2500	2500	2500	2500	2500	2500	2500
Black duck									
Gadwall	3000	3000	3500	4000	4000	4000	4000	4000	4000
Baldpate	200	200	200	200	200	200	200	200	200
Pintail	500	500	500	500	500	500	500	500	500
Green-winged t	300	400	100	100	100	100	100	100	100
Blue-winged t	60	60	60	60	60	60	60	60	60
Cinnamon teal	1400	1600	2200	2500	2800	2800	2800	2800	2800
Shoveller	3500	1500	1500	1500	500	500	500	500	500
Wood duck									
Redhead	1400	1500	2500	4000	5000	5500	5500	5500	5500
Ring-necked	250	250	250	250	250	250	250	250	250
Canvas-back	1200	400	250	150	75	75	75	75	75
Scaup	4000	3500	3500	3500	3500	3500	3500	3500	3500
Golden-eye									
Buffle-head	400	100	-	-	-	-	-	-	-
Ruddy	4500	5000	5200	5500	6500	6500	6500	6500	6500
IV. Coot:	7000	7500	7500	7500	7500	7500	7500	7500	7500

Exclusive of production for period.

WEEKLY ESTIMATES OF WATERFOWL POPULATIONS

TULE LAKE

Nat'l Wildlife Refuge

Narrative Report
May - August 1948

	July 3	July 10	July 17	July 24	July 31	August 7	August 14	August 21	August 28
I. <u>Swans:</u>									
Whistling swan	3	3	3	3	3	3	3	3	3
II. <u>Geese:</u>									
Canada goose	2500	2500	2500	2500	2500	2500	2500	2500	2500
Cackling goose	-	-	-	-	-	-	-	-	-
Brant									
White-fronted	50	50	25	25	25	25	25 ⁶⁵	25 ¹⁵⁰	25 ¹⁵⁰⁰
Snow goose	10	10	10	10	10	10	10	10	10
Blue goose									
III. <u>Ducks:</u>									
Mallard	2500	2500	2500	2500	2500	2500	4500	6500	12000
Black duck									
Gadwall	4000	4000	4000	4000	4000	4000	4000	4000	6000
Baldpate	200	200	200	200	200	200	200	200	200
Pintail	500	500	500	500	500	2500	20000	50000	60000
Green-winged t	100	100	100	100	100	100	100	100	300
Blue-winged t	60	60	60	60	60	60	60	60	60
Cinnamon teal	2800	2800	2800	2800	2800	2800	2500	2500	2500
Shoveller	500	500	500	500	500	300	300	300	300
Wood duck									
Redhead	5500	5500	5500	5500	5500	5500	5500	5500	5500
Ring-necked	250	250	250	250	250	250	250	250	250
Canvas-back	75	75	75	75	75	75	75	75	75
Scaup	3500	3500	3000	2500	2500	1200	1200	1200	1200
Golden-eye									
Buffle-head									
Ruddy	6500	6500	6500	6500	6500	6500	6500	6500	6500
IV. <u>Coot:</u>	7500	7500	7500	7500	7500	7500	7500	7500	7500

Exclusive of production for period.

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS

(other than waterfowl)

Refuge Tule LakeMonths of May 1 to August 31 194 8

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Eared grebe			10,000	8/31					5,000	10,000
Western grebe			2,800	8/31					800	2,800
Pied-billed grebe										300
White pelican			2,500	8/31						2,500
Farallon cormorant			750	7/24/						750
Treganza's heron			300	August						500
American egret			250	"						500
Brewster's egret										150
Black-crowned night heron			300	"						400
II. Shorebirds, Gulls and Terns:										
Killdeer									100	400
Long-billed curlew										4
Avocet										10
Black-necked stilt										30
California gull			500	July-Aug.						500
Ring-billed gull			3000	"						3000
Forster's tern			200							200
Black tern			300	Aug.						300
(over)										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons</u> : Mourning dove White-winged dove			700	8/31	1,500
IV. <u>Predaceous Birds</u> : Golden eagle Duck hawk Horned owl Magpie Raven Crow Turkey vulture W. red-tailed hawk Marsh hawk Desert sparrow hawk Short-eared owl Bald eagle					
Reported by <u>Edward J. Pagan</u>					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Tule Lake Months of May to August, 1948

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Sagebrush, grain fields, ditch banks 7 25000 a.	7	1500	1-3	- - -	4,000
California Quail			800			1,600
Chukar Partridge	Sagebrush - grass land		100			350

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name..
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1570
NR-8a

REFUGE GRAIN REPORT

Refuge Tule Lake Refuge

Months of April thru August 1949.

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS- FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Barley (in bus.)	3336	None	3336	372	2222	304*	2898	438		438	
Oats "	0	389			373	16*	389	0			
Rye "	468	102	570		546	24*	570	0			
Wheat "	92	0			92		92	0			

(8) Indicate shipping or collection points Tulelake, Calif.

(9) Grain is stored at Refuge hdqtrs granary.

(10) Remarks * Screenings from cleaning and treating process, used for emerg. feeding.

REFUGEE GRAIN REPORT

NR-8a

REFUGEE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)--55 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.
- (4) A total of Columns 2 and 3.
- (6) Column 4 less Column 5.
- (7) This is a proposed breakdown by varieties of grain listed in Column 6.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters grainary", etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.



1. Excavation for driveway back of refuge shop. Material hauled for fill in Duok-hospital area.
(Jacox)



2. TD-11 Tractor and Park Service loader working on excavation back of refuge shop.
(Jacox)



3. Loading dump truck with Park Service loader. Oil house in rear of refuge shop.
(Jacox)



4. Private farming operation on Tule Lake just west of "Channel". Plane applying fertilizer to ground being worked with offset disks. (Ramelli)



5. Cormorant nests on nesting island in southwest part of Lower Sump. (Ramelli)



6. Waterfowl on Lower Sump (late August).
(Sargeant)



7. Waterfowl in flight from Lower Sump to
grain fields - mostly to refuge farmed
"Island" (Lot 61A). (Lostetter)



8. Ducks at work on refuge grain crop on
 "Island", Lot 61A. 75 bu. to the acre,
 or better, stand of Hamnsöhen barley.
 (Lostetter)



9. Waterfowl on southwest part of Lower Sump.
 (Sargeant)



10. White-fronted geese and a few Canada
geese feeding on barley stubble in field
just east of Hotel Rock (in background).
(Sargeant)

Report submitted by:

March 2, 1949

Howard J. Sargent

Howard J. Sargent
Refuge Manager

Approved:

Mac

Saul C. Smith

ACTING REGIONAL DIRECTOR

LOWER KLAMATH REFUGE

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NARRATIVE REPORT

LOWER KLAMATH REFUGE

May, June, July and August 1948

I GENERAL

A. Weather Conditions.

See Tule Lake Report.

There were a few more hail and wind storms on Lower Klamath than on Tule Lake, and killing frosts occurred later in the early part of the period and earlier in the later part of the period than on Tule Lake.

B. Water Conditions.

	Elevations					
	Unit 2		Unit 3		Unit 4	
	High	Low	High	Low	High	Low
<u>1948</u>						
May	4078.31'	-	4076.30'	-	4075.90'	-
June	78.74	-	78.38	77.70'	76.08	75.82'
July	78.72	78.52	77.88	76.99	75.82	75.44
August	78.69	77.80	76.60	74.51	75.37	74.80
Extremes	4078.74'	77.80'	78.38'	74.51'	76.08'	74.80'
<u>1947</u>						
May	No Record		Levels below		4076.50	76.10
June			Gauge		76.80	76.08
July					76.42	75.70
August					Gauge out of water.	

Tule Lake Tunnel Plant "D" started pumping 150 c.s.f. into Lower Klamath on April 13. Discharge through the two 36" pipes did not start until April 28. Inasmuch as there was over 20,000 A.F. of excess water in Lower Klamath by May 1, and lower levels were necessary to protect in-completed dikes and facilitate reconstruction of other dikes, the maximum possible quantity of water was discharged from the refuge throughout the period. Insofar as possible, Tule Lake water was put down the Pl Canal into Unit 3, thence directly out of the refuge.

Precipitation during May and June came close to offsetting evaporation loss during those months and in consequence it was not until the end of the period that levels in Units 5, 6, 7, 8, 9 and 12 were materially lowered. Unit 4 was practically dry by the end of the period, to enable completion of the dike. Unit 3 level fluctuated more than desirable because of de-

mossing and other maintenance operations on the Pl Canal.

C. Fires.

The peat fire in Sec. 24-48-2 was apparently finally put out by the permittee.

On July 19, a peat fire in Sec. 22-47-2 broke out and about 4 acres of surface growth, mostly weeds, were burned over. The State Division of Forestry was called out by neighbors and suppressed the surface fire. Refuge personnel plowed a considerable area around the peat ridge in which the fire was smoldering, to prevent another surface fire. The extent of peat area and lack of water and pumping equipment precluded extinguishing the peat fire.

II WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

Canada goose population remained constant throughout the period. Migrant Cackling, Snow and White-fronted geese were entirely out of the area by May 22.

Some Green-winged teal, Shovellers, Canvas-backs, Scaup and Buffle-heads present on May 1 migrated from the refuge during May. Some Gadwalls, Cinnamon teal, Redheads and Ruddys moved in during May.

Canada goose production was the poorest in several years due primarily to heavy snow storms during late March and early April. The broods that came off were fairly large and survival was good.

Duck production was not as good as expected from the number of adult birds present at the beginning of the nesting season. This was particularly true of Cinnamon teal and Redheads, as compared to previous years.

The Coot population was not excessive and production was low.

Avocets nested in fair numbers. Black-necked stilts were relatively scarce.

Grebes were much less abundant than for several years past. Nesting success was very low.

Pelicans definitely nested in the Sheepy Lake area. Overall population was down however.

Cormorant use was down.

Treganza's herons and American egrets appeared to be nesting in the Sheepy Lake area to a greater extent than heretofore.

The fall migration build-up was slower to start on Lower Klamath than on Tule Lake and was pretty well confined to Pintails (August 7-14) and Canada geese (August 14-21).

2. Food and Cover.

Marginal cover in all units except 2 and part of 9 continued poor. There was relatively little residual vegetation for early nesting birds and little natural feed at any time during the period.

3. Botulism.

Starting in August, a few birds died of botulism. Losses were mostly in the south end of Unit 9 and along the west side of Unit 12 in the vicinity of the Chalk Banks.

4. Lead Poisoning and other Diseases.

There were no indications of the above during the period.

B. Upland Game Birds.

1. Populations and Behavior.

A few sagehens were seen occasionally in the extreme south part of the refuge.

There was a pronounced increase in the number of Valley quail along the west side of the refuge - Laird's Landing to Coyote Butte - and in consequence some increase in use of the refuge.

Pheasant hatch was only fair. Broods were small and late. A very heavy concentration developed in the area along Fairchild Channel and the southwest part of Fairchild Island.

2. Food and Cover.

Food and cover conditions were good to excellent over most of the area.

3. Disease.

No indications of disease were noted.

C. Big Game Animals.

No big game animals were on the refuge during the period.

Food and cover conditions were somewhat better than in 1947, heavy precipitation during the spring resulting in a better than average growth of vegetation, particularly outside the refuge.

3. Disease.

None.

D. Fur Animals, Predators, Rodents and Other Mammals.

Muskrat population was almost entirely confined to Sheepy Lake, in which area no pronounced change in status occurred.

Mice continued scarce.

There were no rabbits on the refuge proper and few in the general area.

Very few weasels were seen, although some duck nest damage was observed.

Coyotes were very scarce.

E. Predaceous Birds, including Crows, Ravens and Magpies.

No Ravens or Crows were seen on the refuge during the period. The Magpies increased considerably in the Laird's Landing area and some straying into the southwest part of the refuge was observed.

Turkey vultures were to be seen along the south and east parts of the refuge perimeter almost constantly. Probably up to 30 birds were on and off the area.

Marsh hawks were fairly common and Red-tailed hawks were observed occasionally.

The Short-eared owls were much less abundant than normal.

F. Fish.

None except trash minnows which decreased with lowered water levels.

III REFUGE DEVELOPMENT MAINTENANCE

A. Physical Development.

The Northwest dragline worked the entire period on the Unit 4 dike. Operating conditions were only fair at best. When material was finally in place much of it had been handled twice and some of it three times.

A heavy float was constructed for dragging dike tops and dike slopes. Both slopes and the top of approximately $1\frac{1}{2}$ miles of dike were dragged to pack down earth and even up the surface. Only one slope of another mile of dike was also dragged. This work was to some extent preparatory to seeding the slopes.

B. Plantings.

1. Aquatics and Marsh Plants.

Approximately four miles of dike toe were seeded to Prairie bulrush and water millet. Seed was soaked before planting. A strip from just below the existing water line to just above the operating level was seeded by broadcasting and the seed worked in by hand raking.

2. Trees and Shrubs.

None.

3. Upland Herbaceous Plants.

Approximately four miles of dike slope (averaging 20') was seeded to a mixture of White sweet clover, Yellow sweet clover, Italian rye and Crested wheat grass, by broadcasting. Slopes were dragged lightly after seed was broadcast. Notwithstanding rather dry conditions for several weeks after seeding, the clover and much of the grass made a fair start.

4. Cultivated Crops.

All of Fairchild Island, approximately 100 acres in Sec. 28-48-2, and approximately 60 acres in Sec. 13-48-1 were farmed by refuge personnel. All told, approximately 1,000 acres were farmed. Rye, barley and oats were seeded. The rye was not successful from a grain production viewpoint because of late planting and late spring and early fall frosts, but did provide a good cover crop and considerable goose pasture. Some of the barley on Fairchild Island made excellent growth but not much grain because of frosts. Oats were quite successful, both as green pasture and grain.

Approximately 4,280 acres were farmed under Cooperative Agreements. Indications early in the period were that yields would be good but by the end of August much of area had suffered heavy frost damage and in spots considerable hail damage. Barley was the predominant crop, with oats second and rye third.

C. Collections.

None.

D. Receipts of Seed and Nursery Stock.

See Tule Lake Report.

IV ECONOMIC USE OF REFUGE

None

V FIELD INVESTIGATION OR APPLIED
RESEARCH

Brood counts and weekly population estimates were made throughout the period.

VI PUBLIC RELATIONS

- | | |
|---------------------------------|---------------------------------|
| A. <u>Recreational Uses.</u> | None except for bird observers. |
| B. <u>Refuge Visitors.</u> | See Tule Lake Report. |
| C. <u>Refuge Participation.</u> | See Tule Lake Report. |
| D. <u>Hunting.</u> | None. |
| E. <u>Fishing.</u> | None. |
| F. <u>Violations.</u> | None. |

VII OTHER ITEMS

- A. Items of Interest.
1. Waterfowl Depredations.

There was very little depredation during the period, none until very late in August.

WATERFOWL

Refuge Lower Klamath Months of May to August 1948

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose	1500	5/1	5000	8/28			75	800	7500
Cackling goose	150	5/1			150	5/22			150
Brant									
White-fronted goose	1500	5/1			500	5/15			1500
Snow goose	100	5/1			100	5/1			100
Blue goose									
III. <u>Ducks:</u> Mallard	3500	5/1	7100	8/28			60	3600	7100
Black duck									
Gadwall	4000	5/1	14500	8/28			108	9450	14500
Baldpate	200	5/1	500	8/28			4	300	500
Pintail	300	5/1	40500	8/28			5	250	60000
Green-winged teal	600	5/1	1000	8/28			7	700	2000
Blue-winged teal	40	5/1	40	Period					40
Cinnamon teal	1000	5/1	3800	8/21-28			21	2520	5000
Shoveller	10000	5/1	10000	5/1			10	875	15000
Wood duck									
Redhead	800	5/1	7500	8/14			48	3600	10000
Ring-necked duck	50	5/1	550	8/28			10	500	550
Canvas-back	400	5/1	400	5/1			1	5	400
Scaup	3500	5/1	4200	7/24			12	700	4200
Golden-eye									
Buffle-head	600	5/1	600	5/1					600
Ruddy duck	3000	5/1	6000	8/31			50	2355	6000
IV. <u>Coots:</u>	4000	5/1	7500	8/31			100	3000	10000

SUMMARIES

Total Production:

Geese 800
 Ducks 24855
 Coots 3000

Total waterfowl usage during period 144,540

Peak waterfowl numbers 109,190

Areas used by concentrations Units 2, 3, 6, 7, 8

Principal nesting areas this season _____

Units 2, 3, 5, 6 and dikes.

Reported by Howard J. Bergant

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge ~~record~~ for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

WEEKLY ESTIMATES OF WATERFOWL POPULATIONS

LOWER KLAMATH

Nat'l Wildlife Refuge

Narrative Report
May - August 1948

	May 1	May 8	May 15	May 22	May 29	June 5	June 12	June 19	June 26
I. <u>Swans:</u>									
Whistling swan	3	3	3	3	3	3	3	3	3
II. <u>Geese:</u>									
Canada goose	1500	1500	1500	1500	1500	1500	1500	1500	1500
Cackling goose	150	150	150	150	-	-	-	-	-
Brant									
White-fronted	1500	500	500	-	-	-	-	-	-
Snow goose	100	-	-	-	-	-	-	-	-
Blue goose									
III. <u>Ducks:</u>									
Mallard	3500	3500	3500	3500	3500	3500	3500	3500	3500
Black duck									
Gadwall	4000	4000	4000	4500	5000	5000	5000	5000	5000
Baldpate	200	200	200	200	200	200	200	200	200
Pintail	300	300	300	300	300	300	300	300	300
Green-winged t	600	800	600	500	500	300	300	300	300
Blue-winged t	40	40	40	40	40	40	40	40	40
Cinnamon teal	1000	1000	800	1000	1200	1200	1200	1200	1200
Shoveller	10000	8500	3500	2500	2000	2000	2000	2000	2000
Wood duck									
Redhead	800	1000	1500	2500	3000	3500	3500	3500	3500
Ring-necked	50	50	50	50	50	50	50	50	50
Canvas-back	400	100	50	50	25	25	25	25	25
Scaup	3500	2500	2500	2500	2500	2500	2500	2500	2500
Golden-eye									
Buffle-head	600	300	-	-	-	-	-	-	-
Ruddy	3000	3000	3300	3500	3500	3500	3500	3500	3500
IV. <u>Coot:</u>	4000	4500	4500	4500	4500	4500	4500	4500	4500

Exclusive of production for period.

WEEKLY ESTIMATES OF WATERFOWL POPULATIONS

LOWER KLANATH

Nat'l Wildlife Refuge

Narrative Report
May - August 1948

	July 3	July 10	July 17	July 24	July 31	August 7	August 14	August 21	August 28
I. <u>Swans:</u>									
Whistling swan	3	3	3	3	3	3	3	3	3
II. <u>Geese:</u>									
Canada goose	1500	1500	1500	1500	1500	1500	2000	4000	5000
Cackling goose									
Front									
White-fronted									
Snow goose									
Blue goose									
III. <u>Ducks:</u>									
Mallard	3500	3500	3500	3500	3500	3500	3500	3500	3500
Black duck									
Gadwall	5000	5000	5000	5000	5000	5000	5000	5000	5000
Baldpate	200	200	200	200	200	200	200	200	200
Pintail	300	300	300	300	300	500	5000	40000	40000
Green-winged t	300	300	300	300	300	300	300	300	300
Blue-winged t	40	40	40	40	40	40	40	40	40
Cinnamon teal	1200	1200	1200	1200	1200	1200	500	500	500
Shoveller	2000	2000	2000	2000	2000	1200	1200	1200	1200
Wood duck									
Redhead	3500	3500	3500	3500	3500	3500	3500	3500	3500
Ring-necked	50	50	50	50	50	50	50	50	50
Canvas-back	25	25	25	25	25	25	25	25	25
Scaup	2500	2500	2000	1500	1500	800	800	800	800
Golden-eye									
Buffle-head									
Ruddy	3500	3500	3500	3500	3500	3500	3500	3500	3500
IV. <u>Coot:</u>	4500	4500	4500	4500	4500	4500	4500	4500	4500

Exclusive of production for period.

3-1751

Form NR-1A

(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)Refuge Lower KlamathMonths of May to August 1948

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Eared grebe									500	3000
Western grebe									100	500
Pied-billed grebe										200
White pelican									50	1500
Farallon cormorant										900
Troganza's heron										300
American egret										150
Brewster's egret										50
Black-crowned night heron										250
American bittern										30
Little brown crane										50
Sandhill crane										10
Sora										-
II. Shorebirds, Gulls and Terns:										
Terns:										
Killdeer									500	1500
Wilson's snipe										200
Long-billed curlew										-
Western sandpiper										Some
Western willet										50
Greater yellow-legs										Some
Lesser yellow-legs										"
Long-billed dowitcher										"
Avocet									1500	4500
Black-necked stilt									200	500
Wilson's phalarope										Some
Northern phalarope										"
California gull										500
Ring-billed gull										2500
Forester's tern										
Caspian tern										
Black tern										Some

(over)

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove					500
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					2
Duck hawk					
Horned owl					
Magpie					50
Raven					
Crow					
Turkey vulture					30
W. red-tailed hawk					10
Marsh hawk					100
Short-eared owl					100
Reported by <u>Howard J. Sargent</u>					

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Lower Klamath

Months of May to August, 1948

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd. Estimated Total	Percentage	Hunting For Re- stocking For Research	Estimated number using Refuge Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Grasslands, grain fields, marshes weed patches, 12,000 a.		800	1 - 3	- - -	2500
California Quail	Upland along S&W parts of refuge		100			400
Sagehen	S&W parts of refuge		50			250

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.



1. North side Unit 4 dike prior to reconstruction.
(Sargeant)



2. South side Unit 4 dike prior to reconstruction.
(Sargeant)



3. Unit 4 dike after reconstruction -
Unit 4 side. (Sargeant)



4. Dragline at work on lower end of Unit 4
dike - borrowing from Unit 7 side. Limited
amount of old dike left in place to provide
solid core. (Sargeant)



5. Cleaning weeds off dike preparatory to dragging. (Ramelli)



6. Dragging dike slope preparatory to seeding. ("22" Cat. and refuge constructed drag.) (Ramelli)



7. Dike slope after dragging and seeding.
Fair to good stand of grass (Crested
wheat, Italian Rye) and Sweet clover (white &
yellow) on upper slope. *Scirpus paludosus* and water
millet seeded along toe. (Sargeant)



8. Temporary pump installation to irrigate
land in Secs. 18 & 19, Twp. 48 N., R. 2 E.,
just south of State Line Highway.
(Ramelli)



9. Hammschen barley on Fairchild Island.
Best barley stand resulting from refuge
farming. (Sargeant)



10. TD-11 tractor with two 12' offset disks
in squadron - Fairchild Island.
(Ramelli)



11. Stand of oats in northeast part of
Fairchild Island - Refuge farming.
(Sargeant)



12. Poor stand of barley in center part
(high ground badly wind eroded) of
Fairchild Island. Some green pasture
use by geese. (Sargeant)

Report submitted by:

March 2, 1949

Howard J. Sargeant

Howard J. Sargeant
Refuge Manager

Approved:

ma Paul R. Cuck

ACTING REGIONAL DIRECTOR

NARRATIVE REPORT

CLEAR LAKE NATIONAL WILDLIFE REFUGE

May, June, July and August 1948

I GENERAL

A. Weather Conditions.

1948	Precipitation	1947
May	2.29"	No Record
June	1.59"	
July	.07"	
August	<u>None Recorded</u>	
Total	3.95"	

B. Water Conditions.

	1948 Elevations		1947	
	High	Low	High	Low
May	4529.31'	28.58'	4530.65'	29.92'
June	29.32	28.87	29.95	29.45
July	28.87	27.89	29.41	28.35
August	<u>27.86</u>	<u>27.00</u>	<u>28.32</u>	<u>27.47</u>
Extremes	4529.32'	27.00'	4530.65'	27.47'
Max. Diff.		2.32'		3.18'

The above levels reflect the steady drop in Clear Lake levels which has prevailed the last few years. Had May and June not been fairly wet it is certain that the heavier demand for irrigation water would have resulted in an even greater drop.

C. Fires.

There were no fires on or in the vicinity of the Clear Lake Refuge during the period.

II WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

Nesting use on Clear Lake was less than usual due to increasing lack of marginal cover and to the extremely wet spring which kept most of

the adjacent desert potholes and tanks filled during the nesting season and tended to scatter the birds. Nesting was limited to a few Canada geese and a few Mallards and Pintails.

Pelican nesting was far below usual. In some part the decrease may be explained by the reduced area available on Bird Island and, more important, the conversion of some of the bar or reef islands available in 1947 into points or peninsulas by lower water levels.

Very few shore birds, except Killdeer, were seen on the refuge during the period.

2. Food and Cover.

There were no aquatics and no emergent vegetation on the refuge except at Willow Creek. Cover conditions were generally poor on the north, west and south parts of the refuge; fair along most of the east side and fair to good on the peninsula.

3. Botulism. None.

4. Lead Poisoning and other Diseases. None.

B. Upland Game Birds.

The sagehen population was much reduced from 1947, especially on the peninsula. A few more birds than usual were seen along the south and east parts of the area. Cover was only fair.

C. Big Game Animals.

The number of Antelope on the refuge varied from 40 to 65 with the heaviest use being on the peninsula. Range conditions were fair to good.

D. Fur Animals, Predators, Rodents and other Mammals.

No observations.

E. Predaceous Birds, including Crows, Ravens and Magpies.

None observed on refuge.

F. Fish.

No observations.

III REFUGE DEVELOPMENT MAINTENANCE

None.

IV ECONOMIC USE OF THE REFUGE

A. Grazing.

Grazing under Reclamation leases was very light and divided about evenly between the north side and the peninsula.

There were no other uses.

V FIELD INVESTIGATION OR APPLIED RESEARCH

None.

VI PUBLIC RELATIONS

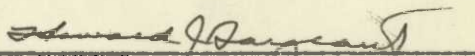
None.

VII OTHER ITEMS

None.

Forms NR1, and NR1a are the only ones for the preparation of which factual data are available.

Submitted by:


Howard J. Sargeant
Refuge Manager

Approved:


ACTING REGIONAL DIRECTOR

WATERFOWL

Refuge Clear Lake Months of May to August 1948

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose Cackling goose Brant White-fronted goose Snow goose Blue goose							10	200	500
III. <u>Ducks:</u> Mallard Black duck Gadwall Baldpate Pintail Green-winged teal Blue-winged teal Cinnamon teal Shoveller Wood duck Redhead Ring-necked duck Canvas-back Scaup Golden-eye Buffle-head Ruddy duck							5 2 6	75 50 75	200 100 200
IV. <u>Coots:</u>									

SUMMARIES

Total Production:

Geese 200
Ducks 200
Coots _____

Total waterfowl usage during period 1,000

Peak waterfowl numbers 1,000

Areas used by concentrations --

Principal nesting areas this season _____

East side and peninsula

Reported by Edward J. Baugman

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Clear Lake Months of May to August 194 8

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u> White pelican								200	500	2500
Reported by <i>William J. Gaudin</i>										
INSTRUCTIONS										
(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be given to those species of local and Na. significance. Special attention should be given to those species occurring on refuge during the reporting period.										
II. <u>Shorebirds, Gulls and Terns:</u> I. <u>Water and Marsh Birds</u> (Gaviiformes to Ciconiiformes and Gruiiformes) II. <u>Shorebirds, Gulls and Terns</u> (Charadriiformes) III. <u>Doves and Pigeons</u> (Columbiformes) IV. <u>Predaceous Birds</u> (Falconiformes, Strigiformes and Procellariiformes)										
(2) First Seen: The first refuge record for the species for the season concerned.										
(3) Peak Numbers: The greatest number of the species present in a limited interval of time.										
(4) Last Seen: The last refuge record for the species during the season concerned.										
(5) Production: Estimated number of young produced based on observations and actual counts.										
(6) Total: Estimated total number of the species during the refuge during the period concerned.										

(over)

	(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:						
Mourning dove						
White-winged dove						
IV. Predaceous Birds:						
Golden eagle						
Duck hawk						
Horned owl						
Magpie						
Raven						
Crow						

Reported by Edward J. Bayne

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

NARRATIVE REPORT
UPPER KLAMATH NATIONAL WILDLIFE REFUGE

May, June, July and August 1948

I GENERAL

A. Weather Conditions.

<u>1948</u>	Precipitation	Max. Temp.	Min. Temp.
May	1.28"	80° F.	26° F.
June	-	96	39
July	1.60	90	38
August	1.79	87	35
Total	4.67		
Estremes		96°	26°

Data are from Klamath Falls Airport (CAA) and only indicate conditions on the refuge.

B. Water Conditions.

	1948		Elevations	1947	
	High	Low		High	Low
May	4142.75'	42.17'		4141.58'	41.23'
June	42.89	42.56		41.75	41.22
July	42.54	41.44		41.44	40.33
August	41.41	40.46		40.31	39.19
Extremes	4142.89'	40.46'		4141.75'	39.19'
Max. Diff.		2.43'			2.56'

Data are from Copco at Link River Dam. It is to be noted that the 1948 level remained (on a rough average) between 1.0' and 1.5' higher than in 1947. This is the highest summer level maintained in Upper Klamath Lake for several years.

C. Fires.

There were no fires on or near the refuge.

II WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

Very little use was made of the refuge area during the spring flight. The generally higher water level eliminated much of the emergent marsh for nesting and reduced the already small area of meadow along the west side.

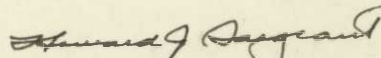
On the basis of several fast trips, without full coverage of the refuge on any, it is estimated that a total of 500 ducks (150 Mallards, 50 Pintails, 150 Redheads, 50 Scaup and 100 Ruddys), and 200 Canada geese were produced. Total use approximated 2000 ducks and 500 geese, some of which was on and off use.

Very little use was made of the area during the period by migrating (fall) birds.

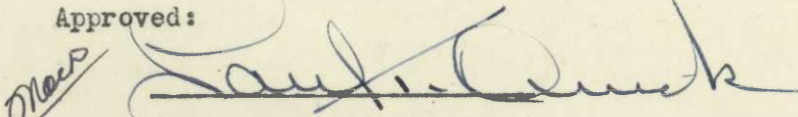
A special effort was made to determine the extent of American egret, Brewster's egret, Treganza's heron and Black-crowned night heron nesting on the refuge. While there are nesting colonies of all these species very near the refuge it appears that the refuge itself does not take in any part of the colony areas.

There are no data available for any other items of this report.

Submitted by:


Howard J. Sargeant
Refuge Manager

Approved:


ACTING REGIONAL DIRECTOR