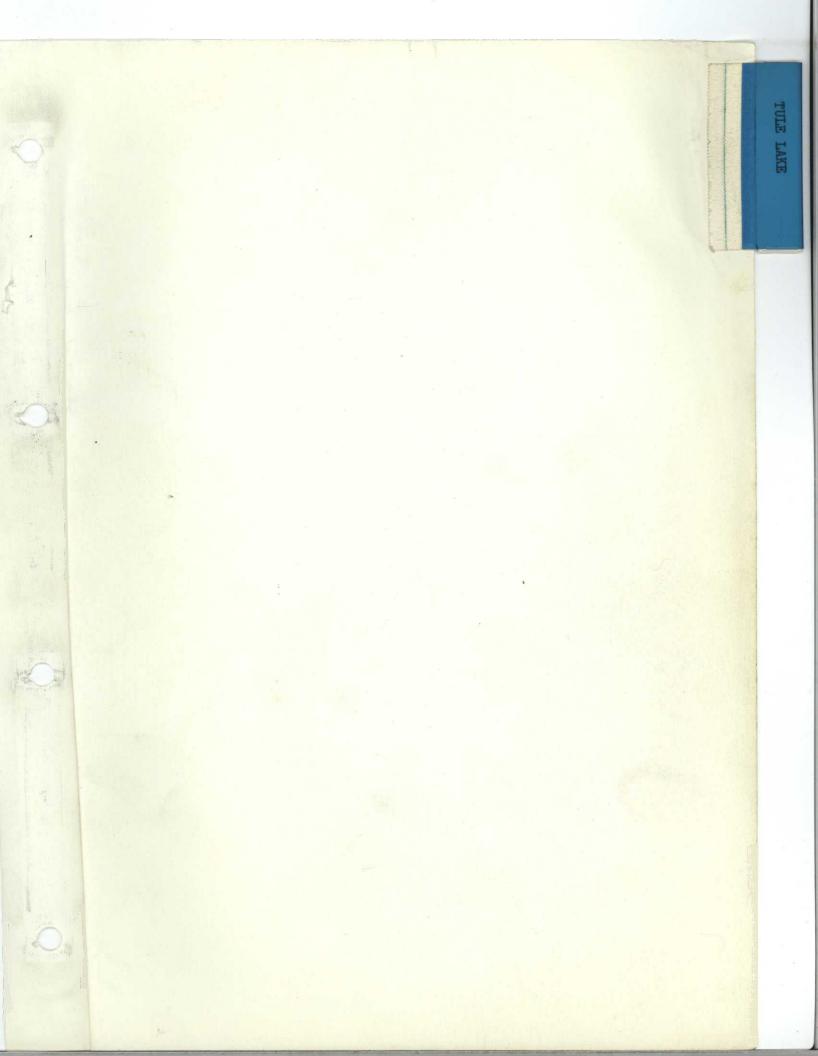
TULE LAKE - Lower Klamath; Clear Lake; Upper Klamath; Klamath Forest; Hank's Marsh

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NARRATIVE REPORT



NARRATIVE REPORT

KLAMATH BASIN NATIONAL WILDLIFE REFUGES

Tule Lake, Lower Klamath, and Clear Lake in California

Upper Klamath and Klamath Forest in Oregon

Headquarters For All Refuges: Tulelake, California

1965

UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE Bureau of Sport Fisheries and Wildlife Klamath Basin National Wildlife Refuges Region I

1965

PERMANENT PERSONNEL

Robert C. WatsonE.O.D. 7/3/65Refuge Manager Robert F. RussellTransferred 4/3/65Refuge Manager William NuessRefuge Manager Gaylord L. InmanRefuge Manager Palmer C. Sekora
Robert M. AbneyWildlife Biologist (Management)
Blake F. ChapmanShop Foreman
Henry ChristensenConstruction & Maintenance Foreman
James Mac Farlane Administrative Assistant
Pauline R. ChapmanClerk-Typist
Pauline DixonWAEWAE
Earl M. Irvine, Jr Heavy Duty Mechanic
Khlar Heaton Heavy Duty Mechanic
Harold P. Hardesty Truck Driver
Roland M. ShultsSignmaker
S. Virgil CobbDragline Operator
Joe FabianekWAEDragline Operator
Coy C. DyerOperator General H.D.
Peter A. DaviesTransferred 12/31/65Maintenanceman Foreman
Ivan L. MorfittCaretaker
Edward R. Downing
Lowell D. GreenWAE
Donald C. GriffithWAEMaintenanceman
Raymond H. HansonWAEMaintenanceman Samuel D. MerrimanWAEMaintenanceman
Robert K. Van WyckWAE ResignedMaintenanceman
TODELO NO VAIL MYCKOOOMAD TEEDEBIEGOOODOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

TEMPORARY PERSONNEL

Period of Employment

	Maintenanceman Maintenanceman
	Maintenanceman
	Maintenanceman
	1/29/65Laborer
Charles E. Osborn10/5/64 -	1/2/65Wildlife Biologist
	8/20/65YOC Summer Trainee
Lee R. Whitman 6/14/65 -	9/3/65YOC Summer Trainee

Tule Lake Refuge

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* Not applicable this report period.

Tule Lake National Wildlife Refuge 1965

I GENERAL

A. Weather Conditions*

Tabulated below is weather data for 1965. It was furnished by the Tulelake Irrigation District weather station, official observer for the U. S. Department of Commerce, Weather Bureau, Tulelake, California.

		Precipitation		Tempe	rature
	Snowfall 1/	Month	Normal 2/	Maximum	Minimum
January	12.0"	2.54	.94	51	l
February		.10	1.01	63	15
March	T	.07	•93	65	13
April	3.0"	1.50	.78	75	23
Мау		•39	1.29	80	20
June	T	2.26	•99	86	29
July		•07	.31	93	34
August		1.90	.22	90	34
September		.03	•55	88	21
October		.06	•93	87	15
November	7.0 ⁿ	2.76	1.03	69	2
December	7.0m	.69	1.28	56	-10
Total	29.0 n	12.37	10.26 Extreme	s 93	-10

1/ Measured at Refuge Headquarters.

2/ Average for the period 1932 through 1960.

l Norma l	.94	1.01	.93	•78	1.29	•99	.31	.22	.55	.93	1.03	1.28	10.26
	January	February	March	April	May	June	July	August	September	October	November	December	Year
1956	2.17	2.21	.33	.74	1.72	1.26	.31	.11	.03	2.05	.30	1.70	12.93
1957	.89	1.23	2.21	1.02	2.14	0	•74	0	1.64	•97	1.84	1.98	14.66
1958	1.41	1.98	.93	•75	1.78	1.69	1.27	.95	•78	.20	1.01	•59	13.34
1959	.73	.69	•39	.53	.65	.08	0	.50	.50	.34	0	•34	4.75
1960	•57	2.11	1.61	•53	2.10	0	.05	.05	•44	. 28	1.59	1.86	11.19
1961	.26	1.57	•71	.14	1.71	.71	.01	.20	.21	1.04	1.14	1.32	9.02
1962	1.17	1.45	1.06	.19	1.73	.50	0	.11	•34	5.04	.63	1.19	13.41
1963	.41	1.29	.53	1.22	1.42	.89	0	.20	.23	1.00	1.35	.69	9.23
1964	1.48	.11	.83	.54	.64	3.42	.69	.06	.02	.22	1.22	5.87	15.00
1965	2.54	.10	.07	1.50	.39	2.26	.07	1.90	.03	.06	2.76	.69	12.37

1/ Average for the period 1932-1960. Corrects data in 1961 September-December report. Correction based on Bureau of Reclamation data.

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The ravages of the December 1964 storm, which deposited precipitation ranging from 5.87 inches in the Tulelake area to 14.71 inches in the Chemult area, continued in January 1965. In the first eleven days 2.43 inches of precipitation was received, most of which was in the form of snow. Fortunately, low temperatures prevented a rapid runoff. 3

Late in January the temperature moderated melting the snowpack gradually. Clear and warm weather prevailed through February and most of March. Precipitation was almost totally lacking setting a 31 and 32 year record low for February and March respectively. Precipitation through the remainder of the year was above normal.

A tabulation of annual precipitation data covering the past decade follows. It is designed as an index of comparison for the current precipitation data.

B. Habitat Conditions

1. Water*

The water surface elevation of the 13,200 acre water and marsh area of Sumps 1A and 1B is controlled as directed by the Rules and Regulations - revised February 10, 1960 under the 1956 contract between the United States and the Tulelake Irrigation District. Objective levels are as follows:

			jective Levels thes?
Date	Objective Levels	Date Obj	jective Levels there i
April 1	4034.45	August 1	4034.251
May l	4034.401	September 1	4034.25
June 1	4034.351	October 10	4034.75'
July 1	4034.30	November 1	4034.75'
		January]	4033.501**

** This objective level is not set to accomodate wildlife operation but is for flood control; however, it is a part of the contract.

Unprecedented water conditions occurred on Tule Lake Refuge in 1965 because of the great December 1964 flood and above normal precipitation in January, April, June and August. Pumping Plant "D" operated through the entire year with the exception of seven, nine, fifteen and six day periods in April, June, September and December respectively. A total of 143,302 acre feet was pumped shattering existing records.

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The sump elevation on January 1 was 4035.32'. Normally it would have been approximately 4033.50'. Despite capacity pumping, the sump climbed toward the maximum established level of 4035.50'. To relieve the situation and protect related facilities, emergency measures were taken releasing 6,500 acre feet into Reserve Sump 2 on January 27. Capacity pumping continued through March 21. On March 30, pumping was terminated with the sump at elevation 4034.47'; .02' above objective level.

In April the sump climbed to a high of 4034.90' when above normal precipitation was received. The Rules and Regulations, designed to control sump elevations, were adjusted to permit lowering the sump at a uniform rate to reach the July 1 objective level of 4034.30'.

Above normal precipitation was received again in June raising the sump to a high of 4035.02' on June 20. This necessitated a second adjustment of the Rules and Regulations recommending that the sump be lowered at a uniform rate to reach the August 1 objective level on 4034.25'. This was achieved on August 6. Limited operation of Plant "D" was necessary through the remainder of the month to maintain this level.

On September 2, pumping at Plant "D" was terminated and the sump was permitted to rise to the October 10 objective level of 4034.75'. This was reached on September 16 at which time pumping was initiated to maintain this level.

On November 5, Plant "D" operation was accelerated to four units with the objective of lowering the sump to the January level of 4033.50'. This elevation was reached on December 25 at which time pumping was terminated.

Incidence of botulism on Tule Lake was minor. Only 385 sick and dead birds were collected.

2. Food and Cover*

Winter weather virtually closed the Tule Lake Basin when ice capped water units and 8-10 inches of snow blanketed the countryside in early January. The first half of the month we estimated only about 20 acres open water available for birds and animals. During this deep-freeze interim a seasonal low of 9,500 ducks and geese remained. Ducks suffered considerable stress and geese survived quite well. February 4 surveys indicate only 3 acres open water on Sump 1-B and about 100 acres open on Sump 1-A.

*O' Neill

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Waterfowl spring food conditions were subjected to considerable damage and loss. The Southwest Sump unit received some 6,500 acre feet of winter floodwaters which spread over three-fourths of the unit from late December through April 20. Frey's Island was under water from January through April 1. The panhandle fields were flooded from late December through February 15. Field 1-A, east of headquarters, was about one-third flooded from early January through February. None of the League of Nations unit went under water, however, some 6,000 acres of the Frog Pond unit was flood-irrigated by Tulelake Irrigation District to help absorb surplus waters. 5

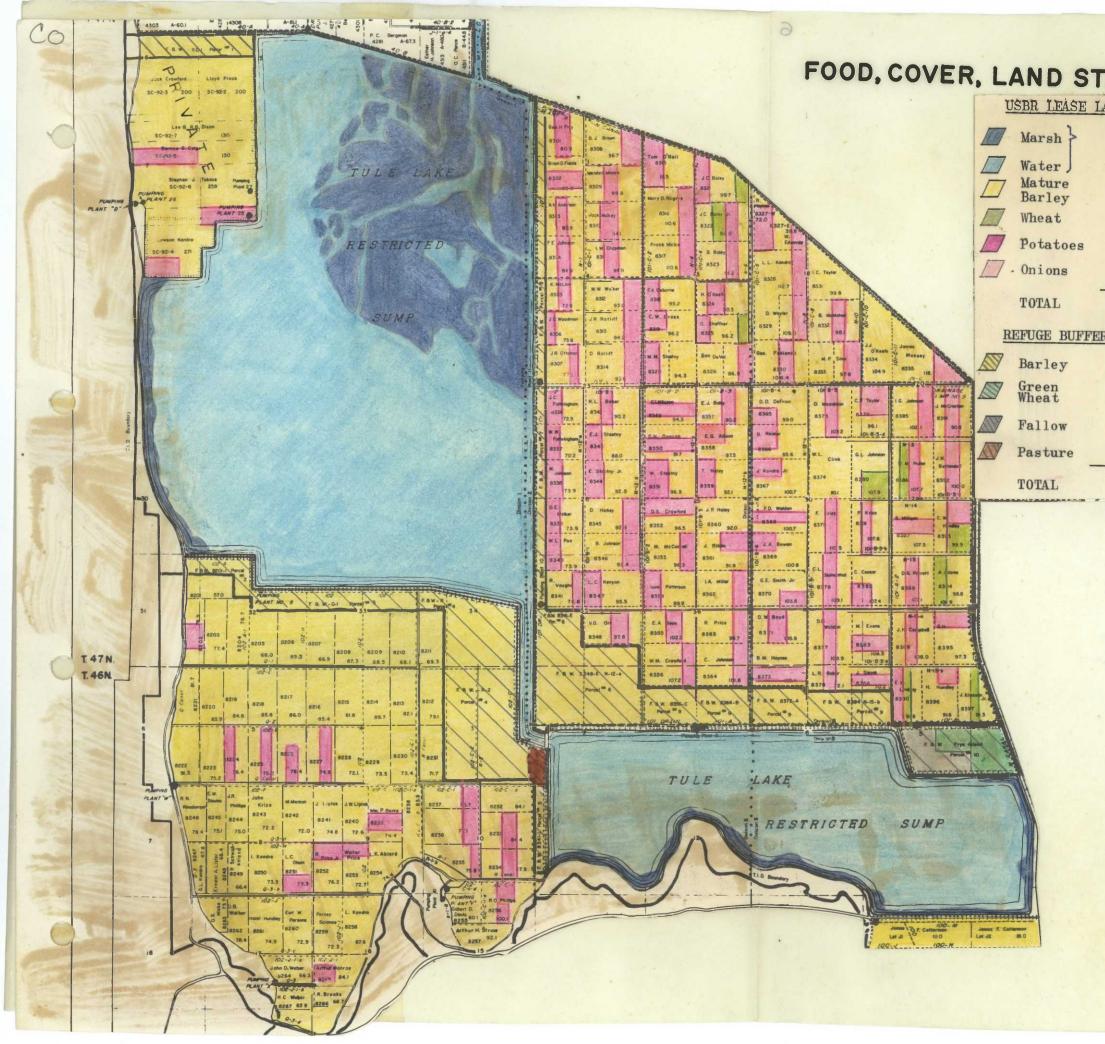
February 7-18 moderate weather saw 50 percent of water units reopened for incoming flights of spring migrants. All but 150 acres along the south boundary of Sump 1-B thawed the last of the month.

There was a steady decline in water levels until objective levels were reached by Tulelake Irrigation District pumping in late March. Snow received the first of April stopped field irrigation and the combined irrigation spillage and runoff caused sump levels to rise but without damage to nesting birds.

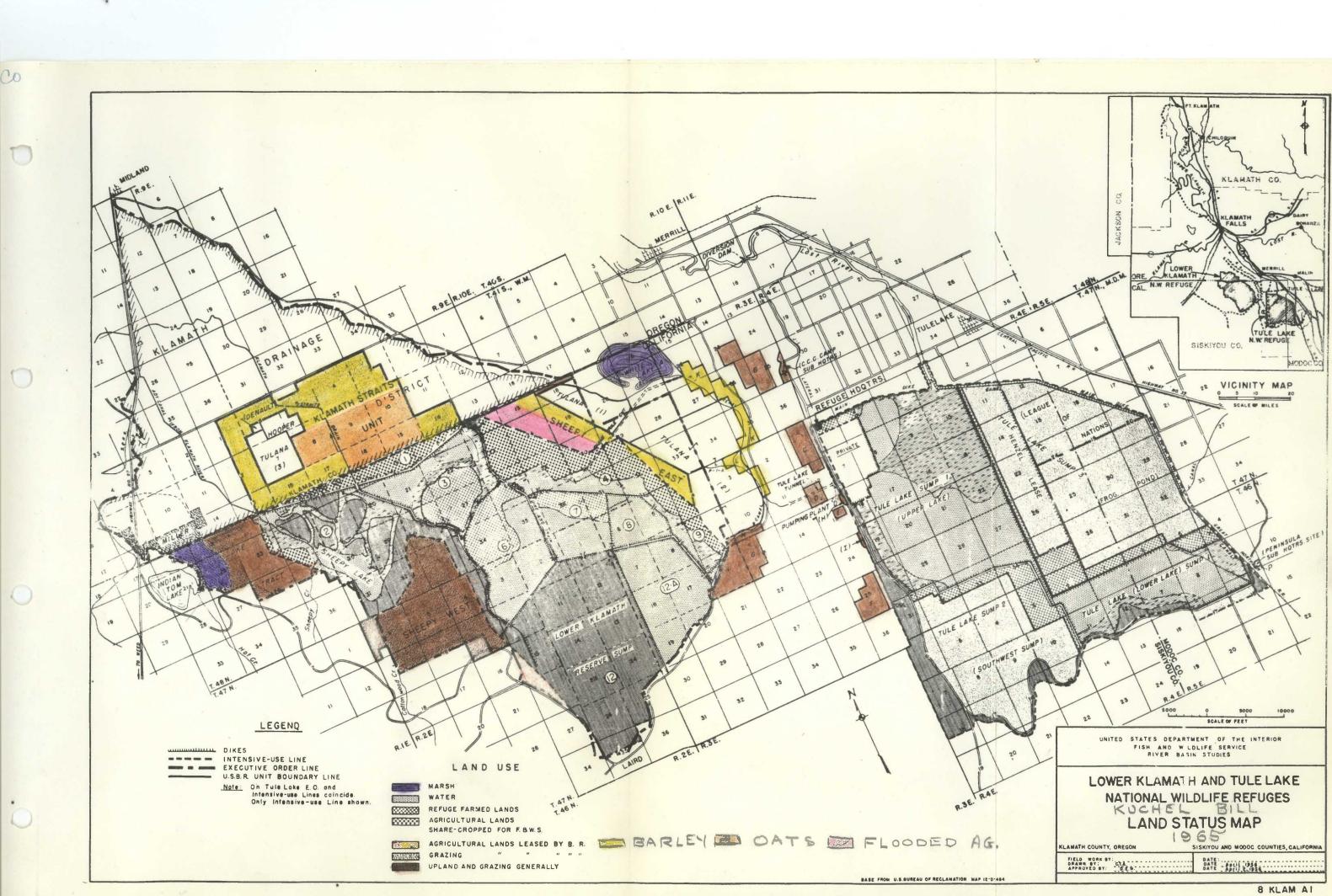
Ring-necked pheasants were in the limelight again as they congregated along adjacent highways and thoroughfares. Some 6,600 pounds of supplementary barley grain feed was spread and about nine miles of dike roads graded bare twice (18 miles) in a cooperative effort to cut down road kills. Fish and Game Warden Robert Robinson also put out 1,100 pounds of refuge-supplied grain on county roads and worked frightening flocks from main roads. The program didnot extend into the month of February as conditions improved.

At no time did spring migrating waterfowl present a depredations problem on neighboring lands. Irrigation, early burning and stubble and tillage of agricultural fields provided adequate gleanings. Mild weather here and northward allowed for an orderly spring migration without buildup in numbers using agricultural pastures and hayland. Stubble burning started March 17 (C fields in League of Nations) where ring-billed and California gulls moved in several hundred strong and competed for every available mouse exposed by farming activities. First irrigation of the year was in the League March 10.

Algae conditions (floating mats of filamentous) were bad during the summer, however, periodic rains and winds tended to sink and windrow providing better open water conditions than last summer. Basinwide "washing" by floods has perhaps deposited more algae spores and nutrients than at any time in the last 50 years. There was a marked increase in all free floating varities. Comparative cover or blanketing at the peak follows:



TATUS
LANDS-1965
13,200
11,895
197
2,509
21
14,622
R FIELDS
2,141
114
154
50
2,408



	1961	1962	1963	1964	1965
Sump 1-A	15%	15%	85%	30%	35%
Sump 1-B	30%	25%	90%	45%	30%

Spring-summer aquatic food plant production was considered good and adequate for nesting and summering species. Diving ducks used water areas extensively until the winter season at hand again restricted them to a few open holes in the ice at the close of the year.

For the second year spring precipitation in the form of cold June rains hit the basin at a critical time causing considerable loss in early duck nests due to a half-foot water raise. Losses were noted especially in Sump 1-A where mallard nests and eggs were noted afloat through the high water period of about 10 days in mid-June.

At the beginning of the fall hunting season it was estimated refuge grains had been about 30 percent comsumed. At that time lease land grain was completely harvested and row crops about 50 percent out.

Tall clover and sunflowers continued to stage a good reinvasion of perifery levees and roads due to cutback in the widespread use of herbicides by refuge, irrigation district and Bureau of Reclamation crews.

Fall planted wheat (Gaines) in the east half of Frey's Island was given daily, intensive use by some 200 to 300,000 cacklers in addition to varying numbers of snow, white-fronted and Canada geese. The crop was literally cropped to the ground level and held there for weeks.

II WILDLIFE

A. Migratory Birds*

The first week of January, while hunting was still in progress, we estimated Canada geese were 25 percent paired. This is believed the earliest flock separation activity ever recorded in northern California.

*O'Neill

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First flocks of migrant snow geese returned from the southlands February 8 and promptly moved over to Lower Klamath where some 40 percent of the previous fall barley (sharecrop) was still inundated from winter flood waters pumped out of the Tulelake basin. 8

Forms NR-1 and NR-1A depict general influxes and peaks for ready reference. Some specific arrival notes included: Wood Duck, February 14; Cinnamon Teal, February 17; and definite waterfowl influx started February 18. Whistling Swan moved north from the Tulelake basin March 13.

Annual Canada goose breeding pairs survey, conducted the week of February 20 disclosed 89 pairs using Sump 1-A and perifery. First Canada goose nest (6 eggs) was noted March 6 by trapper Gosnell on Sump 1-A. First brood note of the season (6) was by the writer on April 4. Total gosling production was down 7 percent compared to 1964 due perhaps to widespread water and habitat in the general area; too cold, wet periods in April and May when some 50 percent of large combined broods were lost; and gull depredations at a time when other food sources were low.

By the last week of March the estimated 390 Western Grebes using Sump 1-A were 75 percent paired and actively dancing-displaying.

Among ducks the first brood of the season (mallard) was recorded on Lost River May 5 by Operator Dale Green. The following day another brood emerged on Sump 1-A following which new broods were noted daily. Nesting peaks were somewhat delayed due to cool weather with the lowest numbers of total ducklings for a three year period. Precipitation of June 14 caused a half-foot water rise, as noted elsewhere in this report. Renesting activity never reached expectations. Redheads showed a slight increase in production. Season tally showed a 59 percent increase in total production over 1964 when all species were considered. There was a comparable increase in coots.

Fall migration into the basin was one to two weeks delayed for some species. First fall flock of geese to arrive was white-fronts (150) which showed up August 24. Total peak numbers approximated the 1964 migrations. Fall-winter use was up nearly 10 percent. The mild, open fall weather, and inter-change from Lower Klamath accounts for this increase. In October and November the flyway population of Cacklers was again present as noted under the Food and Cover section and Form NR-1.

Nine Emperor geese showed up the latter half of November. Two Tule geese were checked (after being dressed) at the local <u>Mallard</u> picking plant during November. A cross between an Emperor and a white-checked goose (Canada race) was brought in by a hunter in October.

Mid-November freezeups and several inches of snow again saw abrupt drops in numbers after which there was a continuous, weekly decline until seasonal lows were reached the last days of the year.

Among marsh and wading birds Green herons were observed on Sump 1-A in July. Nesting Night herons and egrets were uninterrupted and successful. American egrets nested and incubated over a much longer span of weeks and Snowy egrets were generally later than American egrets in nesting activity. White-faced ibis again nested on Sump 1-A but total numbers vary only slightly each year. First spring note of white pelicans was March 12 when two showed up. Latest fall record was the week of November 20 when 11 were seen. Again, Eared grebes persisted in renesting (or second stage) through the month of August. Favorite nesting area was the open water of the southeast portion of Sump 1-B where floating algae mats and sago pondweed provided necessary habitat.

B. Upland Game Birds*

Ring-necked pheasants started separating into breeding flocks the first week of March. Incubation of eggs started about mid-May, based on early broods seen. The earliest brood note was in early June. Wet, cold days in June were considered most decimating single factor involved in reproduction. Renesting was only a token effort and extended into mid-August in a few unusual instances. Considering this to be the second successive "tough" spring total numbers is probably the lowest in 25 years. Cock-hen ratio was high in the fall but considering total population we were surprised hunting was considered good this fall.

The Frog Pond unit yielded a higher pheasant kill than any other unit opened to hunters.

Valley Quail appeared hard hit by spring rains and cold. Lowest number of birds in four years was tallied along Hill Road and the south boundary.

The chuckar population continues on a downward population trend. On-off area estimates place the total at 30 to 50 birds.

C. Big Game Animals*

Mule deer numbers using the Sheepy Ridge-Southwest Sump area has dropped slightly (40) under previous, recent years tally of 50 to 60. Winter losses on ice accounted for 5 animals this year. Pheasant hunters and their dogs forced two of these out on Sump 1-B in November after complete exhaustion. This annual problem could be overcome with islands on Sump 1-B.

Antelope continued to show along Sheepy Ridge on occasions.

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

Coyote: Population status similar to last year. On-off area estimates place our population at an average of 20 animals. During the year Bureau Predator Control workers eliminated 25 adult animals by aerial shooting and trapping. Most of these had drifted in from adjacent National Park lands. Controls were initiated to protect sheep herds which intermittently grazed grain stubble in the Southwest sump, Panhandle and Frog Pond.

Raccoon: Although this species is low in total numbers using the area the population continues to show an increase.

Skunk: Estimated population shows signs of increase, however, not in the same proportion reported outside of the refuge proper. Undoubtedly last winter and spring floodwaters, as well as the activity of U.S. Bureau of Reclamation and Tulelake Irrigation District raising the west levee of Sump 1-B and the east and south levee of Sump 1-A, raised havoc with the denning and life cycle to the extent the refuge doesnot support a population in comparable density to areas outside.

Bobcat: It is estimated only several of the subject animals inhabit the area on an off-on basis. Sheepy Ridge and the south boundary were only areas inhabited from sightings and tracks.

Muskrat: There has not been a substantial increase in numbers this year among muskrats. Tough winter-spring conditions of water drawdown, followed by inundation, were main factors of control in reproduction and survival. The most successful trapping period came after the early February thaws.

Others: Cottontails and jackrabbits showed little status change if any. Numbers are still lower than four to five years ago. Marmots showed less reproduction gains than for two years. There were less grain depredations and control applications than at any time over the past four years. December 13 a small female was captured above ground on A Dike. Porcupines are at their lowest number in several years. Only an occasional individual shows up at headquarters or along Sheepy Ridge.

Microtus: The population of meadow mice didnot errupt as anticipated. Numbers generally continue on a comparative level as per the last four years with some minor variations and localized build-up in widely separated areas over the Tulelake basin. (See also under: Field Investigations and Applied Research).

Weasels are still increasing in numbers. Muskrat trappers took four weasels this year compared to one last. Increased sightings and road kills confirm increases noted.

Feral goats inhabiting Sheepy Ridge were observed on occasion. Winter counts indicate three males, 4 females and 1 yearling (Pierce and Sekora). In June the writer observed two _kids in the group. Rarely do these animals leave the rocky terrain of Hotel Rock. 11

Feral cats have not changed notably over the last two years. Flood conditions forced many from unual haunts and worked a hardship in areas like the Frog Pond and Southwest Sump. Pheasant hunters and their dogs again took a toll of the animals the first two days of the season when most of the refuge is opened. The population seems to continue rather static through the years.

E. Hawks, Eagles, Owls, Crows, Ravens and Magpies*

Winter population counts of Golden eagles are down some 50 percent this year, however, Bald eagles showed a more than double gain in numbers over last winter. This is believed accountable in part by the snow free mild winter season and the fact a considerable number of the Goldens prefer to follow the Interstate Deer Herd wintering in the Devil's Garden country. In February two dead Goldens were found in the Frog Pond unit where they had apparently toppled from the county road power line. Patuxent Research lab findings hadnot been received at this writing.

All other raptors appear to have enjoyed favorable population numbers and adequate food sources.

One Cooper's Hawk was added to this years observations for Tule Lake in December. The species is an infrequent visitor.

F. Other Birds*

Say's Phoebes returned (Peninsula Station) as early as January 30. Three Bohemian waxwings were at headquarters March 8 along with some 12 Cedar waxwings. The flock remained until April 23. A lone Orchard oriole showed up March 12. Townsend's warblers (3) arrived March 20 along with numerous Audubon's. Russet-sided towhees were here (2) as early as April 17 and as late in the year as December 15. Western kingbirds (4) arrived April 17 at the same time the first Swainson's thrushes (2) and Hermit thrushes were noted. Fall movements of passerines through the country were very leisurely in view of mild weather in September and October.

This has been a good year for Mourning doves with indication of fair reproduction as well as fall migrational influxes. First

nesting activity was noted May 9 when a nest with one egg was found at headquarters. Fall hunting (September) saw greatly increased pursual of the species over previous years.

G. Fish*

There appeared a definite increase in the rough fish population. Samples, for other studies, netted more fish per gill-net hour than for similar efforts over the past four years. In August there were some noteworthy losses (several hundred) among Tui chubs in and adjacent to the N Canal, particularly along the north and west sides of the League. Water sample checks by Health, Education and Welfare indicate lethal concentrations of endrin at the time.

A white sturgeon, measuring 64 inches was found during June in one of the Southwest Sump irrigation ditches. The species is not peculiar to the basin and evidence indicates this is one of some 200 which were imported from the Columbia River and released at the mouth of the Williamson River on Upper Klamath Lake in the 1950's. Access to the Tulelake basin has been by fresh water canal importations from Upper Klamath Lake. Through the years almost 20 percent of this introduction has been either retrieved or observed from time to time.

H. Reptiles*

Earliest spring note of reptiles (Blow snake) was along the south boundary, adjacent to the Lava Beds, where three were seen April 23. Popular opinion among field personnel is that rattlesnakes are increasing in the general area, however, none were seen on the refuge throughout the year.

I. Disease*

In mid-August a mild incidence of botulism occurred on the Tule Lake upper sump involving some 15 sick ducks and 385 dead mallards, pintails, redheads, scaup, gulls and unidentified ducklings. Hospital treatment with antitoxin injections was unsuccessful for some reason. Lab tests by Bear River Research Station indicated; "The blood of 2 of the 3 birds (lesser scaup and mallard) was positive for type C botulinal toxin..." also, "A small, gramnegative bacterium has been isolated from the tissues.." of some of the shorebirds, etc. sent in.

Sample collection of some of the same birds affected were checked by the H. E. W. lab in Klamath Falls, Oregon with following results.

*O'Neill

Species	Parts per billion chlorinated hydrocarbon	S
2 mallards (livers)	DDE 144 DDD &/or DDT 60 Heptachlor Epoxide 20 Dieldrin 38	
l gadwall (liver)	DDE 95 Heptachlor Epoxide 16 Dieldrin 72.1 Endrin 51	
l shoveler (liver)	DDE 330 DDD &/or DDT 40 Heptachlor 40 Heptachlor Epoxide 25 Dieldrin 7.8 Endrin 9.8	

Fowl cholera, though comparably mild, persisted among waterfowl species again this year.

On or about February 1 whistling swan and white-fronted geese in the Sacramento River delta area or Bouldin Island became infected (California Fish and Game correspondence). It has been long suspected all of our cholera-affected birds move in from the California delta-bay area. Since there is no practical treatment current pickup of dead is attempted but generally not practical because of iced-over units, predatorsand manpower limitations. February 20 to March 8 some five snow geese and one white-fronted goose were picked up on Sump 1-A. Lab tests confirmed cholera among these. Losses persisted through March with known loss of 18 snows, 7 white-fronts, 1 swan and 1 Ross' goose. About 100 dead geese were noted along the marsh front when we were able to check the area.

Lead poisoning was confirmed in several ducks (both divers and puddlers), swans, and Canada geese found dead around the marsh in the late winter.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development*

The southeast section of B-2 was restaked and a carryall scraper was used to retouch the field, after the winter flood, preparing it for seeding to grass.

Field D-6 was restaked following the winter flood and land levelling resumed in late May. The carryalls finished rough levelling three fields in July and three fields in December. The last three fields are still to be land planed.

This area is being levelled for experimental grass and legume seeding in an effort to curb spring goose damage on private pastures and alfalfa fields.

Three of the fields were land planed, fertilized, disced and seeded to Gaines wheat for fall and spring goose browse.

Started triple land planing approximately 80 acres on the south side of B-2 in one of the most heavily nematode infested sections of the South West Sump.

After land planing is completed, the field is to be deep plowed, portions fertilized and seeded for experimental nematode control.

Fifteen inch turnouts were installed in Tule Lake Buffer Fields B-4 and B-5. They will permit more efficient irrigation of these fields.

The Northwest 25 dragline cleaned the irrigation ditch on the south side of B-2 and also the irrigation ditch supplying water to B-2. Both these ditches were damaged as a result of the winter flood.

B. Plantings**

2. Trees and Shrubs

In the early part of July, eight willow trees were planted around the duck hospital in an attempt to provide shade, beautify the area and, at the same time, provide additional nesting habitat for the passerines utilizing the headquarters area. Due largely to deer depredation, four of the trees will have to be replaced.

* Christensen **Annear 14

Another step in the refuge beautification program was undertaken when Mrs. Chapman, our clerk typist, purchased some giant marigolds and some double-ruffled petunias. A strip of lawn was removed just in front of the office and the flowers were planted there.

4. Cultivated Crops*

It was not necessary to pre-irrigate refuge agricultural buffer lands because of flood conditions and opportune above-normal precipitation. Spring farming operations commenced on April 19 and were completed May 7. Utah winter barley was planted on 201 acres and hannchen barley on 1,940 acres.

In mid-May, 100 acres located in D-4 and 5 was replanted because of damage by mites and frost.

In July, B-1, 3, 6, 7 and portions of B-2 were irrigated.

Levelling operations on three of six fields totalling 114 acres in D-6 were completed in July. Between August 3-20 these fields were preirrigated and planted to Gaines winter wheat. Levelling operations on 104 acres in the remaining three fields was completed in December.

In August 1964 an Austrian winter pea - Gaines winter wheat crop was planted in a 50 acre field located in the southeast corner of B-2. It did not survive because of excessive moisture.

Early in June, after flood waters had been removed, the area was seeded with a mixture of 66 percent Kentucky bluegrass, 17 percent Dutch white and 17 percent alsike clover at a rate of 13 pounds per acre. Response of this seeding has been disappointing and reseeding will be necessary.

Ample food was produced on Tule Lake buffer fields for resident and fall migrants even though production on all fields was materially reduced by the root knot nematode (<u>Meloidogyne nassi</u>) infestation (see FIELD INVESTIGATION OR APPLIED RESEARCH). Production records for 1961 through 1965 are tabulated below.

Year	Acres	Crop	Bushels Produced	Bu. Per Acre
1961	2,390 <u>110</u> 2,500	Hannchen Barley Utah Winter Barley	$\frac{154,190}{8,250}$ 162,440	$\begin{array}{r} 64.5\\ \underline{75.0}\\ 64.9\end{array}$
1962	2,500	Hannchen Barley	104,166	41.6
1963	2,403	Hannchen Barley	124,928	52.0
1964	1,939 202 2,141	Hannchen Barley Utah Winter Barley	$\frac{114,930}{14,520}$ 129,450	59.3 72.0 60.5

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Year	Acres	Crop	Bushels Produced	Bu. Per Acre
1965	1,940 <u>201</u> 2,141	Hannchen Barley Utah winter barley	89,830 <u>11,280</u> 101,110	$\begin{array}{r} 45.3\\ \underline{56.1}\\ 50.7\end{array}$

Four thousand five hundred twenty nine (4,529) bushels of hannchen were harvested for seed and the remainder was left standing for feed.

Operation and maintenance assessments per acre of irrigable land (2,409.7 acres in refuge buffer lands) for 1966 are \$9.00 per acre for a total cost of \$21,678.30.

C. Collections and Receipts

2. Specimens*

In January, requests for collection of 25 coots to complete California Fish and Game analysis of some 10,000 stomachs gathered state wide were complied with.

In March, 3 white-fronted geese were collected for California Fish and Game researchers for protein difference determinations (chromatography and electrophoretic separation) in the current white-frontedtule goose investigations.

Some nine specimens of winter plumage ducks were gathered during the season and submitted to Patuxent researchers to further studies on wing analysis and characteristics for confirmation and for the key manual in production.

In March, a cooperative pesticides monitoring program (project P-R, FW-1-R) was initiated between the Bureau and California Fish and Game Department. Over a two-year period one or two bird species will be selected for future monitoring of degree of contamination of wild birds by chlorinated hydrocarbon insecticide. Locally the Bureau will submit two to three eggs from the nests of 18 species of birds including waterfowl, passerine, marsh, shorebirds and raptors.

Some 90 percent of our requested collection was met during the spring.

For the pesticides in eagle-research monitoring program by Patuxent, two golden eagles (found dead) were sent in in March.

In June, one mule deer and seven antelope leg hocks were submitted to Public Health's animal investigation program for radiation (90_{sr}) .

Samples included soils and vegetation of the area. All collections were from hunters or known road kills during the 1964 season. Again in December, four antelope hocks and two mule deer hocks were sent to the Public Health labs for analysis.

In November the Canadian Wildlife Service was furnished four live cacklers, three white-fronts, two snow geese and one Ross' goose for a waterfowl park-display area at Vancouver, B.C.

Also in November the Portland Zoo was supplied 23 white-fronted geese, three mallards, one Canada goose, one snow goose, and 14 cackling geese.

D. Control of Vegetation*

A total of 3,343 acres were sprayed for noxious weed control at a cost of \$1,825.25, or \$.55 per acre. All but 25 acres of that total was sprayed by aircraft. Principle herbicide used was the amine salt of 2,4-D.

For a complete breakdown of vegetation control see the following table.

IV RESOURCE MANAGEMENT

B. Haying**

Due to extremely favorable moisture conditions this year, one permit was issued for the purpose of removing the overstory of old vegetation which inhibits spring growth along the south berm of Lava Beds National Monument entrance road from pumping plant "B" to "N" Canal and berm on south side of Frey's Island.

C. Fur Harvest***

A total of 6,540 muskrats were harvested off the Tule Lake and Lower Klamath Refuges by six permittees during the 1964-65 trapping season, November 16, 1964 through March 31, 1965. The bulk of this harvest was taken from mid-February through the end of March. During this period, warm temperatures kept the marshes open, providing excellent trapping conditions. Trapping results are tabulated below:

Permit <u>Number</u> T-8834 T-8835	<u>Name</u> Gosnell Bloch	Tule Lake 4,006 1,755	Lower <u>Klamath</u>	<u>Totals</u> 4,006 1,755	Gov't Share 1,001 438	Trapper's Share 3,005 1,317
T-8832 T-8833	Coil) Llewellyn)	35		35	9	26
T-8827	Stonecypher		626	626	125	501
T-8828	Mitchell		118	118	17	101
	TOTALS	5,796	744	6,540	1,590	4,950

The average price per pelt was \$1.14 on the open market compared to \$1.29 in 1963-64 and \$.98 in 1962-63.

Species	Mixed Weeds*	Mixed Weeds*	Mustard(Brassica spp.)	Mixed Weeds*
Control Dates	7/30,8/3,9/7	7/21,8/18-19,9/7	6/17	5/29,6/11-13, 6/27
Growth Stage	Various	Various	Seedling	Seedling
Acreage	3	2	20	3,318
Location	N Canal Lost River English Channel	Headquarter's park lot N Canal	Headquarters A-1 Dike	Frey's Island Headquarters field B, C, D fields
Chemical	Trysben	Trysben	2,4-D Amine	2,4-D amine
Diluent	Water-15 gal/Ac.	Water-15 gal/Ac.	Water-12 gal/Ac.	Water-2 gal/acre
Rate(lbs/Ac)	2.0	2.0	2.5	.50
Method	Ground rig- Hand wand	Ground rig- Hand Wand	Ground rig-hand wand	Aircraft
Cost: Material Labor &	\$ 25.50	\$ 17.00	\$ 27.00	\$ 895.86
Equipment	26.85	$\frac{17.90}{34.90}$	52.00	763.14
TOTAL	\$ 52.35	\$ 34.90	\$ 79.00	\$1659.00
Cost/Acre	\$ 17.45	\$ 17.45	\$ 3.95	\$.50
Apparent Kill	90 %	90 %	90 %	95 %
Actual kill in past years	90 %	90 %	90 %	95 %
Remarks:	Canada thistle primarily(Cirsium arvense)	Perennial sow thistle perimarily (Sonchus arvensis)		Nettle(urtica) mustard (Brassica) Bassia(Echino psilon) Lambsquarter (Chenopodium)

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FIELD INVESTIGATION OR APPLIED RESEARCH

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A. Progress Report*

1. Banding

Due to limitations of manpower and the weather conditions following closure of the hunting season, no spring waterfowl banding was accomplished.

The California Fish and Game Department cooperative (Pittman-Robertson) program met our fall pre-season quotas (1,000 pintails; 1,000 mallards) with the following:

Species	Male	Female	Totals
Mallard	763	237	1,000
Pintail	581	310	891
Redhead	69	31	100
		TOTAL	1,991
White-fronted goos	e		483
Ross' goose			7
Cackling goose			1,417
Lesser Snow goose		Ξ.	769
		TOTAL	2,676

During the nesting season another 100 common egret nestlings were banded in the Sump 1-A colony.

The following tabulations show returns of banded birds which came in during the year.

2. Meadow Mouse (Microtus m.)

As indicated elsewhere in this report (Sec. II, D.) population eruption among <u>microtus</u> did not present a problem. The week of February 15 trapping samples by state and county workers along the east edge of the Frog Pond unit gave rise to a suspected population eruption in the making (300 trap nights with 79 <u>microtus</u> taken of which 61 were pregnant females). April 6-8 sample trapping showed 65 <u>microtus</u> among which there were no pregnant females.

1965 BAND RECOVERIES (STATION AND FOREIGN)*

Tule Lake - Lower Klamath Refuges

Species Location	Canada Goose		White- front	L. Snow goose				Bald- pate	G-W Teal	Cinn. Teal	Shov- eler			D-B Corm.	G-B Heron	Calif & R-B Gull	White Pelican	TOTALS
California Oregon Alaska Alberta B. Columbia Idaho Illinois Mexico Nevada Russia Saskatchewan Texas Utah Washington Unknown	17 5 2 1	42 2 5	2	41 12 3 2 1 1 2 1 1 1 1	33 5 2 1 2	59 7 1 4 1 1 1 2 6	1	1	1	1	17	7 4 1 1	5	4	5 3 1	52	8 1 6 4 2	249 41 9 10 2 9 1 6 4 2 2 1 1 5 12
TOTALS	27	51	63	65	44	82	1	1	1	1	17	14	5	5	9	7	21	354

*Sekora

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Two check lines of 100 trap nights manned by the writer from March through August plus the data from a permanent, year-around, formalin jar deadfall-drift fence project did not indicate any cause for alarm. It is still very difficult to "census" <u>microtus</u> and, after two years of inaccurate prediction, it appears much is lacking in our ability to project or predict population eruptions. 21

Meetings were held locally with both counties, Tulelake Irrigation District, Bureau of Reclamation and farmers concerning implementation of the all-out poisoning program planned and agreed to one year ago. Weather delayed the field work schedule considerably. Early April to May saw an estimated 200 acres of ditch banks in the League and Frog units were baited (1,080 treated oat groats; 5 pounds of 2 ounce or 20 percent treated, mixed with clean grain) by personnel of Modoc, Siskiyou Counties and the California State Agriculture Department. Application of poisoned grain was by jeep-mounted cyclone broadcasters covering a 30-foot width per pass. Refuge buffer strips (C fields and north of Sump 1-B) were covered by the writer and others with hand cranked broadcasters. The task of monitoring the 200-odd miles of canal and drain banks fell to the writer to scrutinize wildlife losses, if any.

Rodent control supervisor Frank Weatherbee cooperated in assistance of running population checks before and after baiting areas. Some 300 live trap days were spent checking the "A" Dike and north Sump 1-B levee area during which accurate tabulation was compiled on all species of rodents which were marked and released.

Although serious population numbers never materialized, the effort demonstrated effective reduction of the existing breeding population by 80-90 percent on treated banks. It was concluded further that no immediate or visible losses of wildlife took place. This is the first time a consolidated effort has ever been programmed by all local interests and controlling agencies before serious losses had been incurred. Total cost of bait was estimated at \$200.

3. Nematode Infestation

As related in previous report, nematodes cause module-like enlargements of the root system to a depth of several inches, deteriorate and collapse growth resulting in little or no harvest.

Throughout the late winter months researchers at the University of California, Davis, determined the unknown species of nematode infesting some 600 acres of the Southwest Sump unit would thrive on at least five host plants or crops in Tulelake Basin.

Several meetings were held locally and at Davis, California to resolve problems and formulate plans. In June it was announced by University

of California Entomologist Dr. M. W. Allen that an English nematologist (Franklin) working on similar infestations in England and Wales had "scooped" U.S. Nematologists by describing the same unknown nematode, <u>Meloidogyne</u> <u>naasi</u>, that inhabited the Tule Lake Refuge.

By late summer the U. S. Bureau of Reclamation (primary land controlling agency) had completed 65 man days in field survey and checking of the area covered during nine hours of aerial, helicopter work. A total of 68,801 acres in the basin of which some 28,257 were inspected and 4,559 found infested. No infestations were noted on private land although the possibility is very good since there has always been a high degree of travel and exchange of equipment, etc. between private and lease lands. Aerial (infrared) photos were likewise used to spot infested fields.

In July, greenhouse tests from Davis disclosed a known range of some 25 host plants including grasses, clovers, all true grains, potatoes, beets, onions, etc.

In late summer the California Bureau of Plant Pathology recommended that, since all of the known infested fields are on federal lands (mostly on refuge-farmed buffer strips), a quarantine be set up prohibiting movement of equipment from the area without thorough cleaning and that no potatoes grown in the area be used for seed purposes and that certification applications for future seed production be denied indefinitely.

In September, a cooperative two-acre study plot, with 20 replicates, was laid out in the Southwest Sump unit by the refuge, Bureau of Reclamation and University of California researchers. Several grain and root crops will be tried on land treated by deep plowing, Telone funigants, sprinkler irrigation, shallow cultivation, etc. to immediately study the situation for recommendations to local growers. After much administrative study, the Fish and Wildlife, Bureau of Reclamation, and the University of California have evolved a five-acre research study agreement with University nematologists wherein each will contribute \$5,000 yearly for a four-year study to resolve the nematode problem.

4. Pesticides Studies

The study program by research involving several years of investigation into the loss of wildlife species through pesticides, either directly ingested or obtained through food chain organisms was continued throughout the year cooperating with James 0. Keith.

Fish, water, birds, zooplankton, etc. sample collections were continued as in past years. A laboratory contract was initiated by Keith to

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process a backlog of collections and when this research is brought up to date, additional reports will be possible.

Cooperative Research Studies*

The water quality studies by Health Education and Welfare continued throughout the year. Although water quality studies are the main interest, the work involves considerable tests for pesticides and impurities which affect water quality for all interests in the Lost River-Klamath River drainages.

Cooperation involved collection of mallard, gadwall, and redhead ducklings along the course of Lost River and in Tule Lake waters for pesticides analysis. Fish, frogs, mussels, zooplankton, plants, water and benthos samples were likewise collected and analysed. A comprehensive report is forthcoming within the next year which will include: measure and identity of pollutants; relationship between land use and pollutants and wildlife losses; role of irrigation practices in surface water pollutants; effects of nutrients from agricultural land drainage; recommendations to control or eliminate damaging effects.

During the summer the product toxaphene showed up in increased amounts in samples after almost complete absence. DDT likewise showed increases with .8ppm in chubs at B-pump during one sample period. Dieldrin was suspected the cause of fish and bullfrog losses in August when tests ran rather high (see also: Wildlife, Diseases).

Health, Education and Welfare's findings substantially now illustrate that measurable amounts of hydrocarbons increase through July and the first part of August. In about mid-August there is a tapering off in amounts and concentration until September. Early August is the period of highest probable concentrations as conditions have existed the past two years. The obsorption of pesticides by fish show similar increases and declines; however, the curve is delayed with peak intake about or after mid-August.

Pesticides Monitoring Program*

A state-wide program to monitor pesticide levels in birds is being undertaken by the California Fish and Game Department. Cooperative collection of eggs in the Tulelake-Lower Klamath Basins were carried out under a two-year data gathering project involving certain shorebirds, waterfowl, passerines and raptors found throughout the state (see also: Collections, Specimens).

5. Grasshopper Control Program**

An infestation of grasshoppers intense enough to justify control measures was experienced again this year on Tule Lake Refuge. Technical assistance and funds for materials were furnished by the Plant Pest Control Division of the United States Department of Agriculture. Following is a breakdown of the 1965 control program:

Chemical and carrier: 8 oz. carbaryl (sevin) in 1/2 gallon of water per acre.

Method of application: Aircraft.

Results:

Pretreatment

Post-treatment

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Tule Lake

Area	Density	24 hrs.	<u>48 hrs</u> .	<u>72 hrs.</u> 7	days	14 days
B-2	5 per sq.yd.	10	7	showers prevent	$3\frac{1}{2}$	no count made be-
B-4	$22\frac{1}{2}$	18	11	obtain- ment of	$7\frac{1}{2}$	cause of rain
B-5	28	21	14	sufficient informa-	$3\frac{1}{2}$	Tuin
B-6	28	18	15	tion for reporting	$5\frac{1}{2}$	
B-7	28	20	$13\frac{1}{2}$	reporting	$4\frac{1}{2}$	
Lower	Klamath					
Unit 5	14	10	$7\frac{1}{2}$		6	
" 12	15	12	11		4	

A total of 1,800 acres was sprayed for grasshoppers. Cost was \$2,432.40 or \$1.35 per acre.

VI PUBLIC RELATIONS

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A. Recreational Uses* -Summarized on NR-6.

For the first time parts of Tule Lake Refuge were open to frogging. "N" Canal and that portion of Lost River north of the Tule Lake Marsh was open August 1 through September 30. Limits were 24 frogs of any size, taken anytime of day or night. There was negligible frogging use. Recommendations for 1966 are for no season based on the questionable consumptive value of the frogs and apparent lack of interest in the sport.

B. Refuge Visitors**

Date	Name	City & State	Affiliation
1/21	Art Huey	Portland, Ore.	USFWS
11	John Mack	π	11
2/3	Loren C. Holt	Sacramento, Calif.	USBR
11	R. Gene Pollan	Klamath Falls, Ore.	n
11	Herbert W. Finke	Sacramento, Calif.	n
Numerous	C. D. Lawrence	Klamath Fall, Ore.	11
2/8	Ted Picco	Tulelake, Calif.	USNPS
2/9	Marv Hoffer	Redding, Calif.	USFWS
Numerous	R. E. Talbert	Redding, Calif.	Calif. D. of A.
Numerous	Gordon C. Ashcraft	Redding, Calif.	Calif. F&G
Numerous	Douglas J. Thayer	Wendel, Calif.	11
Numerous	Elmer C. VonAllmen	Montague, Calif.	11
2/9	Tom E. Ramsey	Red Bluff, Calif.	22
Numerous	Leo Pyshora	Wendel, Calif.	18
2/9	C. F. Miller	Alturas, Calif.	72
Numerous	Frank A. Wetherbee	Sacramento, Calif.	USFWS
Numerous	Gene N. Deal	Tulelake, Calif.	Calif. D. of A.
2/25	Kenneth W. Wright	n	Ħ
3/1	Joe Schuh	Klamath Falls, Ore.	None
Numerous	Rick Keck	Redding, Calif.	Calif. D. of A.
3/11	L. W. Hanna	Klamath Falls, Ore.	Vector Control
Numerous	Carl Overmier	Alturas, Calif.	PHS
Numerous	Harold Corbin	Portland, Ore.	USFWS
3/31	M. J. Weddin	Sacramento, Calif.	USBR
4/2-3	Roy Renoud	Portland, Ore.	CAS
4/8	L. C. Richards	n	Mining Eng.
Numerous	Ray Glahn	11	USFWS
4/10	Jim Yoakum and 10	Arcata, Calif.	Humboldt State
	Students		College

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Name

Tom Stone

Don Adams

Tom Rosten

Paul Quick

Vernon King

Kay Sanders

Bob Fay

Bill Johnson

Bob Jennings

Gerald Davis

Bob Brockson

60 Students

25 Students

Russell Betts

Glen Crabtree

Carl H. Coad

Dave Lenhart

F. N. Hartley

A. L. Newman

Frank Melo

Bill Eoff

W. H. Hart

Ken Baghott

Dave Bunger

Robert Hume

Mr. Anderson

Gary D. Rundall

Don Mausshardt

Dave Hopkins

L. M. Jansen

Mike Lawler

Seth M. Parkinson

Bob Peyton

Earl Ager

Harold L. Shaffer

Frederick W. Schuierer

Maynord Cummings

Art Hayes

Dave McIntyre James O. Keith

Cameron Thatcher

50 members of Outdoor Club

Mike McGourty

Samuel Benjamin

Z. E. Parkhurst

Elton D. Bailey

Chester Woodhull

Don Kettler

Randall F. Reeves

Date

4/14

4/21

4/26

4/27

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4/29

4/30

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5/14

5/18

5/20

6/16

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6/17

6/22

6/23

6/29

7/9

7/12

n 7/7

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11

Numerous

Numerous

Numerous

Numerous

Numerous

6/15

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Numerous

5/3

Numerous

Numerous

4/28

11

Numerous

City & State

Redding, Calif. Eureka, Calif. Klamath Falls, Ore. Tulelake, Calif. Klamath Falls, Ore. Washington, D.C. Portland, Oregon Redding, Calif. 11 Alturas, Calif. Klamath Falls, Ore. 11 Redding, Calif. 11 Portland, Ore. Corvallis, Ore. 11 11 Davis, Calif. Montague, Calif. Merrill, Ore. Tulelake, Calif. Tulelake, Calif. 11 . Denver, Colo. Davis, Calif. Portland, Ore. Sacramento, Calif. ----------Davis, Calif. Tulelake, Calif. Klamath Falls, Ore. Chico, Calif. 19 Palo Alto, Calif. 22 Alturas, Calif. Medford, Ore. Pullman, Washington Tulelake, Calif. Klamath Falls, Ore. 11

Chico, Calif.

Affiliation

SCS Calif. F&G SCS Herald & News USFS USBR Foreign Student USFWS 11 Calif. F&G 11 Ħ PHS 11 BLM 11 7th Day Adventist Church OSC 11 11 U.S.FWS Calif. F&G Elementary School Elementary School **USNPS** 11 USFWS U of Calif. Berk. D. of Justice USFWS (Siskiyou County Sportsmen 11 tt U of Calif. Davis U of Calif. Berk. USBR USDA 11 Stanford Univ. 11 Calif. F&G BLM USDA County Supervisor **USPHS** 11 USDA 11

Date	Name	City & State	Affiliation
7/13	Kenneth F. MacDonald	Portland, Oregon	USFWS-Retired
7/19	Bob Mullins		Calif. F&G
11	Ralph Carpenter		12
7/21	E.A. Brown and 8		
	Students	Medford, Ore.	High School
Numerous	Gil Harmon	Sacramento, Calif.	USDA
7/22	Don Lewis	Ruby Lake, Nevada	USFWS
7/31	Newell B. Morgan	Willows, Calif.	n
8/4	Kamel Y. Michaiel	Giza, Eqypt	Ministry of Agric.
8/8	15 N.W. Gifted	Seattle, Wash.	N.W. Gifted
	Children		Child Assoc.
8/12	William Anderson	Gridley, Calif.	Calif. F&G
11	Jim Gilman	Redding, Calif.	TT
11	Jack Slosson	n	π
15	Gary Monroe	Eureka, Calif.	11
11	Kenneth Conrad	11	17
Numerous	Frank M. Kozlik	Sacramento, Calif.	Ħ
8/12	Floyd Hanzik	Honey Lake, Calif.	Π
17	Robert A. Weld	11	11
Numerous	Harry A. George	Gridley	11
8/12	Malcolm E. McDonald	Utah	USFWS
8/18	Richard K. Tucker	Davis, Calif.	11
8/19	William E. Clark	Sacramento, Calif.	Calif. F&G
IT	Brian Hunter	T	n
Numerous	Warren C. Rienecker	Gridley, Calif.	17
Numerous	Robert Dougall	Portland, Ore.	USFWS
n	Harold Kniskern	Tulelake, Calif.	TID
11	Don Chipman	Yreka, Calif.	Calif. F&G
8/26	Nicholas Whelan	Tulelake, Calif.	USNPS
8/26	Will Garner	Washington, D.C.	USFWS
n	Delmar Davis	Portland, Ore.	11
#	George Ducret		
8/29-9/3	Kebede Ali	Ethiopia	Student "
	Raphael Wanjohi	Kenya	
11	Edovard Benjamin	Rep. of Guinea	11
88 65	Cornelius Agobi-iwe	Nigeria	
11	Robert D. Hostetter	Portland, Oregon	BLM
	Warren Ahlstrom		USFWS "
Numerous "	R. A. Wonacutt		1
11	Lee R. Jocoby		11
11	David B. Marshall	n	10 H
9/20	Robert F. Russell		TID
	Fred Fahner Dave Allen	Tulelake, Calif. New York	Nat'l Geographic
Numerous			U of Calif. Davis
10/7	B. Miyagowa Albert W. Johnson	Davis, Calif.	II
	Winfield H. Hart	n	12
10/12	William Graf	San Jose, Calif.	San Jose State
			College
10/13	Harold Norlin Johnson,	ru berketey, Calli.	Calif. PHS

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Date	Name	City & State	Affiliation
Numerous	Ed Lance	Tulelake, Calif.	TID
10/13	William Groves		Nat'l Geographic
10/22	John Lynch	Lafayette, La.	USFWS
22	J. Horton Jensen	Brigham City, Utah	11
10/26.	Wendell Miller	Berkeley, Calif.	SCS
89	William Murphy	n	12
n	John Barnes	12	11
Numerous	R. D. Harris	Vancouver, B.C.	Canadian Wildlife Service
Numerous	Dave Bunger	Klamath Falls, Ore.	USBR
11	Robert F. Gray	Weed, Calif.	Calif. F&G
11	Vernon Ekedahl	Portland, Ore.	USFWS
1 .			

Corvallis, Ore.

C. Refuge Participation*

12/14

12/15

Robert F. Russell - Refuge Manager

Bill Scott

Dr. Richard Marston

- 1/11/65 Attended water control meeting at Klamath Falls, Oregon with other organizations concerned with Klamath Basin water problems.
- 3/11/65 Along with John Van den Akker, Assistant Regional Refuge Supervisor, inspected proposed Siskiyou refuge and attended meeting on same sponsored by the Associated Chambers of Commerce in Dunsmuir.
- 3/24 Met with Siskiyou and Modoc County Agriculture Commissioners and Bureau of Reclamation regarding microtus control on Tule Lake Refuge.

Attended weekly Rotary meetings whennot on Regional Office detail.

Robert F. Russell and William Nuess - Refuge Manager and Assistant

2/10 Attended public hearing at Henley, Oregon to discuss depredations problems with interested ranchers, farmers and sportsmen. The meeting was chairmaned by Mr. Clint Lostetter Assistant Regional Supervisor, Branch of Management and Enforcement. Refuge Manager Russell explained the purpose, objectives, and program of the Klamath Basin Refuges with special emphasis on the refuge farm program designed to alleviate spring goose depredations. Game Management Agents Garratt and Rush explained Game Management's role in spring depredations control, including enforcement of migratory bird regulations, use of bird frightening devices, and assistance available from the local management and enforcement office. Approximately 100 attended. 28

Portland Zoo

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Robert C. Watson - Refuge Manager

- 7/28 Met with representatives of Bureau of Reclamation and extension service regarding setting up a nematode control study plot.
- 9/1 Presented program at the Tulelake Rotary meeting with four African students as featured guests.
- 9/2 Attended meeting in Berkeley regarding establishment of nematode control study plot with representatives of the University of California and Bureau of Reclamation.
- 9/23/ Attended meeting at Tulelake Experiment Station regarding quarantine restrictions in the Southwest Sump and Panhandle areas re nematode problem.
- 10/29 Attended 55th meeting of the California-Nevada Interstate Compact Commission in Reno, Nevada.
- 11/5 Escorted eleven members of the Tulelake Garden Club through Tule Lake Refuge.
- 11/26-27 Conducted Golden Gate Audubon Society on tour of Tule Lake and Lower Klamath Refuges.'
- 12/17 Attended compact review meeting with Bureau of Sport Fisheries and Wildlife and Nevada Fish and Game Department personnel in Reno, Nevada.

Attended weekly Rotary meetings the latter part of the year.

William Nuess - Assistant Refuge Manager

- 1/25 Attended Klamath County Land Use Committee meeting at Klamath Falls, Oregon.
- 6/3 Attended Flood Control meeting in Pacific Power and Light Company office at Klamath Falls, Oregon
- 6/16 Attended Tulelake Basin Pheasant Habitat Development Program meeting which is under sponsorship of the Tulelake Kiwanis.
- 8/4 Conducted Mr. Kamel Yacoub Mickaiel, Plant Pathologist, Ministry of Agriculture, United Arab Republic, on tour of Lower Klamath and Tule Lake Refuge.

8/8 Conducted 15 members of the Northwest Gifted Child Association, from Seattle, Washington, on tour of Tule Lake and gave talk on Bureau objectives and operations. 30

- 9/14 Presented program to 32 members of the Mt. Shasta Rod and Gun Club. Discussed current waterfowl regulations and hunting areas.
- 1965 Served as Assistant Scout Master, member of the Board of Review and Merit Badge Counselor, Tulelake Troop 44 in 1965.

Edward J. O'Neill - Wildlife Management Biologist

- 1/25-29 Participated in the Pacific Flyway wing analysis at Yuba City, California.
- 2/17 Attended organizational meeting of the Klamath Basin Chapter of the American Range Management Society.
- 3/4 Along with Messrs. Jim Keith and M. Morton met with members of U. S. Public Health regarding pesticide research program.
- 4/10 Gave talk and conducted tour of Lower Klamath and Tule Lake for 11 wildlife management students from Humboldt State College.
- 4/27 Attended Inter-Agency Big Game Habitat Recommendations meeting conducted by the Oregon Game Commission at Bend, Oregon.
- 5/1 Gave two talks to 49 members of the Seventh Day Adventist Outdoor Club, and conducted a tour of Tule Lake for same.
- 5/14 Gave talk, conducted tour of Lower Klamath for 60 Merrill, Oregon grade school students.
- 5/15 Gave slide talk, conducted tour of Tule Lake for two groups, 23 students of Southern Oregon College Natural History and Ornithology classes.
- 5/18 Conducted field botany trip for 25 Tulelake elementary school students on Tule Lake and Clear Lake Refuges.
- 6/9 Attended Interstate Inter-Agency Wildlife Range Habitat Management Symposium at Klamath Falls, Oregon.
- 6/10 Attended California section tour and meeting of the American Society of Range Management at Susanville, California.

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- 6/12 Gave talk and conducted tour for 60 members of the American Society of Foresters on Klamath Forest Refuge.
 - 6/15 Conducted Mt. Shasta Sportsmen's Club on tour of Lower Klamath to inspect algae duckling losses as claimed at public meeting by County Supervisor Earl Ager.
 - 6/17 & 30 Participated in general meetings regarding nematode research, infectation and possible controls.
 - 7/18-8/7 Detailed to Creston, British Columbia, at the request of the Canadian Wildlife Service, to participate in formulation of a cooperative marsh development program for the Duck Lake - Kootenay Flats area.
 - 8/12-13 Conducted tour for 14 California Fish and Game Department biologists and Game Managers and served as training instructor on local marsh management and plant collections.
 - 11/14-16 Attended sessions of the Northwest Section of the American Society of Range Management at Corvallis, Oregon.
 - 12/28 Gave talk and showed film to 60 members of St. Augustines Church, Merrill, Oregon.
 - Jan.-June Served on Tulelake High School P.T.A. Adult Programs and Discussions Committee.
 - 1965 Served as scribe for monthly Tulelake Basin Inter-Agency Forum meetings and tours.

Palmer C. Sekora - Refuge Manager

- 5/13 Gave talk to Future Farmers of America banquet at Yreka, California concerning refuge history and operations.
- 5/15 Conducted car and canoe tour of Tule Lake Refuge for Klamath River Boy Scout Troop 12.
- 5/21 Conducted 20 members of the Eugene, Oregon FFA on tour of Tule Lake Refuge.
- 6/10 Attended Interstate Interagency Wildlife Habitat Management Symposium tour of the Clear Lake, Mt. Dome areas.
- 9/23-27 Detailed to Malheur Refuge to assist with law enforcement and check station duty during annual archery hunt.

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Gaylord L. Inman - Refuge Manager

- 6/12 Conducted 35 members of the Creswell, Oregon Future Farmers of America on tour of Lower Klamath Refuge.
- 7/15 Showed movie and conducted tour of Lower Klamath and Tule Lake Refuges for 15 teachers of the Southern Oregon College Summer Conservation Education class.

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- 7/21 Showed movie and conducted tour of Lower Klamath and Tule Lake Refuges for nine members of the advanced biology class from Medford, Oregon High School.
- 11/17 Showed movie and gave talk regarding refuge operations to 30 members of the Klamath Falls, Oregon Izaak Walton League.

Delano A. Pierce - Refuge Manager

3/8-19 Attended two-week Supervisor Training Course conducted by the International Association of Chiefs of Police at Denver Colorado.

Miscellaneous

- 1/29-30 O'Neill, Pierce, and Sekora attended the California-Nevada Section meeting of the Wildlife Society at Davis, California.
- 2/26-27 O'Neill and Sekora attended the Oregon Wildlife Biologists meeting and formation of a wildlife society section at Corvallis, Oregon.
- 3/27-5/1 Pierce and Inman attended the Refuge Manager Training School at Arden Hill, Minn.
- 6/4 O'Neill, Nuess, and Sekora attended the antelope hunting game commission public hearing at Alturas, California.
- 6/15 Nuess and O'Neill attended the Tulelake Pesticides Review Committee meeting.
- 7/13 Watson, Nuess, O'Neill, Morfitt, and Shults participated in the formal dedication of Lower Klamath Refuge as a registered National Historic Landmark.
- 7/14 Watson and Nuess met with California State Agriculture Department representatives regarding a nematode control survey.

- 8/8-9/20 Sekora and Inman participated in the Canadian Banding program at Brackett Lake, N.W.T. and Mills Lake, N.W.T. respectively.
 - 8/11 Watson and O'Neill met with U.S. Public Health Service representatives regarding submission of data to assist PHS in the Upper Klamath Lake algae study.
 - 8/29-9/2 Refuge personnel hosted four African students under the African Student Conservation Training Program sponsored by the National Park Service. Students participating in the training program were from Nigeria, Ethiopia, Kenya, and the Republic of Guinea.
 - 9/9-13 Refuge personnel assisted with Bureau-Refuge display at Tulelake-Butte Valley Fair.
 - Sept.-Oct. Refuge personnel assisted Dave Allen, photographer, from the National Geographic Magazine, take pictures of waterfowl and refuge activities for a story the magazine will publish on the National Wildlife Refuge system.
 - 10/8 Refuge personnel met with state and federal game enforcement officers in preparation for the waterfowl hunting season.
 - 10/9 Watson and Nuess conducted a pollution abatement party, headed by Major General Pletcher, Deputy Surgeon General of the Air Force, on tour of the Tule Lake water facilities.
 - 10/9 Ed Downing showed movies to 75 members of the Seventh Day Adventist Outdoor Club of Merrill, Oregon.
 - 10/23-24 Watson and Sekora conducted members of the Portland Audubon Society on tours of Tule Lake and Lower Klamath Refuges.
 - 11/6 Watson, O'Neill, and Sekora conducted members of the Tulelake Basin Inter-agency Forum on tour of Tule Lake Refuge.
 - 11/19 Watson, Mac Farlane, Inman, and Sekora attended the peace officers dinner in Tulelake sponsored by Mrs. Victoria Thaler.
 - 11/26-27 Watson and O'Neill conducted Biologist Bob Harris, Canadian Wildlife Service, on tour of Tule Lake Refuge.

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D. Hunting*

<u>Waterfowl</u>: During the straight 90-day waterfowl season, October 9 to January 6, an estimated 15,700 hunters harvested approximately 24,340 birds for an average of 1.55 birds per hunter per day on the Tule Lake hunting area. Goose kill averaged .79 per hunter and duck kill .76 per hunter per day. Estimated crippling loss was 4,900 birds.

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Marsh hunting was excellent from the opening through mid-November with an average daily bag of well over two birds. Drawdown of the sump was initiated by the Tulelake Irrigation District November 4. As usual this limited boat travel into many areas of the marsh. Cold weather closed much of the marsh by mid-November but a few potholes remained open through the season's end to provide some hunting for those hardy enough to hike to them. Marsh hunters averaged, for the season, .50 geese and 1.72 ducks for a total average of 2.22 birds per hunter per day.

Field hunting improved over last year although migration was two weeks later. "Bluebird weather" dominated the first two weeks and resulted in poor hunting success. The migrational peak occurred the first of November as did the first of several fast moving storms that frequented November. This combination provided excellent hunting that lasted through mid-November when snow and freezing temperatures stimulated a mass waterfowl movement out of the area. However, goose hunting remained excellent in the League of Nations and on the east side of the Frog Pond till the first of December and again from mid-December to the season's end. Field hunters averaged .97 geese and .16 ducks for a total of 1.13 birds per hunter per day.

Geese accounted for 51 percent of the bag with the white-fronted goose making up 38 percent of the total kill. Pintails and mallards accounted for 22 percent and 15 percent of the bag respectively.

The colored hunting sign program initiated in 1962 on the Klamath Basin Refuges was modified this year with the addition of metal signs to replace the paper and wood signs. The size, sign legend, and color scheme remain the same. This replacement will eliminate having to remove the majority of these signs during the off season, maintain and store them. This should result in an annual savings of approximately \$3,000.

Hunter success data for the past five years is shown in the following table.

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Year	Total Hunters (Hunter Days)	Gosse Bag	Duck Bag	Total Bag	Geese/Hunter	Ducks/Hunter	Total Birds/Hunter
1961	7,689	4,767 1/	9,150 ^{1/}	13,917 ¹ /	.62	1.19	1.81
1962	11,586	5,909	6,141	12,050	.51	. 53	1.04
1963	13,822	11,887	11,748	23,635	.86	.85	$1.71^{2/2}$
1964	13,527	10,145	10,281	20,426	.75	76	1.51
1965	15,701	12,404	11,933	24,337	.79	.76	1.55
5-year							
Average	12,465	9,022	9,851	18,873	.71	.82	1.53

WATERFOWL HUNTER-SUCCESS DATA - TULE LAKE REFUGE*

NOTE: Waterfowl figures used include only birds bagged whereas column 9 of NR-1C includes the crippling loss as reported by hunters.

1/ Corrected 1961 figures

2/ Corrected 1963 figures

Species	1965	1964	1963	1962	1961
<u>Geese</u> Canada goose	2	2	1	2	2
Cackling goose	7	- 4	7	3	6
White-fronted goose	38	38	32	42	21
Snow goose	4	5	10	3	5
<u>Ducks</u> Mallard	15	14	11	13	10
Widgeon	2	3	2	5	5
Pintail	22	24	24	24	34
Green-winged Teal	4	2	3	1	2
Shoveler	3	2	7	3	8
Redhead	1	1	0	0	0
Other	2	5	3	4	7

PERCENT SPECIES IN BAG

<u>Pheasants</u>: During the sixteen-day season, November 20 to December 5, an estimated 2,619 hunters bagged approximately 1,755 rooster pheasants for an average of .67 bird per hunter day. The opening weekend received 75 percent of the total hunter use and 83 percent of the total birds bagged this period.

One complaint opening weekend was that the birds were holding too tightly. Some hunters admitted their dogs even caught birds before the birds could leave the ground.

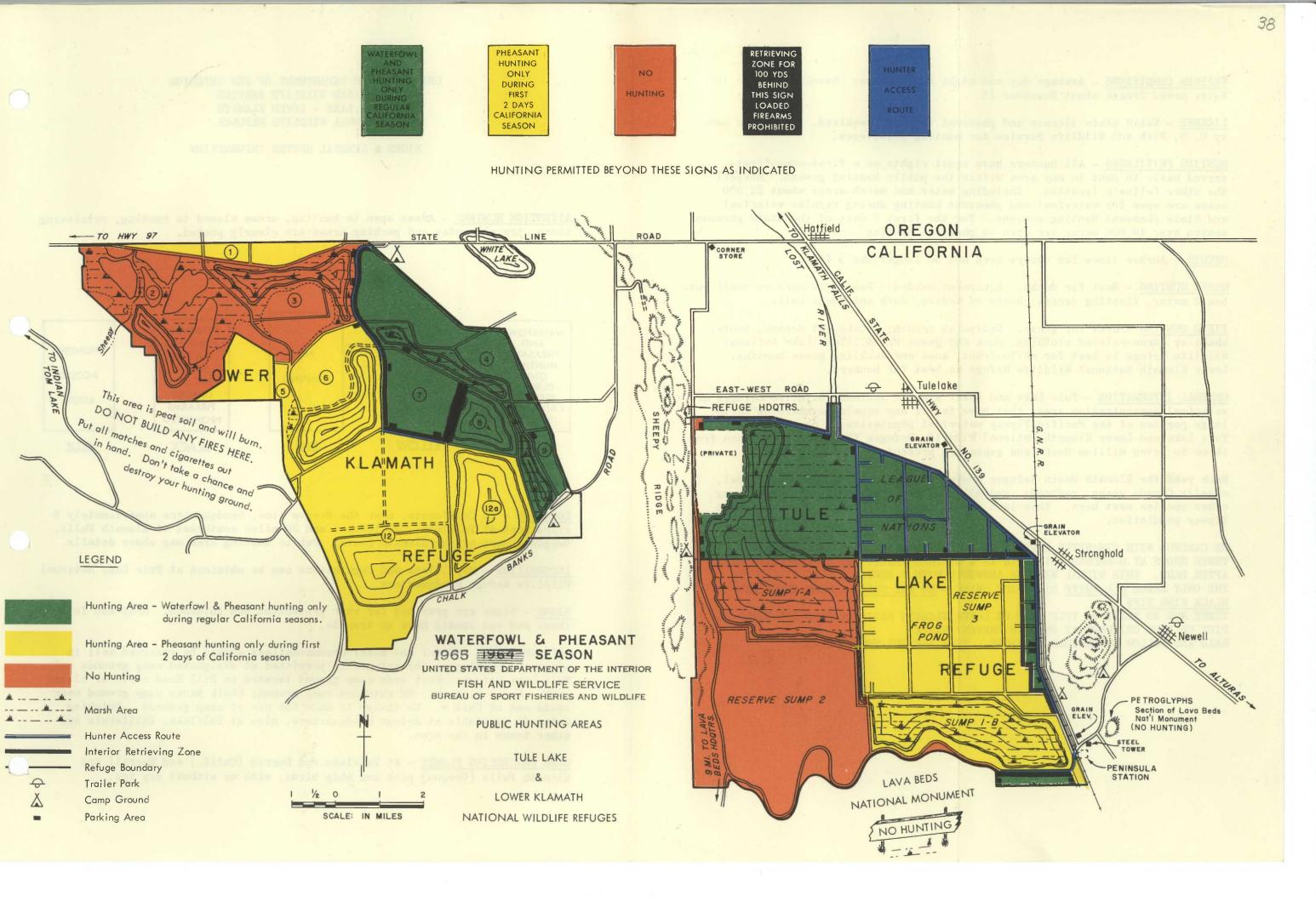
The bag limit was two roosters per hunter per day with a season limit of ten.

Year	No. of Hunters	Estimated Birds Killed	Hunter Success
1961	2,824	1,115	.39
1962	2,034	1,164	. 57
1963	3,446	2,515	.73
1964	2,010	1,590	.79
1965	2,619	1,755	.67
AVERAGE	2,587	1,628	. 63

Hunter success data for the last five years is shown in the following table:

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WEATHER CONDITIONS - Average day and night temperature: November 40° to 10°. Water areas freeze about November 15.

LICENSE - Valid State license and pheasant tags are required. No charge made by U. S. Fish and Wildlife Service for hunting privileges.

HUNTING PRIVILEGES - All hunters have equal rights on a first-come-firstserved basis to hunt in any area within the public hunting ground. Respect the other fellow's location. Including water and marsh areas about 22,000 acres are open for waterfowl and pheasant hunting during regular waterfowl and State pheasant hunting seasons. For the first 2 days of the State pheasant season over 40,000 acres are open to pheasant hunting.

DECOYS - Anchor lines for decoys need not be longerthan 6 feet.

MARSH HUNTING - Best for ducks. Equipment needed: Boat with oars or small outboard motor, floating decoys, boots or waders, duck and goose calls.

FIELD HUNTING - Best for geese. Equipment needed: Stake-out decoys, boots, khaki or straw-colored clothing, duck and goose calls. Tule Lake National Wildlife Refuge is best for white-front, snow and cackling goose hunting. Lower Klamath National Wildlife Refuge is best for honkers.

GENERAL INFORMATION - Tule Lake and Lower Klamath National Wildlife Refuges are waterfowl concentration areas that have few if any equals anywhere on earth. A large portion of the Pacific Flyway waterfowl population is concentrated on Tule Lake and Lower Klamath National Wildlife Refuges through October when from three to seven million ducks and geese are present.

Each year the Klamath Basin Refuges produce approximately 75,000 waterfowl, chiefly Canada geese, redheads, gadwalls, mallards and teal. However, many other species nest here. This is a significant contribution to the Pacific Flyway population.

BE CAREFUL WITH CIGARETTE BUTTS. DO NOT BUILD FIRES ON PEAT SOILS. THREE SHOTS AT 3-SECOND INTERVALS IS A DISTRESS CALL. IT IS EFFECTIVE ONLY AFTER DARK. THIS SIGNAL WILL BE ANSWERED WITH 1 SHOT. THE ONLY LARGE ALL WHITE BIRDS ARE SWANS - DO NOT SHOOT. SNOW GEESE HAVE BLACK WING TIPS. THERE ARE NO BRANT ON TULE LAKE OR LOWER KLAMATH NATIONAL WILDLIFE REFUGES. PICK UP YOUR CRIPPLES AT ONCE TO PREVENT WASTE.

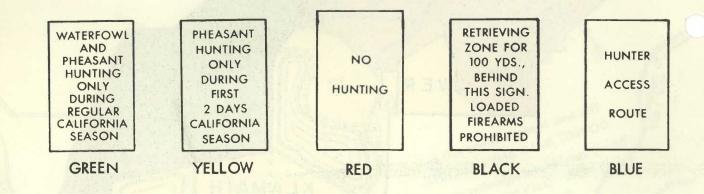
READ AND FOLLOW DIRECTIONS ON SIGNS. THEY ARE FOR YOUR GUIDANCE.

UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE TULE LAKE - LOWER KLAMATH NATIONAL WILDLIFE REFUGES

SIGNS & GENERAL HUNTER INFORMATION

ATTENTION HUNTERS - Areas open to hunting, areas closed to hunting, retrieving zones, travel routes and parking areas are clearly posted.

WATCH FOR THESE SIGNS



LOCATION - In California, near the Oregon line; headquarters approximately 5 miles west of Tulelake, California, and 30 miles southeast of Klamath Falls, Oregon - part of the Klamath Basin. Public hunting area map shows details.

INFORMATION - Maps, laws and regulations can be obtained at Tule Lake National Wildlife Refuge Headquarters.

SIGNS - Signs are provided for your protection and guidance. Read and follow these and you should have no trouble.

ACCOMMODATIONS - Hotel and motel accommodations should be reserved well in advance. Camping on the refuges is permitted at designated camp grounds only. Tule Lake Refuge: West side camp ground located on Hill Road north of closed area. Lower Klamath: NE entrance camp ground; Chalk Banks camp ground near south end of Unit 9. No charge is made for use of camp grounds. Drinking water is available at Refuge Headquarters, also at Tulelake, California and other towns in the area.

GAME PROCESSING PLANTS - At Tulelake and Dorris (Calif.) and Merrill and Klamath Falls (Oregon) pick and ship birds, with or without dry ice.

UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE Bureau of Sport Fisheries and Wildlife

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Tule Lake and Lower Klamath National Wildlife Refuges Headquarters: Tulelake, California

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GENERAL INFORMATION TO HUNTERS

Waterfowl hunting is available on 16,000 acres of water and marsh and agriculture fields on Tule Lake and Lower Klamath National Wildlife Refuges. Areas open to waterfowl hunting are also open for pheasant hunting during the California State pheasant season. Additional refuge areas are open to pheasant hunting <u>only</u> during the first two days of the pheasant season.

The waterfowl hunting season generally starts about mid-October and continues into early January. The pheasant hunting seasons coincide with general opening season dates for the States of Oregon and California. Oregon's pheasant season usually starts about mid-October and continues for approximately a month. California's pheasant season starts about mid-November and runs for about two weeks. Tule Lake and Lower Klamath Refuges are located in California; however, Oregon landowners in the Klamath Basin will oftentimes grant permission to hunt their properties, and public lands north of Lower Klamath Refuge in Oregon are open for both pheasant and waterfowl hunting.

Waterfowl and pheasant hunters are required to have a valid state hunting license. In addition, waterfowl hunters, who have attained sixteen years of ege, must possess a current Migratory Bird Hunting Stamp, and pheasant hunters (California) must have valid pheasant tags. No fee or permit is required to hunt on the Federal Refuge public hunting areas; it is not necessary to check in or out of the hunting areas.

Tuck populations are usually highest the second or third week in October. Goose numbers generally peak in late October and early November. However, the best hunting does not necessarily coincide with periods of highest waterfowl concentrations. Weather, food availability, hunting pressure and the feeding habits of the birds all affect the quality of waterfowl hunting and it is virtually impossible to accurately predict the best time and place to hunt.

Experienced hunters come equipped with decoys, all-weather apparel (especially boots), and frequently a boat. Hunters who get back in the more remote parts of the marsh or field public hunting areas and set up spreads of decoys almost invariably get better quality shooting and score better than do "firing line" hunters.

Pheasant hunting is generally best during the opening weekend.

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Several duck picking establishments are available locally for processing and shipping waterfowl in fresh or frozen condition.

Cold weather and storms are likely to occur after mid-November and hunters should be prepared for unfavorable travel conditions. Freeze-ups may occur any time after mid-November.

Unimproved campgrounds are located near the public hunting areas; however, facilities are limited and use is restricted to the period immediately prior to and during the waterfowl hunting season. Trailers may be parked on the campgrounds.

A commercial boat livery is available on the west side of the Tule Lake marsh.

The Kiwanis Club of Tulelake sponsers a pheasant hunting program on private lands in the Tulelake basin. Several thousand acres are available to the hunter willing to pay a modest fee for this hunting privilege. Further information can be obtained by writing the Tulelake Kiwanis Club or contacting Club members.

Other enterprises such as private hunting lodges and clubs offering waterfowl hunting as well as guide service will be found in the general area.

Some farmers in the area allow hunting with permission. It is the responsibility of the individual hunter to contact land owners before hunting on private property.

Numerous motels and hotels as well as several trailer courts provide a variety of accommodations.

For further information, contact the Tule Lake Refuge headquarters personally or by mail, addressed to: Tule Lake National Wildlife Refuge, Route 1, Box 74, Tulelake, California 96134. For additional information on hotel, motel and trailer court accommodations, you may wish to write the Tulelake Chamber of Commerce, Tulelake, California.

Experienced hunters come equipped with decoys, all-weather apparel (especially boots), and frequently a boat? Hunters who get back in the more remote parts of the marsh or field public hunting areas and set up spreads of decoys almost invariably get better quality shooting and score better than do "firing line" hunters.

Pheasant bunking is generally best during the opening weekend.

UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE

Bureau of Sport Fisheries and Wildlife Tule Lake and Lower Klamath National Wildlife Refuges Headquarters: Tulelake, California

DIGEST OF HUNTING REGULATIONS - 1965 SEASON

<u>PERMITS</u>: All hunters must possess a valid California State hunting license. All hunters 16 years of age or older must possess an unexpired Duck Stamp validated by his signature written across the face of the stamp in ink before hunting migratory waterfowl. No other permit is required.

<u>ACCESS ROADS AND PARKING</u>: With the exception of the first two days of the pheasant hunting season when hunter travel and parking are permitted throughout the areas open to pheasant hunting, hunter travel is restricted to roads posted with <u>Hunter</u> <u>Access Route</u> signs, and the parking or leaving unattended of any vehicle on the refuge area shall be limited to those places posted for that purpose. Cars must be parked at all times so as to keep roads open.

BOAT AND BOAT TRAILERS: The use of airthrust boats is prohibited. Sculling is prohibited. Boats with motors attached when used for hunting must be beached, resting at anchor, or fastened within or tied immediately alongside of any type of fixed hunting blind. Boat trailers or vehicles may not be parked to obstruct boat launching sites. Shooting pheasants from boats prohibited.

 \underline{DOGS} : Not to exceed two dogs per hunter may be used to hunt waterfowl, coots, and pheasants.

<u>RETRIEVING ZONES</u>: The 100-yard wide strip within and contiguous to the exterior boundaries of the Tule Lake and Lower Klamath Refuges is designated a retrieving zone. Posted retrieving zones 100 yards in width are established as follows:

- <u>Tule Lake Refuge</u>: (a) Along the south side of League of Nations Unit from Sump IA to Frog Pond hunting unit, the west and south sides of Frog Pond hunting unit, and the east side of refuge buffer unit D-6; (b) Along the north side of the Panhandle Buffer Strip including the Panhandle Sump dike.
- Lower Klamath Refuge: Along the west side of Unit 4, the west, south and east sides of Unit 7, and the west side of Unit 8. This includes the dike roads and berms.

Refer to Hunting Area Map for details.

Possession of firearms in the retrieving zones or closed portions of the refuges is prohibited, except that unloaded firearms may be taken through the zone or closed area when necessary to reach or leave the hunting area.

<u>ACCESS TO THE HUNTING AREAS</u>: Hunters may not enter the public hunting areas earlier than $l\frac{1}{2}$ hours before start of shooting time and must be off the areas one hour after the close of shooting time. Entry to the public hunting area is contingent upon the right of Bureau of Sport Fisheries and Wildlife personnel engaged in enforcement work or in collection of hunter kill data to stop and search the vehicle in which enterer is travelling.

<u>DECOYS AND OTHER PERSONAL PROPERTY</u>: Leaving boats, decoys or other hunting equipment in other than designated areas (boat launching sites) is prohibited. Boats, decoys or other equipment so left one hour after close of shooting time will be subject to impoundment and disposal by sale. WANTON WASTE OF MIGRATORY GAME BIRDS: Section 10:14, Code of Federal Regulations provides that no person shall kill or cripple any migratory game bird pursuant to this part without making a reasonable effort to'retrieve the bird and include it in his daily bag limit.

HUNTING BLINDS: Any person may construct and use a hunting blind in a natural growth of tules or cover but construction of a blind does not establish priority to the blind or hunting area. Entry for the purpose of constructing a blind or surveying hunting conditions prior to the opening day of the waterfowl season shall be by special permit only. Blinds not removed by January 15 become Government property and subject to disposal. Portable blinds or blinds made of vegetative material may be used for hunting. The digging of pits or hunting therefrom is prohibited. Blinds in designated pass shocting areas may be constructed only at locations staked and appropriately posted by the officer in charge. Hunting in areas so staked and posted is prohibited except at staked blind sites.

WATERFOWL SEASON: Straight season from October 9, 1965 - January 6, 1966. BAG AND POSSESSION LIMITS: (No open season for whistling swan and grebes).

Ducks: 4 birds per day, 8 birds in possession. The daily bag limit may not include more than 2 wood ducks, 2 canvasbacks; and, in the alternative, 3 mallards or 3 pintails or 3 in the aggregate of both species. The possession limit may not include more than 2 wood ducks, 2 canvasbacks; and, in the alternative, 6 mallards or 6 pintails or 6 in the aggregate of both species.

<u>Geese:</u> 3 geese per day and 6 in possession except that the daily bag limit may be increased to 6 provided 3 or more are white geese. The bag and possession limit may contain not more than 1 Ross' goose.

Coots: 25 per day or in possession.

Mergansers: American, red-breasted, and hooded. The daily bag limit is 5 and the possession limit is 10, of which not more than 1 daily and 2 in possession may be hooded mergansers.

SHOOTING HOURS: (Tule Lake - Klamath Basin, California) $\frac{1}{2}$ hour before sunrise to sunset, including opening day)

Date	Start	Stop	Date	Start	Stop		Date	Start	Stop	real
			p.m. Nov. 2	6:09	a.m. 4:59	p.m.	Dec. 7	6:50 a.m.	4:35	p.m.
··· ··· 10	6:42 "	6:34	"	6:14		14 -	1 11	6:54 "	4:34	11
	·6:43 "	6;33	" - gu - 3' - 6' " - gu - 3' - 6' " - 9	6:18	: 1 4:51	11	14	6:57 "	4:35	11
: 3w 12'	0.11	0.01	10	6:22	" 4:47	dub o	18	7:00 "	4:36	Refmr
16	6:48 "	6:24		6:27		11	21	7:01 "	4:37	**
			trung pes 20.						4:39	n so a
- 23	6:55	6:13		6:36	4:40	nobi	28	7:04 "	4:41	Hoad
24	6:56 "	6:12		6:40	4:37	91H 10	Jan. 1	7:04 "	4:44	11 9 1 8
26	7:01 "		" 30				. 4 .	7:04 "	4:48	H
30	7:06 "	6:03	" Dec. 4	6:47	" " 4:35	H	6.	7:04	4:49	П
	6:07 ",			ut yak	100de 10.3	rasia	belore	a.non 21 u		111209

*Daylight saving time changes to standard time.

PHEASANT SEASON: Regular California State season: November 20 - December 5, 1965. (For refuge areas open to hunting during regular State season and special two-day season see refuge hunting map)

SHOOTING HOURS: 8 a.m. - 4:30 p.m.

LIMIT: Two male pheasants per day, ten male pheasants per season. Fill out, punch and attach pheasant tag IMMEDIATELY after taking a pheasant.

decoys or other equipment so left one hour after close of shooting time will

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UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE Bureau of Sport Fisheries and Wildlife Tule Lake and Lower Klamath National Wildlife Refuges Headquarters: Tulelake, California

SUPPLEMENTAL HUNTER INFORMATION HANDOUT - 1965

The following information has been prepared to explain changes which have been made in the management of the refuges and the public hunting areas and to answer the more common questions posed by hunters.

(1) A number of changes have been made in the management of Lower Klamath Refuge which will affect hunting.

Two Unit "1" fields are flooded for quackgrass control and will remain flooded throughout most of the hunting season.

The south part of Unit "7" was sown to Gaines winter wheat in late August and early September. This will provide fall and spring browse for geese and should be very helpful next spring in controlling depredations to private pasture and hay land in the basin. The green browse should attract geese this fall and improve goose hunting. The north part of Unit "7" is in standing grain.

Unit "6" and Unit "8", which have a history of past botulism losses, were drained in July to eliminate botulism and to stimulate the growth of emergent marsh. They are now reflooded for the hunting season since the botulism hazard is past. The volunteer vegetative growth and native weed seeds should make these units very attractive to waterfowl as they are reflooded.

The last of the 1964 Christmas floodwaters were recently removed from the north part of Unit "6" and Unit "12". Engineering surveys must be conducted and repairs made to interior dikes before the units can be functional once again.

Public Law 88-567 (Kuchel Bill) dedicated additional public lands in Klamath Lasin to wildlife conservation. These lands will be open to hunting during the 1965-66 season and it is hoped to have the more important areas posted with green colored "Public Hunting Area" signs. They will include the following: (a) White Lake - 1,189 acres lying astride the Oregon-California border. Most of this area is flooded and should provide some excellent shooting; (b) Sheepy East - cropland lying east of Units "4" and "9"; (c) Sheepy West - grassland lying south of Unit "2"; (d) Isolated tracts upon and near Sheepy Ridge.

For additional information contact Refuge Headquarters.

(2) Public hunting maps of Tule Lake and Lower Klamath Refuges and the signs on these two areas have been color-coded. Areas open to waterfowl and pheasant hunting during regular seasons are shown on the map in green; areas open to pheasant hunting only for the first two days of the California State pheasant season are shown in yellow. Areas closed to all hunting are indicated on the map in red. Hunter access routes are designated in blue on the map and interior retrieving zones, in which unters may enter without loaded firearms to pick up dead and crippled waterfowl knocked down, in black. Colored signs with which the refuges are posted conform to UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE Bureau of Sport Fisheries and Wildlife Tule Lake and Lower Klamath National Wildlife Hef Headquarters, Tulelake, Galifornia

SUPPLEMENTAL HUNTER INFORMATION HANDOUT - 1965

colors used on the Tule Lake - Lower Klamath hunting area map. These signs are prominently displayed at all entrances to the Tule Lake and Lower Klamath public hunting areas. Red "No Hunting" signs are used only in problem areas such as along the open-closed hunting line within the refuge where "blue goose" boundary signs are not applicable.

(3) During the waterfowl and pheasant hunting seasons, roads within the Tule Lake and Lower Klamath Refuges public hunting areas open to hunters and the visiting public are posted with blue, Hunter Access Route, signs. All other refuge roads are closed and are so posted. Roads which are designated closed with signs are closed in all instances, whether or not the roadway is blocked with a cable.

(4) One of the questions frequently asked by hunters is why the Fish and Wildlife Service flys over the basin refuges shortly before and during the season. Some hunters have the impression that these flights are to haze birds back into the closed portion of the refuges where they are safe from the hunter. The purpose of aerial flights immediately before and during the hunting season is to obtain accurate census figures of the waterfowl population. This information is in great demand by newspapers, radio and TV, who wish to acquaint the hunting public with the waterfowl population. These flights have no affect on waterfowl hunting.

(5) A common question posed by hunters is why the refuge staff insists on feeding the waterfowl; the implication being we are feeding the birds within the closed area so that they will not be killed. In the fall of each year we endeavor to trap and band a sample of ducks and geese to obtain information on waterfowl mortality and migration routes. It is necessary to put out two or three bushels of grain each day to attract birds to the trap. It is obvious to anyone seriously considering the matter that two or three bushels of grain scattered around a trap are not going to affect the refuge waterfowl population which may number three million and which consume in excess of three quarters of a million pounds of food daily.

flooded and should provide some excellent shooting; (b) Sheepy East - crepland lying

east of Units "4" and "9": (c) Sheepy West - grassland lying south of Unit "2"; (d) Isolated tracts upon and near Sheepy Ridge.

For additional information contact Refuge Headquarters.

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E. Violations*

One hundred thirty three cases were made by refuge personnel on or near the Klamath Basin National Wildlife Refuges. Thirty one were violation of a refuge regulation that prohibits entering the hunting area prior to ninety minutes before legal shooting time. The U. S. Attorney in Sacramento declined to prosecute these particular cases and since State Courts have no jurisdiction over refuge regulations, we are left holding the proverbial "bag". An effort will be made to apply pressure on Federal Courts to accept these so called "trivial" cases through the Department of Justice in Washington. In addition, there is evidence that the California Game Commission might consider adopting regulations that would give the State jurisdiction over some, if not all, refuge regulations.

Nothing more demoralizing to mar that not to be backed up when "chips an down"

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As in the past, the majority of cases involved late shooting and hunting in closed areas. Sixteen hunters were cited for overlimits of mallards and/or pintails. May other complaints were voiced about the wording "...three mallards or three pintails or three in the aggregate of both kinds". Most hunters indicated that different wording would have made the limit more explicit.

This was the first hunting season in many years that no hunter was cited for shooting a swan.

Robert L. Barber, Assistant Refuge Manager, Benton Lake National Wildlife Refuge, Montana and John Kiger, Assistant Refuge Manager, Desert Game Range, Nevada assisted with enforcement and bag check work for the first ten weeks of the hunting season. In addition to refuge personnel, Game Management Agents from Oregon and California and the local California State Game Warden cooperated in enforcement activities. Lava Beds National Monument personnel patrolled along the common refuge boundary line during pheasant season.

The following list contains cases that have cleared California Justice Courts in Tulelake, Newell, and Dorris, and the U. S. Commissioners Courts in Klamath Falls, Oregon, and Alturas and Sacramento, California. Section I lists the 1964 cases not included in the 1964 Narrative Report; Section II contains the 1965 cases cleared to date.

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Section I

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Justice Court - Dorris

Date	Name of Violator	<u>Violation</u>	<u>Officer</u>	Fine
10/25	Roger L. Ellis	Hunt w/out license	Davies	Dismissed
11/7	Paul D. Smith	Late shooting -14 min.	Pierce	cannot be located
11/20	Lewis C. Foster	Late shooting-12 min.	Davies	\$25.00
12/13	Willman C. Stetton	Late shooting-22 min.	Pierce	20.00
12/19	John L. Miller	Hunt w/out license	99	25.00

Justice Court - Tulelake

12/19	Charles W.	Spierling	Late	shooting-16 min.	Pierce	16.00

Justice Court - Newell

11/21	George W. Veale	Fail to punch ph. tag	McLaury	25.00
11/28	Bill Miller	Loaded gun in closed area	Inman	50.00
11/28	Francis J. Vistocco	17 17 17 17	11	50.00
12/14	Jack 0. Potter	Overlimit of geese	Pierce	50.00

Justice Court - Klamath Falls

11/7	John C. Lindmeir	Hunt in closed area w/out license or duck stamp	Sekora	25.00 15. sus.
11	Dale Musgrove	и и и и	n	Juvenile- license
11	Keith E. Jessup	Hunt in closed area	Sekora	sus. 30 das. 25.00 15. sus.
11	Lloyd Mergal) Albert J. Stone)	Shoot protected species (swan-Joint possession)	Inman	150./100.sus 100./65. sus
10/20	John E. Tinker	Late shooting-23 min.	Pierce	Juvenile- license sus.

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30 days.

Section II

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Justice Court - Tulelake

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Date	Name of Violator	<u>Violation</u>	<u>Officer</u>	Fine
10/9	Albert G. Cooper	Overlimit/mallard and pintails	Davies	\$25.00
"	Kirk A. Brauning	Exceeded aggregate daily limit-mallard and pintail	11	25.00 10.sus
"	Neil E. Buller	"	"	25.00 10. sus
"	Vlademir Kapsoff	Exceeded aggregate daily limit - pintails	Inman	25,00
н	Fedor Kapsoff	Exceeded aggregate daily limit-mallard/pintail	11	25.00
"	Lee H. Whitson, Jr.	"	"	25.00
"	Claude L. Gray, Jr.	"	н	25.00
	Lee H. Whitson, Sr.	"	"	Case dismissed
11	Bruce H. Whitson	п	"	25.00
"	Harlan R. Whitson	Exceeded aggregate daily limit - mallards	7 11	25.00
11	Ben E. Chantry	Early shooting-11 min.	Watson	27.00
.11	Albert G. Epes	" " ll min.	**	27.00
11	C. Neil Vann	" " 12 min.	11	29.00
10/10	George O. Walgamott	Exceeded aggregate daily limit - Pintails	y Inman	25,00
10/11	David B. Vaccaro	Exceeded possession limi of mallard and pintails	it Barber	30.00
10/16	Douglas Winchester	Late shooting-12 min.	Davies	24.00
10/17	Robert R. Wheeler, Jr.	Late shooting-18 min.	Barber	J u venile- no action
"	Jack W. Higgins	" " 18 min.		н

Justice Court - Tulelake - Cont.

Date	Name of Violator	Violation	<u>Officer</u>	Fine
10/17	Gary A. Wheeler	Late shooting-18 min.	Barber	Juvenile-
	Dennis W. May	Late shooting-18 min.		no action "
10/19	Kenneth Seibeck	Hunt in closed area	Davies	25.00
11	Raymond Hazelhiehn	Late shooting-13 min.	Barber	Juvenile- no action
10/23	James C. Raulston	Hunt w/out license	Nuess	25.00
11/1	J. Clayton Gary	Hunt in closed area	Christensen	12.50 sus. 25.00
11/4	Michael V. Rinaberger	Late shooting-13 min.	Barber	Juvenile- no action
11/6	Lennard W. Palmiter	Possess dressed bird	11	25.00
11	Kenneth R. Moore			25.00
11	Frank J. Martinez		"	25.00
11/7	John D. Ferguson	Late shooting-20 min.	Inman	25.00
**	Robert P. Gibson	" " 20 min.	"	25.00
11	James J. Zelny	" " 20 min.		25.00
11/12	Terry W. Alcorn	Late shooting-ll min.	Barber	Juvenile- no action
11/14	George P. Barber	Overlimit of dark geese	Davies	25.00
11/25	William P. Olkjer	Possess dressed bird	Nuess	10.00
. II	Bobby P. Milligan	н н н	"	10.00
12/5	Randy R. Messenger	Hunt in closed area	Inman	10.00
11	John Randall Messenger	и и и		10.00
11	Harold C. Jensen, Jr	11 11 11	п	10.00
11	Harold C. Jensen, Sr.	31 31 11		10,00
11/4	Larry L. Thomas	Late shooting-13 min.	Barber	26.00 fine sus.

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Justice Court - Newell

Date-	Name of Violator	Violation	<u>Officer</u>	Fine
10/11	Louie J. Lomonaco	Late shooting-12 min.	Barber	25.00
11	Manley G. Suess	" " 10 min.	"	25.00
**	Paul J. Benson	" " 10 min.	**	25.00
11/19	Lloyd E. Parker	Hunt in closed area	Davies	25.00 10. sus.
11/18	Frank C. Henning	п п п	Kiger	25.00

Justice Court - Dorris

10/21	Lloyd E. Cantrall	Hunt in closed area	Inman	25.00 10. sus
11	Ernest R. Harvey		"	25.00 10. sus
10/22	Gerald E. Hanks	Shoot & kill non-game protected bird-Gull	Inman	25.00
10/24	Fred L. Holland	Hunt in closed area	Kiger	25.00
11	Mildred Holland	н н н	и ,	25.00
10/28	Lester Jerome	и и и	"	25.00
"	James F. Gallagher		"	25.00 15. sus.
10/29	Gilbert W. Gendreau	Late shooting-15 min.	Davies	15.00
Ħ	Edwin Earl Keith	" " 15 min.	"	15.00
Ħ	Terry L. Frazier	Hunt in closed area	Sekora	25.00
Ħ	Charles R. Walton		"	25.00
10/30	Chester H. Spiering	Dressed bird in field	Barber	15.00
10/31	Floyd D. Breshears	Late shooting-10 min.	Sekora	Juvenile- no action
11/6	Gary L. Arntz	Hunt in closed area	Sekora	25.00
11	Wayne W. Singley	и и и	н	fine sus. "
11	Garvan B. Bowman		"	"

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Justice Court - Dorris - Cont.

Date	Name of Violator	Viol	ati	o n	Officer	Fine
11/6	Harold Hudson	Hunt in	closed	l area	Sekora	25.00
11/7	Charles G. Ferguson	11	tt	"	Nuess	15.00
IF	Peggy Ann Ferguson	н	11	"	11	15.00
11	Richard J. Holly	"	11	"	11	25,00
IL	Arthur A. Gibbons	н	11	n	Davies	25.00
11	Warren F. Moore	"	11	11	"	Juvenile- no action
11	David N. Gibbons	н		и	н	"
11/8	Howard K. Welch	Early sl	hooting	g-9 min.	Davies	10.00
11/11	John K. Harroun	Hunt in	closed	l area	Kiger	Juvenile no action
**	Calvin S. Lees	11	"	"	11	15.00
11/20	Richard M. Garcia	11	"		Nuess	10.00
88	Ronald W. Miller	Early pl ing - 31		: shoot-	Davies	20.00
11	David L. Hall	Early pl ing - 3		shoot-	"	20.00
11/22	Earl L. Newell	Hunt in	closed	l area	Annear	25.00
11	James W. Craig	17	11	н	"	25.00
11	Ronald Butts	17	. 11	**	"	Juvenile
11	Mildred E. Newell	"	11	**	"	No action 25.00
11/23	Russell Gatzke	Late she	ooting-	12 min.	Nuess	15.00
11	Victor Z. Hanson	11	11	15 min.	Davies	15.00
11/27	David A. Marshall	**	н	21 min.	Inman	20.00
12/4	John C. McBeth	Daily or	verlimi	t-ducks	Barber	10.00

Justice Court - Dorris - Cont.

Date	Name of Violator	Violation	<u>Office</u> r	Fine
12/3	Martin Martinez	Exceeded aggregate daily limit - Mallard/pintail	Barber	10.00
"	Myrna W. Weber	Exceeded aggregate daily limit - pintail	"	25.00
11	Donald C. Weber	н	"	25.00
12/30	Robert H. Cobun	Late shooting-17 min.	Inman	15.00

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District Court - Klamath Falls

11/5	Eddie L. Now	Late shooting-19 min.	Sekora	30.00
11/7	Geryld E. Ellis	" " 17 "	11	30.00
11/8	Merlin L. Bade	Shooting from moving vehicle	Anne ar	30.00

F. <u>Safety</u>*

Monthly staff and station SAFETY Committee mmetings were held as scheduled.

Four accidents occurred during the reporting period:

1. January 15: Khlar Heaton, Heavy Duty Mechanic, picked up an acetylene welding tank from the oil dock and carried it, over icy and snowy ground, into the shop. He experienced no pain at the time, but did feel slight back pains over that weekend. He returned to work Monday, but his back became more painful as the day progressed. Tuesday his back was X-rayed, revealing a twisted joint, which resulted in a pinched nerve. His subsequent recovery accounted for five lost-time days. The Station SAFETY Committee recommended objects of such size and weight should be handled by two men. 49

- 2. <u>April 15</u>: Lowell Green, Maintenanceman II, in the process of installing a headgate, was one of two men, working below, receiving rocks rolled from two men working above. A rock released by the left man above rolled diagonally, rather than straight down the bank, striking the man on the right (Mr. Green). Mr. Green normally received rock <u>only</u> from the man on the right and did not anticipate receiving rock from the man at the left. The rock struck his right index finger, smashing it against another rock. Mr. Green went immediately to the local doctor and was advised he had fractured the tip of his finger. He was treated and returned to work an hour later. It was recommended by the Station SAFETY Committee that when rockplacing work is being undertaken, special heavy-duty leather rock-handling gloves should be utilized.
- 3. <u>April 28</u>: Palmer Sekora, Refuge Manager Trainee, was lifting a sign into position for hanging at the Klamath Forest Refuge. The sign weighed approximately 150 pounds and Mr. Sekora was alone, so he was making use of a handyman jack to elevate the sign. The jack slipped, causing the sign to fall to one side, thereby pushing the top of the jack toward Mr. Sekora. The upper end of the jack struck him, resulting in a cut on his left temple and cuts and bruises on his nose.

It was concluded by the SAFETY Committee that too much was trying to be accomplished with too little. They recommended that an additional person or two should be used when hanging signs. It was also recommended that the trip to the Klamath Forest Refuge (100 miles from headquarters) should be made by two people. This accident might have resulted in a severe

Not recessory, be expect our people to use good judgement & exercise reasonable can & contrar R

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head injury necessitating immediate first aid or further medical care. Lack of communication between this refuge and headquarters makes working alone a hazardous situation. 50

4. December 21: Palmer Sekora, Refuge Manager Trainee, was driving around a curve on an icy stretch of road. Although travelling only 30 MPH, the vehicle went into a sideward skid. The left wheels dropped into a ditch, which was suf ficiently deep to cause the vehicle to roll over onto its top. Mr. Sekora was uninjured and easily climbed out of the truck. The SAFETY Committee concluded that an accident of this type is next to impossible to prevent. They did recommend that this accident be discussed at the next staff SAFETY meeting as a reminder to all employees of the hazards of winter driving.

Quarterly fire drills, fire station checks, and station SAFETY checks were made as scheduled. Physical checks of the fire extinguishers were made in June and November.

The following SAFETY accomplishments were made during the year:

- 1. Neosporin, an antibiotic ointment, was added to each of the first aid kits.
- 2. Two "Readisplints", the inflatable plastic splints, were purchased; and their use was demonstrated at a staff SAFETY meeting.
- 3. Two gallons of liquid plastic foam was injected in compartments below the seats of the two row boats and the pram.
- 4. The annual pre-winter quarters furnace inspection was performed and the heating units reconditioned.
- 5. The headquarter's water supply was chlorinated after samples had been taken showing the quality was below minimum health standards.
- 6. A new sawdust collecting system was installed at the Sign Shop to eliminate a severe health and fire hazard.
- 7. A flight helmet was purchased for refuge Biologist O'Neill to use while on census flights and other flying activities.
- 8. U. S. Public Health authorities destroyed a supply of parathion which was no longer being used.
- 9. A Jacobson braking system was installed on the engine of the Regional Transport.

At the end of the year the refuge SAFETY record was 349 days. The previous SAFETY record was 246 days.

VII OTHER ITEMS

A. Items of Interest*

Lower Klamath was dedicated and registered July 13 as a National Historic Landmark. Lower Klamath was the first large area of public land to be reserved as a Federal wildlife refuge. Teddy Roosevelt issued the executed Order in 1908.

Dog shoots man - sad, but true. Two companions hunting from a boat on Tule Lake sent their dog to retrieve a crippled goose. Before helping the dog back aboard the boat, one hunter unloaded his gun, one did not. Just after getting the dog back aboard the loaded gun discharged, nearly blowing an arm off one hunter - the one who had unloaded his gun. It was later concluded that the dog had triggered the gun which had been leaned against the middle boat seat, safety-off. The wounded man was Robert Kater.

Roland Shults received a \$200 incentive award for adoption of his suggestion of a quick assembly road barrier sign. Bob is in charge of the Regional Sign Shop which is located at Tule Lake Refuge. Bob's design was so good that Acting Regional Director Harry Goodwin says the use of Shult's design is mandatory if you have occasion to fabricate a road barricade sign.

Harold Hardesty, Regional Transport Operator was honored and awarded a Safe Driving Certificate. Harold completed three years and 166,000 miles of accident-free driving.

Authorization was granted for the second successive year to the U.S. Forest Service, Winema National Forest, Klamath Ranger District protection crew to occupy and use the Upper Klamath National Wildlife Refuge cabin and facilities from June 15 to September 30.

Twenty eight depredation herding permits were issued during 1965.

Robert Watson transferred from Stillwater Refuge with a promotion to replace Mr. Russell. Mr. Watson is presently attending the Tenth Departmental Development Program in Washington, D. C. and Assistant Manager William Nuess is Acting Refuge Manager. *The Regional Transport Truck made 33 trips, travelled 51,652 miles and hauled the following during 1965: 52

Trip No.	Load	Orig	in		Destin	ation	
227	Sheep's Foot Roller 2,4-D Amine Lowbed Trailer	Sacr		Refuge Refuge d	Sacram Tule L "		-
228	Tires Sign Frames Truck Parts Truck Crane Burlap Sacks I-Beams	n N Colu Will	n n mbia R	Refuge	McNary Willam Columb Willam Tule L Malheu	ette 1 ia Re: ette 1 ake R	Refuge fuge Refuge efuge
229	TD-18 Tractor Oil Meter			Refuge Refuge	Tule L Sacram		-
230	D-7 Tractor	n	n	Ħ	Malheu	r Job	Corps
231	LeTourneau Scraper	11	n	Ħ	11	11	n
232	D-7 Tractor	Ħ	11	11	19	Ħ	n
233	Road Grader Steel Piling		Lewis ry Ref		Eugene Sacram		
234	Cargo Truck -2 Air Compressor Typewriter D-7 Tractor	n n	11 11	Refuge n n b Corps	Malheu " " Tule L	11 11	11 12
235	Stake Truck Truck Crane Misc. Equipment	Fort "	Lewis n n		Malheu " "	r Job n 11	Corps n n
236	Cargo Truck Pickup -2 Ambulance Lowbed Trailer Fork Lift Lowbed Trailer	11 12 11	Lake n n n nbia R	Refuge n n u efuge	n n Columb: Malheu: n		-
	Pickup Fire Pump Trailer Office Equipment Tools & Miscellaneous	11 11 11		77 77 77	17 17 17	17 17 17 17	11 17 11 11
237	Crane Dump Truck Lowboy Trailer		Lewis nbia R		Malheu: "	r Job n n	Corps n n

Trip No.	Load	Origin	Destination
238	D-7 Tractor	Tule Lake Refuge	Malheur Job Corps
	LeTourneau Scraper	Malheur Job Corps	Tule Lake Refuge
239	Cargo Truck -2 Pickup	Tule Lake Refuge	Sheldon-Hart Mt. Malheur Job Corps
240	Grain =2 Tons Steel Shelving Road Grader	n n n Hawthorne, Nev.	Stillwater Mgt. Area """" Malheur Job Corps
241	Pump	Kern-Pixley	Tule Lake Refuge
	Bookcase Sections	Sacramento Refuge	n n n
24 2	Steel Shelving	Tule Lake Refuge	C. M. Russell Range
	Steel Piling	McNary Refuge	n n n n
	D-8 Tractor	Bremerton, Wash.	Malheur Refuge
243	House Trailers -4	Camp Pendleton	Sheldon-Hart Mt.
	Dragline Bucket	Sharpe Depot	Tule Lake Refuge
244	Road Grader	Hawthorne, Nev.	Malheur Job Corps
245	Truck-Tractor	China Lake, Calif.	Stillwater Mgt. Area
	Generator -2	Stockton, Calif.	Tule Lake Refuge
	Forklift	McClellan AFB	Stillwater Mgt. Area
246	Rock Crusher	W. Glacier, Mont.	Columbia Refuge
247	Barley -460 Bu.	Sacramento Refuge	Salton Sea Refuge
	Road-rooter	Port Hueneme	Willamette Refuge
	Air Compressor	Kern-Pixley Refuge	Malheur Job Corps
	Forklift Truck	H H H H	n n n n
248	TD-18 Tractor/Dozer	Sacramento Refuge	Kootenai Refuge
249	Mooring Buoys -3	Hadlock, Wash.	Tule Lake Refuge
250	Mooring Buoy	Tule Lake Refuge	Sacramento Refuge
	Barley -400 Bu.	Sacramento Refuge	Turnbull Refuge
	Tanks -2	Ross Sub-Station	Tule Lake Refuge
251	Tractor -2	Desert Game Range	Malheur Job Corps
	Tires	n n n	Sheldon-Hart Mt.
252	Truck-Tractor	National City, Calif.	Tule Lake Refuge
253	Signs & Frames	Tule Lake Refuge	Willamette Refuge
	Dragline Bucket	n n n	Malheur Refuge
	Dragline Bucket	n n n	Malheur Job Corps

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Origin Destination Trip No. Load Fort Lewis 254 Garbage Truck Tule Lake Refuge Ħ Ħ 255 Crane-Shovel Fort Ord 11 11 11 256 Ruby Lake Refuge Jeep 11 11 11 11 11 11 Pickup Ħ 11 n 11 11 11 Dump Truck 257 Sacramento Refuge Salton Sea Refuge Dragline Dragline Boom Salton Sea Refuge Sacramento Refuge Tule Lake Refuge Dump Truck Salton Sea Refuge 11 11 11 Tractor Parts 11 11 11 11 11 = 11 11 11 Barbed Wire Tule Lake Refuge Stillwater Mgt. Area 258 Trailer 259 Scraper Sacramento Refuge Willamette Refuge Dragline Salton Sea Refuge Sacramento Refuge

*Regional Sign Shop Operations - The shop constructed and distributed 134 recognition and information signs to various stations in Region I. Pre-hunting season posting of Klamath Basin Refuges with hunting-traffic control and area boundary signs was accomplished, as well as distribution of approximately 5,000 area-boundary signs throughout the Region.

A summary of the 134 signs constructed and distributed below; "single" or "double" under type, designates whether both sign faces were finished.

No.	Туре		Size (ft.)	Framed & Supported	Destina	tion
9	Info.	-single	2 x 5	no	1/25	Sacramento Refuge
3	Recog.	-single	8 x 8	no	3/30	Bison Range
7	Recog.	-double	5 x 8	yes	3/30	Bison Range
2	Bald Ea	gle -sgl	. 4 x 6	no	4/13	(M&E) Tillamook
2	Info.	-single	4 x 6	no	4/27	Klamath Forest Refuge
37	Info.	-double	lx2	no	7/10 Sh	eldon-Hart Mountain
5	Recog.	-single	4 x 7	yes	7/10	Sheldon-Hart Mountain
4	Info.	-single	2 x 2	no	Aug.	Modoc Refuge

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No.	Туре		Size (ft.)		amed & pported	De	estination
1	Info.	-single	6 x 10	35	yes	9/3	Willapa Refuge
2	Recog.	-double	5 x 8		yes	9/10	Minidoka Refuge
41	Info.	-single	1 x 2		yes	9/10	Minidoka Refuge
5	Recog.	-double	5 x 8		yes	10/5	Willamette Refuge
3	Recog.	-double	5 x 8		yes	10/29	Kootenai Refuge
2	Info.	-double	1 x 2		yes	10/29	Kootenai Refuge
2	Info.	-single	lx7		no	10/29	(P&RC) Idaho
7	Recog.	-single	5 x 6		yes	12/8	Hawaii Island Refuge
2	Info.	-single	1 x 4		yes	12/14	Tule Lake Refuge

*Shop Foreman, Bud Chapman; Dragline Operator, Virgil Cobb; Heavy Duty Mechanics Earl Irvine and Khlar Heaton; and Regional Transport Operator, Harold Hardesty attended Caterpillar's school of instruction on new types of engines and hydraulic systems. This type of instruction contributes much to the interest, efficiency and qualifications of participating personnel. Messrs. Chapman, Irvine and Heaton also attended four other schools in Klamath Falls, Oregon: Welding Techniques, Equipment Painting, Automotive Brake Systems, and Transistorized Ignition Systems. Most of the classes were "night schools", and the participating personnel are complimented for their interest and initiative shown by their attendance.

*Bob Abney was detailed as Regional Job Corps Officer during the first half of the year for initial launching of the Regional Job Corps program. The Bureau's first Job Corps Conservation Center was built and activated at Malheur, and proposals were submitted for several other centers in the Region during the February-August assignment.

*Del Pierce was promoted and transferred to Malheur as Assistant Refuge Manager. Palmer Sekora was stepped up to succeed Del as manager of Klamath Forest Refuge.

*Pete Davies was promoted and transferred to Maintenanceman Foreman II at Sutter Refuge in the Sacramento group of refuges.

*The latest scoop - Administrative Assistant Jim Mac Farlane has just returned from temporary detail at the Malheur Job Corps Conservation Center. Jim has expressed a keen interest in Job Corps work since inception of the program, and was detailed to assist with the administrative work load at the center. Jim has submitted his application

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for the vacant position of Administrative Officer at the Malheur Center. We feel that Jim's selection would be a credit to all concerned, and in keeping with the fine aims of the promotion plan,

*Tulelake Irrigation Manager Ed Lance will resign effective February 18, 1966 to accept a position with an engineering firm in Redding (C. Hill). Fred Fahner, Lance's assistant for the past two years has accepted the manager position.

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Aerial view of Christmas flood waters which almost topped north levee of Southwest Sump.

3/65 E. J. O'Ned 11

Same area as above viewed from south showing inundation of Southwest Sump after levee was cut at southwest edge of Sump 1-B to relieve pressure.

3/65 E. J. O'Ne111

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Aerial view of Christmas flood waters which almost topped north levee of Southwest Sump.

3/65 E. J. O'Neill

Same area as above viewed from south showing inundation of Southwest Sump after levee was cut at southwest edge of Sump 1-B to relieve pressure.

3/65 E. J. O'Neill

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One-half foot rain water fluctuation in June again inundated considerable habitat during critical duck nesting period. 59

(Photo from Lost River Bridge) 6/20/65 E.J. O'Neill

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Same area as above, almost back to normal, 10 days later.

6/30/65 E.J. 0'Neill

One-half foot rain water fluctuation in June again inundated considerable habitat during critical duck nesting period.

(Photo from Lost River Bridge) 6/20/65 E.J. O'Neill

Same area as above, almost back to normal, 10 days later.

6/30/65 E.J. O'Neill



Coot feeding on flesh of American Widgeon during freeze-up and winter stress period.

1/65 E. J. O'Netll

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Removal of dense growth of smooth brome grass along panhandle dike by permittee to study advantage, if any, over periodic burning.

9/65 E. J. O'Nedll

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1

Coot feeding on flesh of American Widgeon during freeze-up and winter stress period.

1/65 E. J. O'Neill

Removal of dense growth of smooth brome grass along panhandle dike by permittee to study advantage, if any, over periodic burning.

9/65 E. J. O'Neill

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White Sturgeon (64 inches long; 50 lbs.) found in Southwest Sump irrigation ditch. Scale spines indicated the specimen to be 20 years old.

6/65 E. J. O'Neill

One of three western grebes analyzed by H.E.W. lab at Klamath Falls, Oregon (composite samples) which showed following chlorinated hydrocarbons: DDE, DDD (and/or) DDT, Dieldrin, and Endrin.

7/65 E. J. O'Neill

Ring-billed and California gulls "mousing" for Mictotus on C-Field block immediately following removal of barley stubble by fire.

11

1/65 E. J. O'Neill

White Sturgeon (64 inches long; 50 lbs.) found in Southwest Sump irrigation ditch. Scale spines indicated the specimen to be 20 years old.

6/65 E. J. O'Neill

One of three western grebes analyzed by H.E.W. lab at Klamath Falls, Oregon (composite samples) which showed following chlorinated hydrocarbons: DDE, DDD (and/or) DDT, Dieldrin, and Endrin.

7/65 E. J. O'Neill

Ring-billed and California gulls "mousing" for Mictotus on C-Field block immediately following removal of barley stubble by fire.

4/65 E. J. O'Neill

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Exposure 134 10/29/61

65

Russell

A before and after comparison of when car meets ismovable object, or in this case our recognition and directional sign at the west end of the East-West Road. Strangely enough the driver only suggered cuts to his upper lip and his passenger sustained no injuries. Needless to say the next sign will be to the south of this junction or in a place where the "Barney Oldfields" won't have a clear shot at it.

Exposure 500 11/28/65

Sekora

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Exposure 134 10/29/61

Russell

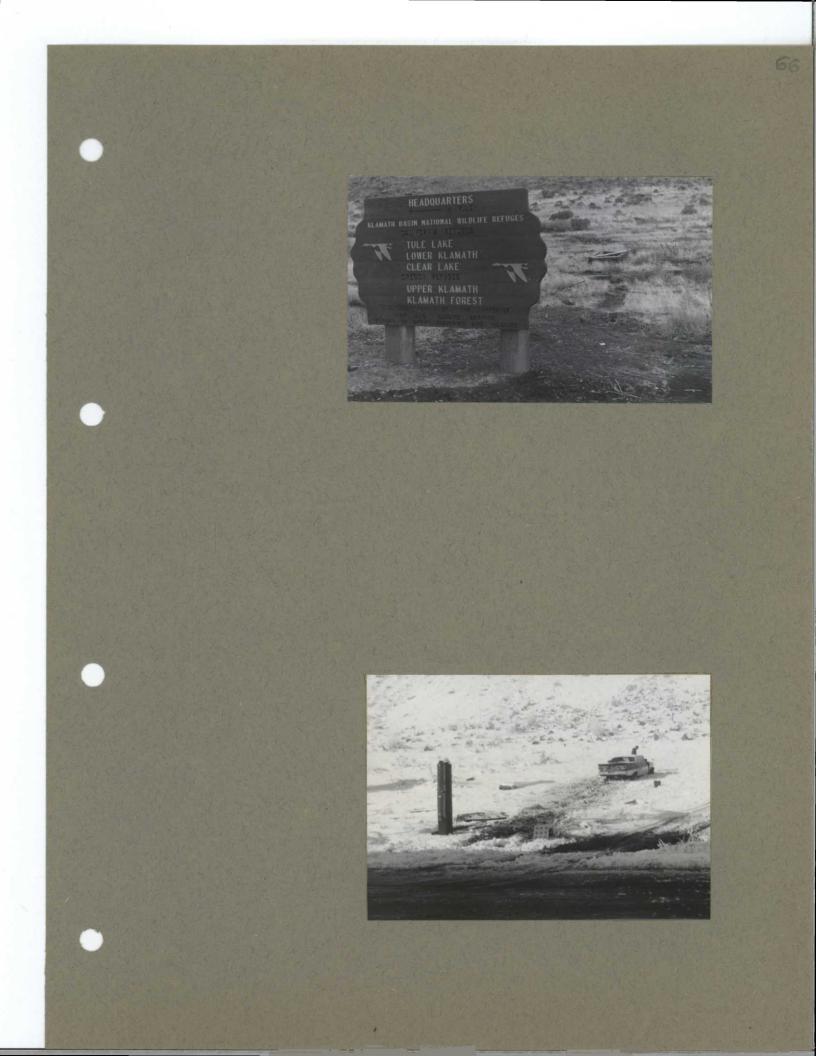
A before and after comparison of when car meets immovable object, or in this case our recognition and directional sign at the west end of the East-West Road. Strangely enough the driver only suggered cuts to his upper lip and his passenger sustained no injuries. Needless to say the next sign will be to the south of this junction or in a place where the "Barney Oldfields" won't have a clear shot at it.

Exposure 500

11/28/65

Sekora

TL



3-1750 Form NR. (Rev. March 1953)

WATERFOWL

REFUGE						MUNINS	OF <u>JANUAR</u>	TO	AMERIC	_, 19_
-Aerial Survey	:		Weeks	of	(2) repor	ting	period	1		
(1) Species	1/3-9	1/10-16	1/17-23	1/24-30			2/14-20	2/21-27	2/28-3/8	: 3/7-13 : 10
Swans: Whistling	(A) 1/3 300			100	(A) 2/4 40	20	888		(A) 3/4 3,290	2,00
Trumpeter					_					
Geese: Canada	880	1,000	1,000	1,800	1,500	1,000	1,810	8,100	1,000	1,50
Cackling		89	20	10		10	10		800	10
Brant										
White-fronted	400	250	100	100	100	100	120	15,000	20, 200	81,00
Snow	10	50B	ELO.			850	9.00	0.00	1.209,000	
Rikue Roco*								100	100	R
Estates TOTAL GROUPS	1,300	1,470	1,810	1,810	1,808	1,810	10.410	67.450	100.000	P.A.
Ducks:										
Mallard	8,780	2,000	1,000	1,000	850	1.002	1.860	0,080	6,800	4.00
Rkaak Unident.	1,800	5,000	5,680	5,000	0007		400	200	808	10,00
Gadwall	109	100	100	100	100			4,000	4,000	
Baldpate	1,650	8.000	8,000	1,500	880	200	032	6,000	18,380	10,80
Pintail	1,400	1.000	1,000	1,000	450	680	1,860	80,000	20,000	
Green-winged teal	100	109	30	60		80		1,000	1,800	1,01
Blue-winged teal Cinnamon teal								50		
Shoveler	1,000	1,200	1,300	1,500	1,700	2.000	1,000	4,030	4,400	
Wood		******		2,000	3,000	6,000	10	19		0.00
Redhead	20	80	1.90	68	50	68	60	830	880	
Ring-necked							80		80	
Canvasback	10	100	100	100	800	190	70	8.000	0.010	2.03
Scaup		1,000	1,000	1,500	1,880	1.000	479	0.000	7.000	
Goldeneye	10			800	659	200	150		200	
Bufflehead	10	00 900	800	808	480	989	319	600	OT9	
Ruddy	800	000	008	1,000	700	6.000	8,859	89,050	61.80	ED.00
OtherCo, Merganser	100	180	300	400	590	800	190	900	879	
TOPAL DECENT	0,840	18,680	18,000	18,800	8,200	10,970	14,870	67,420	110,410	80,47
Coot:	100	3499	180	100	100	100	180	1,800	2,880	10,00
CIMILE TORALS:	10,100	15,510	18,440	18,640	10,260	12,610	28,379	136,309	367,000	207,92

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Cont. 1 1 (Rev. March 1953)

WATERFOWL (Continuation Sheet)

REFUGE

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TULE LAND

MONTHS OF JANUARY

TO APRIL , 19 65

)-Aerial Survey (1) Species		Weeks 3/21-27: 12	s of 3/28-4/2 13	(2 repor 1/4-10 14	ting	peri h/18-2h: 16 :	4/25-5/1:	18	(3) : Estimated : waterfowl : days use	: (4 : Produc :Broods: : seen :	tion Estimate
Swans: Whistling Trumpeter	3,600		3/31(A) 42			5	3	10	83.042		COCAL
Geese: Canada Cackling	1,000	1,000	980 300	1,000	1,000	1,200	1,500	arri ad ore ere uld he	141,470 22,600	102 OL	the the
Brant White-fronted Snow Ross	32,000 80,000	80,000	32,950 00,000 220		30,000 15,000 50		20,000 2,000 20	aug an	1,926,750 3,997,070		
DERST TOTAL GEESE Ducks:	113,300	114,500	114,450	101,400	46,550	33,750	24,020		6,235,810		
Mallard Bing Unidentified Gadwall	5,000	5,000	6,740 14,000 2,910	4,000	3,500 20,000 3,000	1,000 5,000 2,000	1,000 8,000 2,000	Specia	396,900 522,950 235, 760		utven.
Baldpate Pintail Green-winged teal	20,000	10,000 80,000 500	7,300 65,250 2,600	6,000 25,000 3,000	6,000 20,000 4,000	5,000 15,000 4,000	h, 200 3,500 3,800	teld Ma	679,490 2,714,700 150,360		
Blue-winged teal Cinnamon teal Shoveler Wood	200	200 30,000 20	200 39,770	1,000 20,000 10	1,800		2,000 3,000		50,440		
Redhead Ring-necked Canvasback	500	600 50	690	800	10 600 20	10 700 20	850 30		840 42,840 2,170		
Scaup Goldeneye	2,000 6,000 200	1,000 6,000 150	770 6,000 120	100 3,000 50	150 2,000 50	100 1,500 40	70 1,100 10	A contractor	117.320 357,700 18.170		
Bufflehead Ruddy Other Con Mergenser TOTAL DUCKS		400	340 36,050 450	100 30,000 300	250 20,000 350	100	180 10,000 50		<u>46,380</u> 1,872,360 33,880		
Coot:	20,000		The statement of the st	96,980 15,000	In the second division in the local division	20,000	42,800 26,000	alation	8,424,150 1,218,700		
GRAND TOTALS:	316,970	314,120	315,742	213, 38500	193, 285	121,925	92,823		15,961,702	1	

	(5) Total Days Use :	(6) (7) Peak Number : Total Production	SUMMARY
Swans	83,042 :	3,600 :	Principal feeding areas Dikes, water areas of sumpe la
Geese	6,235,810 :	122,800	and 1b, adjacent green barley fields.
Ducks	8,424,150	183,190 :	Principal nesting areas Muskrat houses, tule clumps
Coots	1,218,700	35,000	1/0 100 100 30 50 50
Total	15,961,702	50 50 20 20 20 20 20 20 20 20 20 20 20 20 20	Reported by Edward J. 0' Heill
Not all	multaneously		
	Species:	In addition to the birds listed	
(1) 5	Species:	In addition to the birds listed reporting period should be adde	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given
(1) S	Species:	In addition to the birds listed reporting period should be adde	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance.
(1) S (2) M F	Species: Weeks of Reporting Period:	In addition to the birds listed reporting period should be adde to those species of local and n	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance.
 (1) S (2) M F (3) E 	Species:	In addition to the birds listed reporting period should be adde to those species of local and n Estimated average refuge popula	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance.
 (1) S (2) W H (3) E D (4) H 	Species: Weeks of Reporting Period: Estimated Waterfowl	In addition to the birds listed reporting period should be adde to those species of local and n Estimated average refuge popula Average weekly populations x nu Estimated number of young produce breeding areas. Brood counts s	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance. tions.
 (1) S (2) W F (3) E D (4) F 	Species: Weeks of Reporting Period: Estimated Waterfowl Days Use: Production:	In addition to the birds listed reporting period should be adde to those species of local and n Estimated average refuge popula Average weekly populations x nu Estimated number of young produce breeding areas. Brood counts s	tions. The days present for each species. A based on observations and actual counts on representat: hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.
 (1) S (2) W H (3) E (1) F (1) F (5) T 	Species: Weeks of Reporting Period: Estimated Waterfowl Days Use: Production:	In addition to the birds listed reporting period should be adde to those species of local and n Estimated average refuge popula Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s breeding habitat. Estimates ha A summary of data recorded under	tions. The days present for each species. A based on observations and actual counts on representation hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.

Interior Duplicating Section, Washington, D. C. 1953 3-1750 Form NR (Rev. March 1953)

WATERFOWL

REFUGE Tale Lake

MONTHS OF Noy TO August , 19 65

			Weeks	of r	(2)	ing p	aniad			
(1) 1	5/z-8 :	5/9-15	5/16-22	5/23-29	8/30-6/5			6/20-26 :	6/27-7/3:1	/4-10
Species :	1 :	2 1	3 1	<u>ц</u>	5	6 :	7	8 :	9 :	10
Swans:						1-6/0				
Whistling	5	5	3	1	1	2	1	2	1	
Trumpeter	1,000	1,600	1	TROUGH IN T						
Geese:					1					
Canada	1,000	1,500	1,000	1,000	900	1,020	1,400	1,500	1,800	1,80
Cackling	500	50	50	80	80	80	30	20	20	
Brant								1.		
White-fronted	16,000	17,500	10,000	8,000	30		92		20	3
Snow	1,000	2,000	300	20	20					
Blue				Sec. 1						
Etim: Bees"	20	20	20	8	1		1	1	1	1
Ducks: Total Goese	18,520		11.370	9,050	980	1,000	1,400		1,610	.87
Mallard	8,000	A. (.). (.).	3,000	2,800	3,200					- 170
Elask Unidentified	10,000		A STAR	ETD.	8.500	8.689	A.900	1.000		
Gadwall				8,000	8.009	8.700	3.000	3.200	8.000	3.00
Baldpate	3,000	4,000	3,850	3,500	100	50	50	80	80	5
Pintail	5,000	8,000	7,800	9,000	3,500	2,500	1,500	1,000	1,000	
Green-winged teal	4,000	6,600	6,000	8,000	1,250	1,100	1,100	1,100	1,150	1,10
Blue-winged teal			10	10	10		80			
Cinnamon teal	2,500	4,000	4,000	2,000	1,200	1,000	8.000	2,000	8.000	8.00
Shoveler	3,800	8,000	8,000	8.000	1,000	1,500		809	000	60
Wood	10	10	10	10	10					
Redhead	1.500		400		1.000	8.000	5,000	8.000	6.000	5.00
Ring-necked	50	180	80	10	20			1.00	80	I
Canvasback	100	100	100	100	808			100	100	1
Scaup	800	1,000	2,000	0.00	003	600	000	1.00	100	10
Goldeneye	20	10	10	10	10			Contraction and		
Bufflehead	800	200	1,500	890	80	40	40	30	20	The second se
Ruddy	820	2,500	000	5.000	8,000		8,000	8,000		2.00
titur Con, Merganse			10	10			10	10	20	20
Total Dacks	39,320	28,670		34.000	20,850	21,210	89.489	19.590	81.500	- CDATA
Coot:	30,000	18,000	5,000	4,600	5,000	3,200	4,000	5,000	5,000	5,00
Grand Tetals	87,850	77,950	52,940	CHARLE	26.590	25,500	20,080	THE PLAN	28.260	27.59
The second secon						TRANSFERRATION OF THE PARTY OF	The second se			

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Cont. 1 (Rev. March 1953) (A) Aerial Commo

WATERFOWL (Continuation Sheet)

Species :		Neeks 7/16-24 12	1/25-31 :		ting 8/8-14 :	8/15-21	8/22-28	18 :	(3) Estimated waterfowl days use	: Produ	:Estimate
Wans: Whistling Trumpeter	V IP	1	(A) 1/27	orded 11d	1 (6) 10	1	(A) 8/23		100		
eese: Canada	pres	2,000	940	1,000	1,000	1.800	2,100	3,000	100,020	101	880
Cackling	2,100	80	- CALU	20	UCCC TOT	IQ 00.901	10	10	6,800	LA DEG BUT	BUTTEL
Brant											
White-fronted	20	-	A bobars	crous so i		30	Neur SD	500	300,000		1
Snow	087 .80	50		50	50	30	20	10	25,970	-	and the state
Bing Bees!		8			- D. C. I				630		110000
Athe Total Geese	2,220	8.100	940	1,100	1,100	1.880	2,190	3.050	597.400	101	850
ucks:				1. S. S. M.	100-100 M						
Mallard	1.500	3.000	4.840	8,000	6.000	6,000	8,800	7,000	818,140	40	560
Black Unidentified	E.O.	1,000	1,800	2,809	3,000	8,000	7,800	10,000	417,650	34	1,230
Gadwall	2,800	2,000	1,150	8,500	3,000	6,000	10,000	9,000	487.489	10	1,849
Baldpate	20	20	to the bi	50	08.00	80	008 200	4,500	183,280	1 16 SDe	
Pintail	2,000	2,500	865	6,000	8,000	19,000		88,000	1,674,800	18	760
Green-winged teal	1.100	200	pecs* 12	100	E00	1,000	8.000	3,000	822,400		
Blue-winged teal	10	20		29	20	10	1	3,860	1.840	1	10
Cinnamon teal	8,800	1,800		8,000	8,500	3,000	3,000		287,853	1	70
Shoveler	0.00	1,010	180	1,000	1,800	8,000	4,000	8,000	\$13,010	1	170
Wood					re box	10	a the second	* 1	420	E to Topia	
Redhead	4,200	2,000	205	1,500	2,000	2,000	8,800	3,000	327.710	149	10,500
Ring-necked	50) 50		50	100		80	100	0,800	-	1 1 1 1 1 1
Canvasback	150	100		800	210	200	200	200	18,270	_	140
Scaup Goldeneye	100	100	20	180	200	180	300	500	69,650		1
Bufflehead					10			40	700		
Ruddy					4 500		a la constantin a su de la constantin	7,000	18,278	78	8,740
Sthat Com. Mergans	2,009 r 10	8,800 10	8,150	4,000	4,800	4,200	5,500	1.0.0	1,330		40
Total Busks	18.399	10.020	11.490	23.180		60.000	0.100	DOALD	KARAKED	328	99,100
oot:	5,000	10,000	25,070	30,000	32,000	30,000	40,000	80,000	2,394,200	66	3,000
Grand Totals		88,780		54,280	\$3,799	88,810	108,350	164,450	6,906,310	585	25,020

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(5) Total Days	(6) (7) s Use : Peak Number : Total Pro	
Swans	<u>60</u> :	Principal feeding areas Supp 1-4 and 1-3, water estuaries,
Geese 587,4	21,070	etc. of high agentic production
Ducks 4,814,4	10,000 :	Principal nesting areas fringe marsh of support 1-A and 1-B
Coots 2,104,1	50,000 :	
FORAL 6,900,2	"Not simultaneously	Reported by Edward J. O'Heill, Wildlife Bielegist
(1) Species:	INSTRUCTIONS (See Secs. 753 In addition to the bir	ds listed on form, other species occurring on refuge during the ds added in appropriate spaces. Special attention should be given
 Species: Weeks of 	INSTRUCTIONS (See Secs. 753 In addition to the bir reporting period shoul to those species of lo	ds listed on form, other species occurring on refuge during the d be added in appropriate spaces. Special attention should be given ocal and national significance.
 Species: Weeks of Reporting Per 	INSTRUCTIONS (See Secs. 753 In addition to the bir reporting period shoul to those species of lo riod: Estimated average refu	ds listed on form, other species occurring on refuge during the d be added in appropriate spaces. Special attention should be given ocal and national significance.
 Species: Weeks of 	INSTRUCTIONS (See Secs. 753 In addition to the bir reporting period shoul to those species of lo riod: Estimated average refu	ds listed on form, other species occurring on refuge during the d be added in appropriate spaces. Special attention should be given ocal and national significance.
 Species: Weeks of Reporting Per Estimated Wat 	INSTRUCTIONS (See Secs. 753 In addition to the bir reporting period shoul to those species of lo riod: Estimated average refu terfowl Average weekly populat Estimated number of yo breeding areas. Brood	ds listed on form, other species occurring on refuge during the d be added in appropriate spaces. Special attention should be given ocal and national significance.
 Species: Weeks of Reporting Per Estimated Wat Days Use: 	INSTRUCTIONS (See Secs. 753 In addition to the bir reporting period shoul to those species of lo riod: Estimated average refu terfowl Average weekly populat Estimated number of yo breeding areas. Brood breeding habitat. Est	eds listed on form, other species occurring on refuge during the d be added in appropriate spaces. Special attention should be given ocal and national significance. uge populations. dons x number of days present for each species. ung produced based on observations and actual counts on representative counts should be made on two or more areas aggregating 10% of the dimates having no basis in fact should be omitted.
 Species: Weeks of Reporting Per Estimated Wat Days Use: Production: 	INSTRUCTIONS (See Secs. 753 In addition to the bir reporting period shoul to those species of lo riod: Estimated average refu terfowl Average weekly populat Estimated number of yo breeding areas. Brood breeding habitat. Est Se: A summary of data reco	eds listed on form, other species occurring on refuge during the d be added in appropriate spaces. Special attention should be given ocal and national significance. uge populations. dons x number of days present for each species. ung produced based on observations and actual counts on representative counts should be made on two or more areas aggregating 10% of the dimates having no basis in fact should be omitted.

WATERFOWL (Continuation Shees)

Interior Duplicating Section, Washington, D. C. 1953

3-1750 Form NR-(Rev. March 1953)

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WATERFOWL

REFUGE T	le Lake					MONTHS O	September	TO	December	, 1965
:			Weeks 711-15 3	ofr ///1: h :	(2) e port 10/3-0 5			. 8 :	10/11-11/6	
Swans:	(A) 1/10			(A) 9/28		(4)10/10	A) 10/19	(A) 10/25	10	10 th) 11/1
Whistling									10	38
Trumpeter Geese:										
Canada	8,800	3,700	3,000	8,800	2,000	1,870	1,660	1,000	1,100	1,640
Cackling	10	10	10		10		40,000		200,000	303,000
Brant										
White-fronted	9,070	11,000	80,000	82,110	105,000	-711 (151)	110,450	100000		
Snow	10	10	209	710	6,000	Statement and American Statement				
Binun Bogs'									80	100
Cathar Total Goose	12,600	14,720	28,810	88,800	113,010		282 800	787,200	861,810	665,880
Ducks:									ASP TRUMPS	
Mallard	28,380	14,000	28,900	84,970	65,000	78,709	00,000	100,200	50,000	20,200
Bhack Unidentified	Contraction of the local division of the loc	9,000	81,000	19.290	10,000		(9,09)	25,600	110,000	16.250
Gadwall	15.070	0.000	9,000		10.000	25,100	33,000	23.259	20.000	10.000
Baldpate	7,100	16,000	25,000		51,000				10,000	67,660
Pintail	163,630	102,000	100,000	101,000	171,000		And a state of the	113 10.00		000,000
Green-winged teal	0,010	8,200	6,000	4,000	11,009	12,000	22,050	10,400	6,000	1,580
Blue-winged teal										
Cinnamon teal	820	1,000	001	60	1,600		0.0	1,000	1,000	100
Shoveler	19,289	16,000	11,000	20,610	26,600	20,200	80,409	7,500	50,000	60,600
Wood		80	10			1				
Redhead	8,110	8,100	2,800	1,050	1,800	1,000	909	709	3,000	1,670
Ring-necked		20	30		10	all			80	
Canvasback	010	4.90	810	550	040			4,600	3,500	3,820
Scaup	1,180	1,800	1,869	1,960	4,000	27,000	36,700	4,950	4,000	6,500
Goldeneye Bufflehead	200		200	150	200	500		8,800	1,000	1,830
	13,100	12,000	14,000	11,300	5,000		1,700	20,500	Contraction of the local division of the loc	
Ruddy Ether C. Mergeneer	10,100	10,000	10,000	11,000		100	1,100	20,000	85,000 203	18,030
Total Basks	20,00	100,210	320,110			481,900		1,00,000	1,300,570	768,970
Coot:	115,830	120,000	110,000	101,400	180,000	171,650	204,700	386,000	350,000	175,080
Grand Totals	359,410	322,930	383,880	307,300	684,880	676,700	3,500,540	2,727,000	2,500,000	1,689,310

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Cont. 1 1 (Rev. March 1953)

WATERFOWL (Continuation Sheet)

Washington, D. C.

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(seture to the t		veeks	of	repoi	ting	peri			Estimated	: Produ	
			11/23-19/	112/1-11	HE/H-IGI			ceunna -	waterfowl		Estimate
Species :	11 :	12 :	13. :	14 :	15 :	16 :	17 :	18 :	days use	: seen	: total
Swans:	20	150	A)11/30 400	480	(A)12/17 770	900	1,400		88,640		
Whistling	20	100			110	000	1,200				
Trumpeter		6108 909	1-000 - E			backe in	Fact and	ITY IN TH	11111		
Geese:	1,290	040	850	700	1,170	1,000	1,200	Le TLET	215,740	JOE OL I	pe l
Canada	57,100	10,000	22,700	10,000	800	800		and hote		A Physe over	100140
Cackling Brant	01,100	<u> </u>		<u> </u>	Gran						All and a second
White-fronted	250,500	9,100	11,100	0.000	4.000	1.550	750	wop when	11.947.110		
Snow	73,000	14.000	11,950	19,000	3,000	350	200		7,778,868		
Bauer Ross	450			30		30	20	100 - 100 - 10	6,510		
Guiners Total Geose	272,110	41,240	C'N T	80.730	8,970	3,180	2.80		88,108,000		
Ducks:									Stated Report Provide		
Mallard	88,100	4,000	5,700	3,000	6,000	4,000	15,300		4,228,700		
Block Unidentified		6.000		4,000	4,000	10,000	4,000		8,640,100		
Gadwall			5,700	8.000	8.880	300	200	Special	1,374,240	ow d'he e	31010
Baldpate	71,800	4,000	A the he	8,000	d' on for	1,500	8,890	and na	0,001,000	Place the	
Pintail	22,000	0,800	6,750	4,000	3,000	4,000	10,000		36, 140, 710		
Green-winged teal	1.810	400	100	al + 200		80	100	eld Nam			
Blue-winged teal		1. S.				· · · · · ·				1.	1. 1. 1. 1. 1.
Cinnamon teal	100								85,790		
Shoveler	85,880	7,000	80,800	10,000	7,000	5,000	5,000	aster places	2,853,530	() () () ()	
Wood				and have	No Berboles	ad the Pa		1	210	The state	Service Services
Redhead	1,010	100	100	100	260	EBU			Control Party		
Ring-necked	100	100 - 2010 - 4	80	50	10	10	10		- 1,10		A LONGER ST
Canvasback	2,000	2,000		1,000	(463)	160	800		HED, COD		
Scaup	7,100	0.000	0,800	4,000	3,000	1,000	1,000	19/10	Yel, CD		100
Goldeneye	140	810	40	100	920	100	190	10 - 10 P	9,660	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
Bufflehead	000	4.00	1,010	1,000	669			14 P.S. 1944	76,000	and money t	The field
Ruddy	11,000	14,000	G.TED	4,500	Pale Co	1,000	1,700	1310 1929	1,208,800	141 35 14	1036,
Orbiens C. Norganos		20	500	150	1.1.1.1.1.1.1	100	400		H, HO	the state	
Total Gacks	212,250	54,870	66,580	45,650	25,870	27,960	49,560		54,601,810		-
Coot:	35,400	8,700	4,550	5,000	2.000	300	400	BROKYEA	13,200,810		
Grand Total			118,080	the second se	er 37,010	32,340	53,730		10,522,320	1	1

pđ

	(5) Total Days Use	(6) * Peak Number :	Total Production	SUMMARY
Swans	• 28,640	1,540	100 - 200 -	Principal feeding areas Unharvested grain baffer fields,
Geese	26,103,560	945,320	· · · · · · ·	barvested Agriculture grain and rew-crep fields in League of Nations, Frog Pond and SW Sump units and adjacent water
Ducks	54,001,810	1,741,650		Principal nesting areas K/A
Coots	13,208,320	350,000	20 1 29	200 19 20 - E,170
COPAL	93,521,830		20,019 10,010	Reported by Edward J. O'Heill & Reylord L. Imman (October comeas by Falmer Sakara & Bay Glahm)
	INS	STRUCTIONS (See	Secs. 7531 through	n 7534, Wildlife Refuges Field Manual)
Gadwa	ecies:	reporting per	iod should be add	i on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given mational significance,
Part and a second	eks of porting Period:	Estimated ave	rage refuge popula	
the second second second	timated Waterfow ys Use:		y populations x n	umber of days present for each species.
(4) Pro	oduction:	breeding area	s. Brood counts	aced based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.
	tal Days Use:	A summary of	data recorded unde	er (3).
(5) To		Most mum mumbo	r of waterfowl pro	esent on refuge during any census of reporting period.
2	ak Number:	Plaxinum numbe		

*

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3-1751 Form NR-1A (Nov. 1945) Refuge	TULE LAR	COB.		IGRATORY E r than wat Months	terfowl)	1017y	• to A p	#1 19	97.65	0 12. <u>00700</u>
(1) Species	(; First	2) Seen		3) Jumbers	(4 Last			(5) Production	rdb thezait 1	(6) <u>Total</u>
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds</u> : Eared Grobe Western Grobe Pied-billed Grobe White Pelicen D-Crested Cornorant G. Blue Heron Common Egret Bleck-Cr. Hight Heron An. Bittern	10 27 5 2 10 14 2 9 3	2/11-20 2/28-3/6 2/11-20 3/7-13 2/28-3/6 2/11-20 2/21-27 2/11-20 3/28-11/3	1800 700 300 150 10 27 350 350 15	4/25-30 4/18-24 4/4-10 2/28-3/6 4/18-24	54113	Present	22		eris Inte Sectors	4200 700 300 400 100 50 350 350 300 20
II. <u>Shorebirds, Gulls and</u> <u>Terns</u> : <u>Killdeer</u> Long-billed Curlew Willet Greater Yellow Lege Lesser Tellow Lege Lesser Tellow Lege Lesser Tellow Lege Lesser Tellow Lege Lesser Tellow Lege Lesser Tellow Lege Lesser Sendpiper An. Avocat Black-mecked Stilt Colif, Gull Mag-billed Gull Homperte's Gull Forester's Term Dowitcher	5 10 2 5 2 200 24 6 10 230 5 3 10	2/14-20 4/4-10 4/11-17 4/4-10 4/11-17 4/12-10 4/12-17 2/14-20 4/13-24 4/25-30 5/25-30 5/25-30	200 10 20 7 20 7 2 1500 50 6 1000 10,000 5 3 10	Miny 1/10-10 1/10-21 1/11-17 * April 1/25-30			the corre Avoid Avoid A epsider A epsider (inclose) (inclose) and refu	use ords fora pro- sign sign fine the fart	Person Pe	250 20 20 10 2 2000 70 10 5000 10,000 5 10

	and the second of								13712
(1)		2)	(3)	(4			(5)	- 40	(6)
III. <u>Doves and Pi</u> Mourning dov White-winged	Presto	Period 50	April	9411	Present	(0)53,9500 (0)		(1) Sected	100
IV. <u>Predaceous I</u> Golden eagle Duck hawk Horned owl		* 3 Anne 2 70 44	2/14-80	•		<u>vedaul</u>	tebrili	Comon Nam	10
Magpie Raven Crow Bold Regle	Provice	B Period 12	2/20-3/6				anine Alexandria	Conto en Lotata Abo 2012-14 Sala 2012-14 Sala 2012-14 Sala	
Turing Valte		1/18-21 8	1/25-5/2			Maria Maria	essanti più	toop edd Bergil Lobe Gill - 13-dae Graft II	· 10
					Reported	l byEdun	rd J. O'Nei	<u>n</u>	
(1) Species	order. Avo	INS rect names as for id general terms species occurrin	as "seagul	1", "tern'	", etc. I	in addition	n to the bi	rds listed	l on
	priate spac significanc	es. Special atte e. Groups: I. II. II. III.	ention shou	ld be give arsh Birds Gulls and igeons (Co	en to thos s (Gaviifo <u>d Terns</u> (C olumbiform	se species ormes to Ci Charadriifo nes)	of local a iconiiforme ormes)	nd Nationa s and Grui	l iformes)
(2) First S	een: The first r	efuge record for	1 Aller	91 HE	Part v	6 8 8	Passeri		
(3) Peak Nu	mbers: The greates	t number of the s	species pres	sent in a	limited i	nterval of	f time.	and a set in the MESSIN WELL	
(4) Last Se	en: The last re	fuge record for t	the species	during th	ne season	concerned.		And Andrews	
(5) Product	ion: Estimated n	umber of young p	roduced base	ed on obse	ervations	and actual		Maril 2019	
(6) Total: INTDUP. SEC., WASH., D.		otal number of th	ne species n	using the	refuge <u>du</u>	ring the p	period conc	erned.	36104

orm NR-1A			M	IGRATORY B	TRDS					
Nov. 1945)				r than wat					in day	
Refuge	Tule Lake		(o the	Months	of	Have .	to August	10	af 65	
Netuge				montens	•••••••		00			
(1)	(2	2)	(:	3)	(.	4)		(5)	rob begal	(6)
Species	First	Seen	Peak N	umbers	Last	Seen	and the second s	Production		<u>Total</u>
				SAN AND	1.1		Number	Total #	Total	Estimated
Common Name	Number	Date	Number	Date	Number	Date	Colonies	Nests	Young	Number
T. Weden and Manah Dinday		13 B		area.					03510	Golden
I. <u>Water and Marsh Birds</u> :	-			-				3 880		
Eared grebe	Previous	Period	5,000	7/25-31	84111	Present	5	1,500	2,000	8,000 8,700
Vestern grobe Pied-billed grobe			280	8/8-14			n	169	200	800
White polices			178	5/30-6/5			1			8,000
Damble-creeted corner	ant *		150	8/28-88			Distants.		WARDER STORY	400
Great-blue heres			40	8/8-14				A states		100
Common ograt			295	8/28-56				190	400	700
Bacuy egret			80	8/8-14				10	80	68
Bl-erowned Mt. horen			800	- / / -				150	800	500
American bittern				7/11-7/1			1	10	80	
White faced ibis Green heres	HUR THINK	4/80		8/8-14	1	4/30		10		
					-				11. 17	
		Real Profession		TONS .					Der ge	
	altibil il		N. Ched	the Line A.		r pessa r	100 00 FF	aat s	- teo.toe	A (1) A
I. Shorebirds, Gulls and	solt the		"mean"	"Itranea"	and differ	[Istoney	htová		1	
Terns:	ported 3	istrogen i	uting the	to the second	a galana	100 80100	optnert an			
Killdeer	Provice	Period	1.0 7 40 80	0/13-19	54111	Present	as angs e.	pring		400
Long-billed earlew Spitted enginer	100 000 000		15	8/8-14			1900 • 15°	Hart P.	Tester in the	- 20
Greater yellevlegs							*	3		80
Lesser yellewlegs			15	7/28-31						150
Loast sandpiper Dewitcher			500 180	8/8-14						5,000 4,000
An. Avecet			808	a las as l			and read	80*	80	8.000
Black-mode stilt			800 10	8/23-23 5/8-14					50 10	2,000 100
California gall	Da Presi	an the state	4,360		Shart Total	10 200	a naediana	a The	as Number	8,000
Ring-billed gall			8,000				1 4 2 3	Second States		8,000
	and the second se	15 200 09 20 15	300	5/16-22		100 marie	102 01 100	100	800	1.000
Perestor's gall Perestor's tern Black tern			2,200	7/25-31			1	30	80	7,000

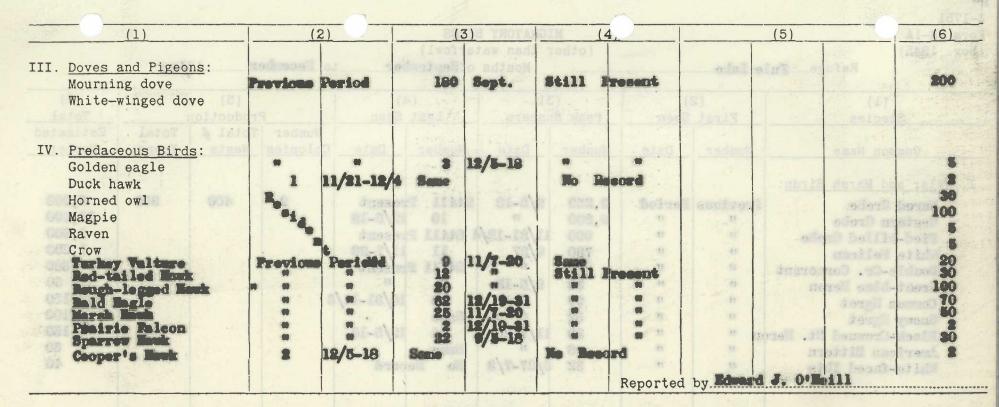
(1)	(2)	(3)	(4	(5)	(6)
III. <u>Doves and Pigeons</u> : Mourning dove White-winged dove	Previous Period	200 June	Still Present	Refer month & [0] 63 (0) (1) (2) (2) (2) (2) (2) (2) (2) (2	(GARI VOR 500
IV. <u>Predaceous Birds</u> : Golden eagle Duck hawk Horned owl Magpie Raven Crow Turkey valuare		2 June 10 July	Technol	entes <u>Careto a</u> <u>a March Made</u> : <u>antico</u> <u>Strutous</u> 201 n Jode <u>n</u> silier un cole solution <u>n</u> solute tes <u>n</u> <u>singet n</u> <u>a n</u> <u>singet n</u> <u>a</u> <u>a</u> <u>a</u> <u>a</u> <u>a</u> <u>a</u> <u>a</u> <u>a</u> <u>a</u> <u>a</u>	A LEAST AND A LEAS
000, 1 008 001 05 1 1 1 1 1 0 06 1 06 01 0 01	2 7 1 2 2 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	INSTRUCTIONS	Report	Edward J. O'Mill, Ric	and the second se

		NS	TR	U	CT	Ί(DNS
--	--	----	----	---	----	----	-----

(1)	Species:	Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A	
		order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed of	on
		form, other species occurring on refuge during the reporting period should be added in a	opro-
OKA		priate spaces. Special attention should be given to those species of local and National	
- Calle		significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruii:	
		II. Shorebirds, Gulls and Terns (Charadriiformes)	
But a start		III. Doves and Pigeons (Columbiformes)	
100. S		IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous	
- 000 A		Passeriformes)	
(2)	First Seen:	The first refuge record for the species for the season concerned.	
644		a state padpen-innte	
(3)	Peak Numbers:	The greatest number of the species present in a limited interval of time.	
1900.000		A set of the set of th	
(4)	Last Seen:	The last refuge record for the species during the season concerned.	
000.1	20 05	History tests	
(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.	
INTDUP. SEC.,	WASH., D.C.		36104

pd 3–1751					
Form NR-1A		MIGRATORY	BIRDS		
(Nov. 1945)		(other than wa	aterfowl)		
Refuge	le Lake	Months	s of leptember	to.December	1966
		·····································	AT CALL SALA	of epoirme	Swob partment
(1)	(2)	(3)	(4)	(5)	(6)
Species	First Seen	Peak Numbers	Last Seen	Productio	
Common Name	Number Date	Number Date	Number Date	Number Total # Colonies Nests	TotalEstimatedYoungNumber
I. Water and Marsh Birds:			AD-12/AD Share-		Golden sagle
Eared Grebe Western Grebe Piod-billed Grebe White Policom	Previous Period	3,250 9/5-19 9,300 909 11/21-12 760 9/27 209	Still Present 10 12/5-18 /4 Still Present 11 11/7-20 Still Present	2 480	300 5,000 10,000 1,500 1,800 500
Banble-Cr. Cormorant Great-blue Heron Common Egret Snowy Egret Black-Crowned Mt. Her		32 9/5-18 90 " 52 " 30 11/7-20	3 10/31-11/ Same 4 12/5-18		60 189 109
American Mittern White-faced Ibis	Berted to better	0 32 0/27-7/3	Same	B	1 60 40
II. <u>Shorebirds, Gulls and</u> <u>Terns</u> :	ist, İ911 Edition to, In addition reporting period	IONS a the A D.U. Checkl seagbill" "tern", s refute haring the	INSTRUCT A named is lound i general Lerme as ' seise genering ja	Use the correct order. Avaid fors. other so	(1) Station
Killdeer Wilcon's Snipe Willet Spotted Sandpiper Lesser Tellowlegs Loost Sandpiper	10 9/5-18 Still Present	250 9/8-18 50 5ame 30 * 70 * 4,000	Still Present 5 12/5-18 No Record 5 10/31-11/ 200 11/7-20	seese essing eensellagis	350 200 10 50 70 5,000
Dowiteber American Avocet Black-meched Stilt Califernia Gall		4,000 11/7-20 2,000 9/5-18	8 12/5-18 100 11/7-20 No Record 16 Still Present	The Sett off	4,000 3,000 50 10,000
Ring-billed Gull Bomaparte's Gull Ferester's Term	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3,830 50 9/8-18	10 12/5-19	Jeelans of the	30,000 50 2,000
Black Torn Caspian Term		1,500 *	0 0	The set of the	4,000

(over)



(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. <u>Water and Marsh Birds</u> (Gaviiformes to Ciconiiformes and Gruiiformes)

II. <u>Shorebirds</u>, <u>Gulls and Terns</u> (Charadriiformes) III. Doves and Pigeons (Columbiformes)

III. Dredsseeve Binds (Colossiformes)

IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous

Passeriformes)

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TERIOR--PORTI AND ORE

- (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 <u>during the period</u> concerned.

3-1750b UNITED STATES Form NR-1B DEPARTMENT OF THE INTERIOR (Rev. Nov. 1957) FISH AND WILDLIFE SERVICE BUREAU OF SPORT FISHERIES AND WILDLIFE CORRECTED COPY WATERFOWL UTILIZATION OF REFUGE HABITAT CORRECTED COPY Refuge Tule Lake For 12-month period ending August 31, 19 Reported by Edward J. O'Neill Title Wildlife Biologist (3)(1)(2)(4)(5) Habitat Breeding Area or Unit Type Population Acreage Use-days Designation Production (123 Crops Ducks 23,260,190 5.284 15,945 22 600 Upland Geese 5,060,820 test tyles of 674 Marsh Swans 90,530 3,290 Coots 280 Water 6,132 7,300,000 .680 Sump 1-A Total Total 18,775 10,219 35,701,540 7,102 --7135 9,355 3,549 9,960,450 Crops Ducks 5,950,180 105 100 Upland Geese a falles as 200 20,350 Marsh Swans 2,700 1,900,910 040 Water 3,070 Coots p 1-3 4,984 18,831,190 A REPT 8,100 Total Total bucks CD 68 3,463 200 3,006,500 64 TIT Crops 00 Upland 3,300,010 6 Geese Longue of Marsh Swans 100 000,100 60 Water Coots Nations 9,469 1,959,710 Total Total r (†) h. --------7,801 400 Neve ter Crops Ducks 7.860.240 96 Upland 5,005,860 8 10 Geese 450 Marsh Freg Ponde of Swans 621,000 Water PT COMOS Coots 13,897,550 1021 7,861 Total Total 80 80 --00 00 0 00 00 00 6,0548 200 20,168,130 48 our try Crops Ducks 1010 2,436 28 0,000,010 Upland Geese SW Sump beta 18,500 Marsh Swans Ditches Coots 8,000,780 10 Water 8,490 Total 29,239,750 76 6140 Total -... 8,040 22,100 17,827 Ducks 64,247,610 Crops 24,232,210 860 Upland 3,970 Geese 576 TOPALS Marsh 3,490 Swans D THE 12,462,990 2,320 3,000 Water Coots 101,119,740 11,750 20,020 Total 1.001 Total Crops Ducks Upland Geese Marsh Swans Water Coots Total Total -----1 - Refuge farmed (over) 2 - Refuge farmed - net eropped CORRECTIST COPY

0.0

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted , to report changes in unit boundaries or their descriptions. 3,548 0,385

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a 50. part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these esti-215 mates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

Population: An estimate of the total breeding population of each category of birds for each area or unit.

herraft anulas a

2 = Mefage farmed - not crouped

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

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8,105

1200

0.0

-

400

100 100

1,080

(L) Breeding

M 3-1750c Form NR-10

(Sept. 19__)

WATERFOWL HUNTER KILL SURVEY

Refuge Tale Lake (Marsh)

Year 196 5

			(Based on 12-1/2 percent sample)					
(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
10/9-15	874 scord sald be on to	1,030 of has de colts drogorq	Pintail(442), Mallerd(314), White fronted goese(113), Green-winged teal(37), Shoveld (44), Widgees(34), Caukler(21), Cima. Teal (18), Gadwall(12), Rodhead(8), Cauada goes Lesser Scoup(3), Canwashaek(3), Snow(1)	r mtatm s	to survey to survey rom those w	eeb,1 goal is conly f lected d	edf (2) edf (2) edf (2)	9,553
10/16-22	147	ell Isli - :vi	Pintail(97), White-fronted geose(72), Mallard(42), Cackler(20), G-W Teal(13), Widgeen(10), Shoveler(5), Gadmal1(5), Cana geose(4), L. Scoup(3), Cinm. Teal(2), Snow geose(2), Redhead(1), Convesheck(1)	978 1 97 10 1 10 10 1	ak 20 to col total numbe	746 the the waterf	600 sho (3) Red (h) Ids	2,145
10/23-29	100 910	541	White-fromted gaese(67), Mallard(30), Pintail(22), 6-W Teal(8), Shoveler(7), Cackler(4), Widgeon(3), Bufflehead(3), Camada geose(2), Cimm. Teal(1), Smow(1)	(MIL G	(1). (1). I numbers o	601 ted Teal	060 Pin win win (5) Red	1,346
10/30-11/8	100 so the L	963	<pre>Pintail(00), White=fronted goose(27), Mallard(25), Skoveler(11), Widgeen(9), G-W Teal(6), Cackler(5), Canada goose(4), Cima. Teal(3), Endwall(3), Snew goose(2), Redhend(2), Bufflehesd(1), Baddy dack(1)</pre>	105 105	1 Mubers o lumns 5 and a botal mu	200 10 E	 40) Red (7) Tot (8) Est 	1,248
11/6-12	114	623	Pintail(113), White-fronted gross(72), Mallard(26), Sheveler(12), Gedwall(7), G-W Teal(8), Widgeon(3), Cackler(3), Galdeneyu(3), Enew gross(2), Canada gross (1), Redheed(1), Maffleheed(1), L. Scamp (1), Canvashack(1), Hooded margameer(1)	6 68 60 100	brojected	318 9 Iques 1	aud 629 ILEX (?)	1,726
11/10-19	87 03-8450	304	Pintail(71), Mallard(36), White-fronted geose(36), E-W Yeal(18), fmow geose(18), Widgeom(10), Cackler(10), Cinm. Teal(1), Gadwall(1), Redhead(1), Mafflehead(1)	206	50	256	521	1,599
1			(over)				ł	

(1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.

referred , (TS) Loss furnity erent) , (SII) asses

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d-W Teal(0), Gaskler(5), Cauda gose(6),

Cinn. Seel(3), Gadmill(3), Snow goose(2),

boldeneye(3), Show genee(2), Canada goore
(1), Sedhead(1), M. Scamp
(1), Conversion(1), Moded reviser(1)

Pintall (71), Mallard (38), White-fromted

mose(38), 0-W Teal(18), Endw goose(18), Widgeon(10), Caeller(10), Cimm. Eal(1), Gadechi(1), Sedbend(3), McTrielend(1)

(2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.

(3) Record the total number of hours the hunters spent hunting on the refuge.

 (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Greenwinged Teal (1).

(5) Record total numbers of waterfowl bagged.

(6) Record total numbers of waterfowl reported knocked down but not recovered.

(7) Total of Columns 5 and 6.

600.0

BM. B

846,1

628.1

1,728

\$80.1

(8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).

(9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$.

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21-1/17

0/10-22

0/22-33

20/30-11/5

81-0\19

(Sept. 19...)

WATERFOWL HUNTER KILL SURVEY

Refuge

Tale Lake (Marsh) - Cont.

Year 196 5

			A CONTRACT OF A					1 A. 1993
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Weeks of	No. Hunters	Hunter		Total	Crippling	Total	Est. No.	Est. Total
Hunting	Checked	Hours	Waterfowl Species and Nos. of Each Bagged			Kill	of Hunters	Kill
11/20-25	88 scord wild be	181 and to ation sh	Mallard(16), Pintail(13), White-fronted pose(12), Shoveler(6), Snow goose(5), Cac (4), G-W Teal(3), Widgeen(3), Camada goose (2), Heeded Morganeer(2), Bufflehead(1), Buildy dask(1)	66 kler	to survey	r 68 Suc goal is conly f	356 lat (2) The dat col	508
11/27-12/3	29	135	Shoveler(15), Pistail(12), Mallard(9), Cinn. Teal(5), Widgeen(4), Bafflehead(4), G-W Teal(3), Caekler(2), Snew goose(1), L. Scemp(1)	56 55 Lect rej rof hor	eff b expe sken to col botel numbe	1476er tid be t	741 the sho (3) Red	375
12/4-10	ard (1.5 bis	39	Pintail(3), Mallard(3), Shoveler(1)	toob 7.1	ee toegs fwo	Tater!	BAT 70)	98
12/11-17	-8.920	(8) 1600	Pintail(2), Mallard(1), Widgeon(1)	Ð .(41)	baanball .	6E) 15a	119 79	79
12/10-84	8	10	Mallard(1), Cackler(1)	2	2	4	46	22
12/25-31	None		town bagged.	Telsw 1	r unupers o	stot bro	18	
1/1-8	None		owl reported Emocked down but not recovered	f water	l numbers o	rd tota	(6) Rec	
TOTALS	1,085	5,029	Pintail(941), Mallard(500), White-fronted goose(400), G-W Teal(144), Shoveler(100), Widgeom(77), Cackler (70), Cinm. Teal(30)	۱r	in ceo 5 and	2,929	0 .0,514)	18,594
			Geden11(28), Snow goose(27), Canada goose (16), Bedhend(13), Bafflehend(11), L. Seau (8), Canbasback(5), Galdeneye(3), Heoded	n 2).	fred (Colum	ers, che	lund	
Average per		4.85	merganser(8), Baddy dack(2) .50 geese 1.72 dacks	2,22	.61	2,83		
Tule Lake M		1.00						
TOTALS	2,707	10,962	Geese ducks 513 1783 1,626 268 2,139 2051	4,190	852	5,042	15,700	30,490
Tule Lake av Hunter	erage per	4,05	.79 geese .76 ducks (over)	1,55 Bepor Field	.31 ted by: No data by en	1.86 bert Ab forcemen	ey & Palmer \$ personnel	Sekora

(1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.

- (2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.
- (3) Record the total number of hours the hunters spent hunting on the refuge.
- (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Greenwinged Teal (1).
- (5) Record total numbers of waterfowl bagged.
- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.

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(8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).

goose(600), 6-9 Ted1(101), Shownlaw[109),

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(9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$.

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M 3-1750c Form NR-JC

(Sept. 19-)

WATERFOWL HUNTER KILL SURVEY

Refuge ____

Tale Lake (Field)

Year 1965

			(Based on 12-1/2 percent sample)					
(1)	(2)	(3)	(作)	(5)	(6)	(7)	(8)	(9)
Weeks of	No. Hunters	Hunter		Total	Crippling	Total	Est. No.	Est. Total
Hunting	Checked	Hours	Waterfowl Species and Nos. of Each Bagged	Bagged	Loss	Kill	of Hunters	Kill
10/9-15	141 broper	503 of has	White-fronted moose(75), Pintail(12), Cackling moose(9), Mallard(8), Gadwall(4), Widgeen(3), Redheed(3), Green-winged Teal (2), Snow greese(2), Shevelor(1)	a minim bo have	com those N	ai isog	302,1] at	1,146
10/16-22	153 3 mo. eraso ras.	590	White-fremted goose(105), Cackler(29), Snow goose(9), Gadwell(4), Widgeon(3), Mellard(2), Pintail(2), Causda guese(2), Rodhend(2)	159-1 bebo trail	uri 62 each effort expe sken to col	e 891 d hunter 1d be t	100 9 07 ent 1012	1,163
10/23-29	221	713	White-frented goose(195), Cockler(50);	282	35	317	1,898	2,000
L MARINE	ard (61).	IsM :v:	Canada goose(17), Mallard(5), GW-Teal(5),	tn decr	saltaara Iwo	waterf	(h) List	
	Green-	(8) 8800	Snow groce(4), Pintail(4), Shoveler(1), Bufflehend(1)	(16), G	Redbesd	ail (36	Pint	
10/30-11/5	187	460	White-fronted goese(162), Cackler(41), Snow goese(29), Canada goese(5), Mallard (4), Piminil(3), Redhead(3), Widgann(2), Gadwall(1)	250 Tedaw 1	es 1 mmbers o 1 mmbers o	273 rd tota rd tota	1,322 (5) Reco	1,929
11/6-12	231	834	White-fronted goose(311), Snow goose(19), Pintail(14), Mallard(8), Widgeon(8), GW- teal(8), Cackler(3)	868	has 200 mm	404	1,166	2,042
11/18-19	250	800	White-fronted geose(212), Caekler(61), Snow geose(40), Pintail(16), Mallard(13), Camada geose(2), Buffleheed(2)	385 a	ckest Colum projected	e 604 he	and 1,871	2,632
11/20-26	189	787	White-fronted goose(56), Pintail(9), Gackler(5), Mallard(5), Widgeon(4), Show geese(3), Camede goose(1), Redhead(1), Shoveler(1), Bafflehead(1)	86	6	92	851	316
11/87-12/8	93 08-84201	906	White-frented geose(10), Snow geose(6), Cackler(4), Mallard(3), Camada geose(3), Ring-mocked dack(1) Wood dack(1)	28	7	85	299	118
			(over)					

(Binde Shite (Stat) INSTRUCTIONS The first week of hunting begins with opening day and ends at the close of hunting 6 days (1)later. Successive weeks follow the' same pattern: The goal is to survey a minimum of 25 percent of refuge hunters each week and to record (2) data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data. (3) Record the total number of hours the hunters spent hunting on the refuge. (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgéon (6), Coot (4), Canada Goose (3), Greenwinged Teal (1). SOO. Wilter-frontes marse (192), Cariller (41). 201 Record total numbers of waterfowl bagged. (5), chiefe , c Record total numbers of waterfowl reported knocked down but not recovered. (6)White-fronted goose(211), Ensy goose(19), (7) Total of Columns 5 and 6. Mintail(20), Mallerd(0), Widgeon(0), CH-(8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2). Thite-franked goose(213), Cachler(61), Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$. (9) Witconfronted mose (86), Fintail(9), 205 Caeldes(5), Hallard(5), Widgeon(6), Snew goose(3), Canada goose(1), Medhead(1), (1)hassielind, (1), Balilehead(1) Witte-Trapted goose(10), Endw Coose(6), Cashier(4), Mallard(3), Canada gaose(3), Hing-meched dust (1) these dust (1) 80348-60

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3-1750c Form NR-17

pd (Sept. 19-J)

WATERFOWL HUNTER KILL SURV

Year 1965

Refuge Tele Lahe (Field) - Cont.

(4) (5)(6)(7)(8)(9) (3)(1)(2)Crippling Est. No. Total Est. Total Total Weeks of No. Hunters Hunter Kill of Hunters Kill Waterfowl Species and Nos. of Each Bagged Bagged Loss Hunting Checked Hours 12/4-10 White-fronted gooce(25), Caskler(11), aw by7aas 70 SEG 60 67 257 945 Pintail(6), Camada goose (6), Mallard(5), Snow goose(2), Sheveler(2), Cinn. Teal(2) broose of has (2) The goal is tion should be Vidgeon(1) White-fronted goese(25), Canada goese(14), Snow goose(2), Caskler(1) 12/11-17 43 104 42 8 50 99 115 18/18-54 White-fronted geose(12), Canada goose(10), 30 102 26 2 28 78 64 Mallard(2), Cackler(1), Snew spons(1) 12/28-31 Mallard(26), Pintail(14), Cackler(5), Sno 27 105 3 61 62 140 mose(4), White-fronted goose(3), Widgeon (3), Shoveler(2), Canada goose(1) Mallard(28), White-fronted(15), Pintail(16) 1/1-6 2 87 RAL 61 63 146 Cackler(4), Canada geose(4), Widgeon(1). Gaden 11(1) White-fromed geone(1207), Caekler(224), 1.672 1,004 167143 5.933 218 2,113 9,160 11,960 Snow goose(139), Mallard(107), Pintail(90) Canada goose(65), Widgeen(25), Green-winged Teal(12), Gadwal1(10), Redhead(9), Shoveler (7) Total of Columns 5 and 6. sek, indinding (8) Estimate the total munder of (7), Bufflehead(4), Cinn. toal(2), Ringhuncers checked (Column 2). necked(1), Wood dack(1) ercent. Column 9 = veren 10. mm ?. Average Fer Banter 3.55 .18 dacks 1.13 .19 1.26 Reported by: Robert Abray, Edeard O'Heill, end Selerre Field data by all enforcement perconnel

(over)

- (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.
- (2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.
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Spar manae(133), Mallard(107), Frindail(80

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Canada (sose(05), Videron(25), Green-winited

(5) Record total numbers of waterfowl bagged.

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- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.

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- (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
- (9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$.

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3-1752

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Form N° ? (April 1946)

UPLAND GAME BIRDS

Refuge TULL LATE	Months of JANUARY to APRIL	, 19 65
------------------	----------------------------	---------

(1) Species	(2) Density		(3) Young Produced		ng Sex		(5) emova	ls	(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.	
Ring-necked Phonezet	15,000 As Narob, Upland	nne bei reineg bust e	a.	85 1 0860 1960				ton ton plan strt	2000		
Valley Queil	3,500 Ac. Sege-Oran Fringe agriculture		0	H	ldissoq ermi serger no s tonis erste	i ba tovo to a	0	blim 2001 Iqnas	450		
Chukar Partridge	500 Ac. gresslands and fringe agriculy	urel	egi dis		incutions, par incutions, parts	i ya	barr o py 11 blood		30	(4) SEX HATTON	
	othed grodes end 3		er ages a	1249	ble. In exch cath	Tine'	a 11 ma I	scist	other sy Indicite	10240/2021 (2)	
	ident period. This relige dering cord	e the the the	al-pub 1. galij	Note Projection	veing they p plus these	ende etrik	in Le 1 dan	tot b blass	Satinate inslude	(6) TOTALS	
	errere al bereve a betaelper		101038 200998	100	olinenini -	nend i			obs for i		
0'He111			-		trous tes			q edd	itasble to	995 marico yino *	
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Form NR-2 - UPLAND GAME BIRDS.*

5. A.F.

- (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 Nc. 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.

3-1752 R Form N° 7 (April 1946)	Refuge TULE L	WE		UPLA	AND GAME BIRD Month		Na		to	ngust , 19 65
									SCHIER SMAD	Form MI-2 - UPLAND
(l) Species	(2) Density		(3 You Produ	ng	(4) Sex Ratio	R	(5) Lemova	ls	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-nocked Phoseent Velley Queil	15,000 Acres Marsh, Upland 6,500 Acres Sage- Grasslands and Agric. fringe	ed enor generg generg e land sted l ble and ble un	23 5	600 150	28H:100F		n da at na hard bard bard bard bard bard bard bard b	typ i typ alian alian i onid camp	3,000	Wet, cold June weather again very hard on upland birds resulting in smeller, later (remesting) broods than in 1964.
Chukar Partridge	2,500 Acres Grass- lands and fringe Agric.	o obeei pheuse	1990 ba	20	ing produced it ng hapitat finerily to se phie	f yo bree ya ya t	ektio	E	50	OTTAS INE (A)
	g the report parts sport period. This refuge during card	durti toto the	renove durin bing in	ory dare	in each gate whing the r plus those	netr noter	L nun 1. nun 1. nu 1. nu	tota E tot	lindlosta Satimute stulini	(5) HEADOVALLOS (6) TOTALIS
	a covered in nurrey requested.	ens Ace Really	. no.i ža Longa i	Lingo Jon 1	determine (a be nond	eu be breg	tif leni testat	Indioabe include	(7) FEMARE:
			.bi	an ,e	bloge boa	1100	bolar)	q eni	of eiteri	e only columns app

E.J. O'Heill

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY:

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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 Nc. 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.

3-1752

pd Form NP 2 (April .46)

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Refuge Tule Lake

Months of Beptember to December , 1965

(1) Species	(2) Density	an at t	(3 Your Produc	ng	(4) Sex Ratio	R	(5) emova	ls	(6) Total	(7) Remarks	(1)
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent inform specifically re List introduction	equested.
ing-nocked pheasant	18,000 acres marsh ogricultural and upland-juniper	enough meral land, b ad in W thmitte sreas l under	the g the g ture ture ures a long tote	e de cure ricu mbol Fig five tive		1700	on bout soot boot boot soot	pes, ind h fie, id be is an iple	3,500	Wet, stormy weath days of hunting du all but SW Sump of hunting.	aring which
alley Quail adm	6,500 acres sage, fringe agricultura and upland-juniper	El	d files		produced, 1 g habitat. rily to wild e.	195		B (0) (bed 500 ed reserved al mulos etal	YOUNG PRODUCED:	
mkar Partridge	2,500 acres sage, fringe agricultura and upland-juniper	i der ed:	ning	rb eg	each categor ing the refu us those mig	11 TE	O N	tal i	i etes 30 l beten tal	REMOVALS: TOTAL:	
	overed in survey.				etermine pop nformation p					REMARKS 1	
				beau	ed bluods b	-	io bo	pers	able to th	nly columns appli	

Reported by: Edward J. O'Neill & Robert M. Abmey

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES:

Use correct common name.

(2) DENSITY:

rtinent information no pecifically requested. st introductions here.

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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.

pđ	3-1757 Form3 (June 1945) Refuge	Tule Lain		BI	G GA	ME		0	alenda	r Ye	ar 1965	_	0.75	
	(1) Species	(2) Density	(3) Young Froduced			(j†)	ls			(5) sses	In	(6) troductions	(7 Estim Total Popul	ated Refuge	(g) Sex Ratio
	Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Ma.l.	Boor Loss of	Fringe agricultural fields comals, juniper-sage	Bat, 10		0			94 94	1971 1981 1995 1995	the state of the s	it in a second s	thanges ocor of the the de pruce swam trass prair and counts or srees sho	Bst , 75	30	
	nghorn telepe	Juniper-sage	Rot, 3		0	1 () () () () () () () () () (- 41	a da sed	in sus rd	istoi Intoi	10.20 10.20	offine 1020 Offine Register	Ret. 20	(1) (1) (2)	
		which stock was accurat.	anay fran <u>1. speciae</u> 1. <u>51</u>	Calify St	10	ao l	telec	94 94 94 94	2000 2000	the du	-24 -24 -245	Sibal - 188 Sibal	UTOUGORTEI UTER INTOT NOITAIUGOR	(6) (7)	
	fron	f soch species as determined	femiee-								978 910	illes Mort	SEE PARTS:	(14)	

Remarks:

- 17040

* Dogs during pheasant season

Reported by Edward J. 0'Hoill

INSTRUCTIONS

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Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisians white-tailed deer.
- (2) DENSITY: 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 total number of young produced on refuge.

The to the states of patrones

- (4) REMCVALS: Indicate total number in each category removed during the year.
- (5) LCSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIC: Indicate the percentage of males and females of each species as determined from field observations or through removals.

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(1) Species	(2) Density	ai ieus	bites		(3) ovala		20	D		(4) tion of		2017	192 ((5)
t, etc. cof North	white-tailed jackrabh	, leusing 1 eus es	8 2	i .i	erri o si	20 equ 2000	123	Share	e Trapp	ping	nge ped	ted		Total
te Antals	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Re-	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Fure Destroyed	tion
informa farlan	Cattall-Hardsten bulrush; 2900 acres	r animal st from Cound on	90 300 20 20	107100 107101 117110	ia by a qov	base baos baos bao	pre pre pre	1-8835 1-8835 1-8832). 1-8833)	2705 1317 * 26	1006) 130) 9)	161			8,000
oyote Asimut	Sage-Orneslands, Marsh 25,287 acres	es coort soch as	9 E7 . 08	30 8 20	25	torto to ta	129 V0 129 25	to and betteel	ens the					(Listeris) 20
ook Habbit	agric. 3,781 acres	skoodsee etc.	122	Dena. Regg	da su	indiana area	e 067 6 6	in tekle bookbrad	beel					250
stonted .	Sege-Gresslands & frimegric. 3.781 acres	ge blac	de de	iou tant:	.862 8 00	ted i bena	iones Tod	unan sil. Maada h	hine Jilm					H
e FInore	Sage-Orasslands & Harr 25_287 acres	hoars be	4	raber 1	96.50	a 1999 astraa	SCI ST TR	esertă a. Instat	0.885 1.58.2					le Data
accoon					_									Est. 10 Est. 150
kunk 100 10 48 armot 100200 yaa	Grasslands-fringe agr	e.	an tot	ale	50			ious yes.	9929 3 2015					Est. 250
easel	Sego, Greeslands, Ner 25,287 acres								-		0 107	120-012	1555	60

Indicate inventory method(a) used, size of sample area(s), introductions, and any other pertinent information not epochfically requested.

* 10.000

Reported by

Revert J. O'Neill

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES:

(2) DENSITY:

Use correct common name. Example: Striped skunk, spotted skunk, shorttailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

Applies particularly to those species considered in removal programs. 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, bottom land 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) REMOVALS:

REMARKS:

Reported by marked and betroogly

Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF JUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

32715

3 -1755 Form NR-5 DISEASE	
Refuge Tule Lake	Year 19. 05
Botulism	Lead Poisoning or other Disease
Period of outbreak 8-11 to 10-8-66	Kind of disease (1) Fowl Cholere (2) Lond Personing (1) Res', Snow, white-fronted gross, V.Suce
Period of heaviest losses 8-11 to 8-14	Species affected (2) Canada, white-fronted geese, pintail,&
Losses: (a) Waterfowl Actual Count Estimated (b) Waterfowl 000	Banday dacks, V. SwanNumber Affected(1)(2)SpeciesActual CountEstimatedWhietling swan10
(b) Shorebirds1080(c) Other85100	Canada goose10White-fronted2585010Snow goose12522505
Number Hospitalized No. Recovered % Recovered	Number Recovered None None None
(a) Waterfowl15Nome0(b) Shorebirds3Nome0(c) Other0	Number lost 200 25 (1) Probably fam Jeaquin Co. Dolta Area Source of infection (2) Shaller places in heating areas (Sump 1-A)
Areas affected (location and approximate acreage) Shallow water have at murch edge Sec. 4, 9, 10 and 21 Sump 1-A; approximately 100 acres	Water conditions Above mornal mounts and levels due to winter flood conditions
Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.	Food conditions Better than average
Stagmant water from 0 - 10"; Somp 1-A is a permanent water area which serves as an agricultura irrigation samp serving part of Elemeth County & Tule Lake Basin.	
Condition of vegetation and invertebrate life Fleating mate filementene algae covered 15% of Sump 1-A Remarks	Remarks Also, few Canada geese found dead on meste emspected pesticides losses (1) Incidence was in March & April; (2) Incidence was in February and March.
desklings. Disches confirmed by Bear River R search Station.	Disease (1) & (2) confirmed by Bear River Research Station and Calif. Fish & Game Dept. labs. Reported by: Edward J. O'Heill, Wildlift"Relegiet 53818-59

NR-6 Bureau of Sport Fisheries and Wildlife PUBLIC RELATIONS (See Instructions on Reverse Side) Refuge Tule Lake Calendar Year 1965 Visits 16624 b. Fishing c. Miscellaneous 53015 d. TOTAL VISITS 69639 a. Hunting 0 la. Hunting (on refuge lands) 2. Refuge Participation (groups) On Refuge Off Refum MANAGED BY TYPE HUNTERS ACRES NUMBER IN NO. OF NUMBER IN NO. Of TYPE OF ORGANIZATION Waterfowl GROUPS GROUPS GROUPS GROUPS 14474 10177 **INS** 1 60 Upland Game 1 Sportsmen Clubs 2150 13998* Ja N Big Game 120 Bird and Garden Clubs NE N Other Schools 4 125 N Freverts to 10177 after first two days of 10 720 Service Clubs Ringerant permanent blinds Youth Groups 3 80 285 Man-days of bow hunting included above Professional-Scientific R 110 23 865 Estimated man-days of hunting on lands adjacent to Religious Groups 1 195 ed by season or weather. A con 50 2 3745 refuge State or Federal Govt. 17 184 11 345 1b. Fishing (area open to fishing on refuge lands) MONTH Other (African Students) 1 TYPE OF AREA ACRES MILES 3. Other Activities Ponds or Lakes TYPE NUMBER TYPE NUMBER Streams and Shores Press Releases Radio Presentations 12 lc. Miscellaneous Visits Newspapers . 1 Exhibits 27 Recreation 10650** (P.R.'s sent to) Official 6190 Tulelake-Butte Valley Fair TV Presentations Est. Exhibit Viewers 1900 Economic Use 36175 Industrial 0 ** includes 7600 visitors stopping briefly while enroute to the Lava Beds National Monument.

3-1756

(Rev. 4/63) Reported by: J.T. Annear

(62) Reported by: d.T. Annear

an includes 7000 visitors storping briefly while erabute tothe latt beds Malianal Monarchi.

INSTRUCTIONS

Ture Frie- othe Waller

PORTI AND OREGON

Item 1: Total of a, b, and c, equal d.

ME-D

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDT - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

<u>Computing visits</u>. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item la: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

- Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.
- Item lc: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items lc and l. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items lc and l.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

3-1757 Form NR-7 (Rev. June 1960)

pđ

NONAGRIC JURAL COLLECTIONS, RECEIPTS, A. PLANTINGS

Tule Lake Refuge

Year 19 65

(1)

		(See			s and Re cks, tre		rubs)			Plant (Marsh - Aqua)		
Specie		Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
Balsos	and a second sec	20,020	C		Investe		8,800	Unit B-2*	13//A	50 Ac.		June	Peor	
Tall v	Den C-	1.000	B		Pacific Supply	8420.	0205			and the second				
Alter (R	2/23		78.		-						
Ree		2004		2/23		48,							14.7	
Merria		500#	R	0/0		480.								
Alaika		1855	P	6/6		25.								
thite elower		135#		6/6	•	112.5							ан ф. ф. 84.67-2	WTO Y
		ngang nang Ugang nang		an our			60 () 242	e Ci est			-		e spara a	
(-) -							0		Mixtore:	68 \$ Merrian	bluegrass			11 - 17019
(2) () = Co		ns al	nd $R =$	ops on H Receipta IS		-0	Remarks:		IT & Alaika	elover			
Mara Heda Food	sh and gerows d stri	age plant l aquatic s, cover ips, food Lantings	pate		80		0.0							76148

Reported by: Annear

be				
3-1757			(1)	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Form NR-7		NONAGRIC URAL COLLECTIONS, RECEIPTS, AN	PLANTINGS	
(Rev. June 1960)	Refuge	Tule Lake (Cont.)	Year 19 65	
and the second second				

	(See			s and Re cks, tre				(Plant Marsh - Aqua	ings tic - Upland	1		
Species	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method		(3) Total Amount	Location of Area Planted	Rate of Seeding or	Amount Planted (Acres or Yards of	Amount and Nature of Propagules		Survival	Cause of Loss
The felle beginning				t the		end of year							
Created wheatgrad					1999	8.170#							
Smooth Brome	1.050					1.050							
Sweet Clover	2.880	and the second s				2,880(8)						
Alte Fee	ue 400			an a saide	Sugar Line	150							1.1.1
Perennial Rye						100							

 (1) Report agronomic farm crops on Form NR-8 (2) C = Collections and R = Receipts 	Remarks:
 (2) C = Collections and R = Receipts (3) Use "S" to denote surplus 	
()) Use "S" to denote surprus	
Total acreage planted: Marsh and equatic	

Hedgerows, cover patches	
Food strips, food patches	
Forest plantings	

Remarks :				19.47
		-		
	 			-

3-1758

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Form NR-8 (Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Tule Iake Refuge

County Sinklyes

State Colifornia

	Perm	ittee's	Gove	rnment's S	hare or	Return	30.0	Green M		1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 /
Cultivated Crops Grown	PALI	Harvested Bu./Tons	Har Acres	Bu./Tons	4	Bu./Tons	Total Acreage Planted	and the state of t	nd Water- owsing Crops d Kind	Total
Hannchen Barley Utah winter barley	total a	cre la rife a ab	,bedn	4,529	1,633	11,280	1,728	botheo		
Pasture Kentucky bluegnad Butch white clove Alsihe clover		terio gainaro ivo ban adors seadi antas betraiq i	ald screage pla	allava distribution allava disti ino figurai ino figurai ino figurai ino figurai	50		abortrus bedo 20 A wors (20 20 A wors (20 20 20 20 20 20 20 20 20 20		bluegrass ite clover lever	80
	13.4	offisiel bis .qoip edd li eqoip be 			Dia	To de la	tus for the t	Fallow Ag. Land		
, fipter, (ranao 1 130 pe	taw box	revil – Brea	. fennou ad lo ad elda	00 , 000 , 1040	s the state	I - meo enir ynl g meed bestitte	Fallow	Ag. Land	None
o. of Permittees:	Agricultur	al Operatio	ons No	termor ad ag ag	Haying	Operations	None	LT.	Ag. Land	1 g
Hay - Improved	Agricultur Tons Harvested	al Operatio	ons No		Haying	Num	None None	LT.		18
Hay - Improved	Tons		Cash	ue	1 1 1	Num	lber	Grazin	g Operations	None
Hay - Improved	Tons		Cash	ue 1.	GRAZING	Num	lber	Grazin	g Operations	None
Hay - Improved	Tons		Cash	ue 1.	GRAZING Cattle Other	Num	aber mals	Grazin	g Operations Cash Revenue	None

*Naess

DIRECTIONS FOR PREPARING FORM NR-8 CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

<u>Cultivated Crops Grown</u> - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

<u>Permittee's Share</u> - Only the number of acres utilized by the permittee for his own benefit should be shown under the <u>Acres</u> column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the <u>Bushels Harvested</u> column. Report all crops harvested in <u>bushels</u> or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

<u>Government's Share or Return - Harvested</u> - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. <u>Unharvested</u> - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under <u>Cultivated Crops</u>, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year. pđ 3-1758

Form NR-8 (Rev. Jan. 1956) Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

State California Tale Lake Modoc County Refuge Green Manure, Cover and Water-Government's Share or Return Permittee's Cultivated Share Harvested Harvested | Unharvested Total

Crops	9 5.	7 /7	Lo at	D /0	-	D. (0)	Acreage		rowsing Crops	Total
Grown Insachen Barley Gaines Wheat*	ACTES	Bu./Tons		Bu./Tons	218 114	Bu./Tons	Planted 218 114	J'suga	eeded for revee 1965 - revee and	Acreag
	o In I pe Lal	ropa 1	gebox		topac	uoda To a Tabo	tati on ed naiq blan	F-11-		104
No. of Permittees:	Agricultur	al Operatio			t fig	Operations	1 A 2 4 4	Grazi	Ag. Land	None
No. of Permittees: Hay - Improved (Specify Kind)	Agricultur Tons Harvested	al Operatio	ons Cash Reven	ue	Haying GRAZING Cattle	Num	1 A 2 4 4	Tree of	Allos II.	Mana
Hay - Improved	Tons		Cash	ue (GRAZING	Num	ber	Grazi	ng Operations	None
Hay - Improved	Tons		Cash	ue (Gattle Other	Num	ber mals	Grazi	ng Operations Cash Revenue	None

DIRECTIONS FOR PREPARING FORM NR-8 CULTIVATED CROPS - HAYING - GRAZING

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Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under <u>Cultivated Crops</u>, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year. 3-1570 (4/54)

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REFUGE GRAIN REPORT

Refuge	Leke			Property in			Months of	lan. 1	through	Dec. 31	, 195
(1)	(2) On Hand	(3) Received	(4)		GRAIN D	(5) ISPOSED OF		(6) On Hand	PROPOSE	(7) ED OR SUITABI	LE USE*
VARIETY*	BEGINNING OF PERIOD	DURING PERIOD	Total	TRASTRO	Seeded	Fed	Total	END OF PERIOD	Seed	Feed	Surplus
Banchen-closed and treated	6,917	8,035	11,962		3,882		8,002	8,130	8,130		
Hannehon - Cleaned	an	372	372	e bibboas		202*	382	120		190	
Insuchen - Uneleaned	5,600	4,800	10,400	leaned&		486*	8,771	4,588	4,089		
Utah winter - clouned and tranted	8,500	table for a	2,800	nobe .	500		500	2,000	8,000		
Coines - eleaned &	8.175	883	8.030		1.070		1.670	1.109	1.109		
Gaines-Uncloaned	663	al of colum	CODE DELCE	Cleaned Treated			663				
Piroldne Barley Cleaned and treated	245	er all erau	845	663/	945	Tuelic en Cuelic en	245	will be listed will be listed fer, dhare cr	on NR-9,		
Screenings-Hannehen	נונו קיק דיד (ד) ויזאר	100	100	rately and red May Eado soy	specificati vheat, durt beans, etc.	100*	100	dent corn, s , proso mille , wheat, and	, combine soybeans		
EUX RO J	o shali pe b., barley- id-50 lb.	fin computer		o a bijan - 50 lb. gradarie	oy boint oy boint multiply (neilea) — 60 Ibi, m he cubic c	ee-B., corn fieb50 lis, patenta (cui	(627) — 70, 10 compose — 6 (1.) by 0.8 bi	wheat-		
Plan Birth Andrews	Report all	grain in bis	Tiola For	me brithe	a of this r	spont the	Following a	broximate i	icaghta of	1	We water

(8) Indicate shipping or collection points _____

(9) Grain is stored at _____

"Dird banding ""Pheasant fooding

Reported by: Henry Christensen

nit -bas det freit bie saose

(10) Remarks _____

*See instructions on back.

REFUGE GRAIN REPORT

G GLEG :

1.10

1.000

1 63

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 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. 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.

Y'CALO

- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.

NR-8a

This I should be a little

MARINES - CIGNIGO

- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

Munchenaleened qui				1991 1						
a14822 514-51			area area		Fad		Fainon	Seed .		Surphis:
19799199404 (30)	ON HAND	(3) (3)			neroren ar 199)		(8) (8)	Piloyon		
Rofugo						Months of	sn• y		Feo. 81	1000

BELOCE CEMPLE BELOBI

3-1979 (NR-12) (9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge

Tule Lake and Lover I

Proposal Number

Reporting Year

mar Ah

	INSTRUCTIO	NS: Wildlife Refuges Ma	anual. secs. 3252d, 3394b and	3395.		1	thru 4	1968	
4 ··· ·	Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	5/20-6/21	Mastard (Brassis spp.)	a Tule Laks buffer fields, dikes & berms	2,045	Alkanol emine malts of 2,4-D Dichlorophenoxy- meetic	1,323 lb. a.	.i5 1b. a.i.,	Nator Sgal/Ac.	Aircraft
A,	5/29-6/21	Mastard (Brassis syp.)	a Lover Elamath re- fuge farmlands in Unite 1, 4, 7, 8, 9, and 12	8,215	Alkamol amine nalts of 3,4-D Dichlorophenoxy- nectic	105 15. 8.1	.8 1b. a.i./A.	Mater 2gal/Ac.	Aircraft
3	5/29-7/8		Tule Lake and Lover)Elamath dikes and borns	913	Alkanol amine salte of 2,4-D Dichlorephenoxy- acetic	527 1b. e.s	.75 1b. e.i.//	Water 2 gnl/Ac.	Aircraft
4.	7/30-0/7	Chunda thistle (Cirsium arvense) Ball thistle (Cirsium valgare) Whitetop (Cardaria pubesco	Lower Klamath - Unit 2 dikes & berma	12	frysben (Trichlersbenzoic acid)	30 1b. a.	2.5 1b. a.1.//	Water 2 gal/Ac.	Ground rig Hond wand

10. Summary of results (continue on reverse side, if necessary)

Proposal numbers 1. 2. and 3 are of a continuing and more or less predictable character. The objective of these proposals has been to reduce and control the incidence of the target posts, thereby reducing compdition with crep plants and grasses for moisture, mutricents, and sunlight. The objectives of proposals NO. 4 and 5 are similar, although Trysbes is being used this year, for the first time. Proposal No. 3 is correlated with the seeding of grasses on Tule Lake and Lower Klamath dikes and berns each year. Proposals No. 1 and 3 are under contract which is let annually. Apparent kill in 1965, as in past years, was 95 percent. Cost: Equipment and labor - \$803.34; material - \$960.65; 3,558 acres treated for \$1,764.00; cest/sere - \$.50. Proposals No. 2 and 8 are the responsibility of permittees on Lever Klamath Refuge. Proposals No. 4 and 5 were spot treatments of target pests Canada thistle, ball thistle, and whitetop. Apparent kill was 90 percent. Cest: Environent and labor - \$282.75; material - \$280.50; 33 acres treated for \$563.25; cest/acre-\$17.07. Pronesal No. 6 was aimed at the target pest grasshoppers. At the end of seven days, a Hill of 75 percent was noted. Technical assistance and funds for materials were furnished by the Blant Pest Centrol Division of the U.S. Department of Agriculture. The total cost was \$2432.40 or \$1.35 per acre. The cost to the Dureau was: Labor - \$3.46; Equipment - \$17.18. NTERIOR--PORTI AND OREGON

	3-1979 (NR-12 '9/63)	Bure	au of Sport Fisheries PORT OF PESTICI				Refuge Tale Lake and L Proposal Number	Reporting Y	
	INSTRUCTIO	NS: Wildlife Refuges M	anual. secs. 3252d, 3394b ar	nd 3395.			5 thra 8	1965	
	Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Appli	Application Rate	Carrier and Rate	Method of Application
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8.			Lover Klamath (Laird's Londing)	81	Trysbon (Trichlorobonsoid neid)	52.5 lb. a.i	. 2.5 1b. a.i./	le gal/A	Ground rig Nami wand
6.	7/14-18	(Camula pellveid (Melanoplus devas tator)		1,800	Carbaryl (sevin)	1,125 16.	8 es/A	Water 1/2 gal/	Aireraft
	Late July Aug. 16	Aphid (Macrosipitam pisi)	Lover Klamath - 47-1 and 47-2	700	Parathion	175 15.	1/4 10. 01/A	Water 2 gal/A	Aireraft

10. Summary of results (continue on reverse side, if necessary)



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Lower Klamath National Wildlife Refuge 1965

I GENERAL

A. Weather Conditions

Refer to Tule Lake section for general weather conditions.

B. Habitat Conditions

1. Water*

Inflow and evacuation records on Lower Klamath were shattered in 1965. Storage was a problem even though water was evacuated at available capacity. By the end of January all farm units, excepting the north portion of Unit 7 which contained a winter wheat crop, were flooded. Operating levels of all water units were exceeded and maximum water surface elevations were exceeded on Units h, 7, 8 and 12A.

Flood conditions peaked in March with levels approaching within 1.5' of dike crest on Units 6, 7, 8 and 12A. Maximum water surface elevations were exceeded on all other units by .74' to 1.10'.

Conditions were well on the way toward return to normal when 2.26 inches of precipitation was received in June. This was 1.27 inches above the norm of .99 inches. The problem was compounded further in August when 1.90 inches of precipitation was received. It was not until late October that the last of what was considered excess flood water was removed and this was accomplished through the use of a 30 cfs portable pump borrowed from the Kern-Pixley Refuge.

By the end of December, pre-irrigation of Lower Klamath farm units, excepting Unit 12, was completed and dewatering operations initiated.

Table I is a record of inflow (recorded from Plant "D", Ady Canal and estimated average local runoff) and evacuation. Precipitation has not been accounted for; local inflow is estimated for an average year.

Table II is a record of the use of water on agricultural land in 1965.

Table III is a record of deviation from approved objective levels in 1965.

* Nuess

TABLE I

Lower Klamath Area

(Acre Feet)

		Inf	low				Evacuated
Month	Plant "D"	Cottonwood Creek	Sheepy Creek	Willow Creek	Ady Canal	Totals	Stateline Hwy Structure to Straits Drain
Jan.	18,351	800	1,350	300	0	20,801	11,958
Feb.	17,127	800	1,250	300	0	19,477	7,138
March	15,464	500	2,000	300	0	18,264	11,612
April	10,641		1,500		0	12,141	16,150
May	8,475		800		0	9,275	14,172
June	6,729		1,000		0	7,729	7,102
July	13,399		1,000		250	14,649	11,112
Aug.	13,653		1,000		632	15,285	13,182
Sept.	3,707	150	900		0	4,757	6,862
Oct.	8,224	350	1,400		0	9,974	5,726
Nov.	14,763	600	1,400	200	0	16,963	12,766
Dec.	12,769	800	1,400	200	0	15,169	12,226
TOTALS	143,302	4,000	15,000	1,300	882	164,484	130,006

1/ Estimated annual flow. Forty percent is used for irrigation above Unit 2 - net inflow into Unit 2 is about 60 percent of annual flow.

2/ Estimated annual average 65,000 acre feet

Total Inflow: 164,484

Evacuated: 130,006

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NOTE: 1965 precipitation 12.37 inches (Average 10.26 inches)

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Unit	Acreages	Date of Use 1/	Comments
l (F-1, 2, 3, 4, 5, 6, 7, 8)	714	January-April	Irrigation
l (F-9 & 10)	216	May-December	Flooded for control of quackgrass
3-F	700	January-June	Flooded for control of weeds and alkali. Dewatered for topog survey.
4F-1	1,200	December '64-April	Irrigation
4 F-2	600	November '64-April	Irrigation
7F-2	774	November 64-July	Storage-irrigation
9F-1	525	December '64-April	Irrigation
12 (NE & NW Fields)	2,314	Dec. '64-October	Storage (not possible to remove water in time for farming)

Use of Water on Agricultural Land - 1965

1/ Dates are 1965 unless otherwise shown.

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Unit	2	3	4	5	6	8	9	12-A	White Lake
Op. Level	4078.0	4077.0	4077.0	4077.5	4074.5	4074.5	4077.0	4075.4	4081.2
Jan. Dev.	+ .32 - None	+ .58 - None	+ .58 - None	+ .72 - None	+ 1.22 - None	+ 1.60 - None	+ .66 - None	+ .60	Water turned in
Feb. Dev.	+ .86 - None	+ 1.09 - None	+ 1.04 - None	+ 1.65 - None	+ 1.72 - None	+ 2.16 - None	+ 1.10 - None	+ .42 - None	No Gage
March De v .	+ .88 - None	+ 1.13 - None		+ 1.18 - None	+ 2.64 - None	+ 3.04 - None		+ 1.50 - None	+ .18 - None
April Dev.	+ .98 - None	+ 1.09 - None	+ 1.06 - None	Gage not Accurat	+ 2.80 - None	+ 2.88 - None		+ 1.50 - None	+ .04 - None
May Devo	+ .86 - None	+ .91 - None	+ .12	H H	+ 2.60 - None	+ 2.52 - None		+ 1.42 - None	+ .12 04
June Dev.	+ .16	+ .71 - None	+ .36 - None	11 11	+ 2.08 - None	+94	+ .22 - None	+ 1.00 - None	+ .20 - None
July Dev.	= .16 14	+ .70 - None	+ .36 - None	Dry "	+ 1.00 - None		-+ .16 - None		+ .04 56
Aug. Dev.	+ .30 - None	+ .42 - None	+ .50 - None	11	Dry bot ulism control	Ħ	+ .50 - None	+ .12 18	+ None - 1.00
Sept。 Dev。	+ .28 - None	+ .35 - None	+ .34 - None	92 97	Started floodin	Started g flood- t- ing f huntin season	- None or g	+ None 44	+ None - 1.12
Oct. Dev.	+ .22 - None	+ .34 - None	+ .30 - None	89 37	+ None 16	+ .42	+ .34 08	Draw down for storage	+ None 20
Nov. Dev.	+ .32 - None	+ .46 - None	+ .48 - None	n	+ None	+ .36 - None	+ .56 - None	n	+ None 20
Dec. Dev.	+ .32 - None	+ .50 06	+ .48 04	92 92	Draw down for storage	+ .50 - None	+ •52 - None	H H	+ .12 - None

Record of Deviations from Approved Objective Levels - 1965

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2. Food and Cover*

General conditions which prevailed in the Tulelake Basin existed in the Lower Klamath Basin. In January there was less snowfall and coverage than at Tule Lake. In the instance of upland bird habitat conditions the dikes and roads were more open and windswept of snow. Water areas were mostly frozen over the first part of the 1965 season. Only 40 acres open water, in form of water holes, was available for waterfowl using the Lower Klamath Refuge.

Some Brewer's blackbird control was necessary at the southwest edge of White Lake where winter cattle feeding attracted a flock of a few hundred birds. Serious outages occurred when the nearby Kingsley Field aviation homing device was used for a roost.

February 5-7 southerly warm winds moderated cold weather and all water units thawed but refroze the night of the 7th. After the 18th of February most water units were open to waterfowl.

Ring-necked pheasant feeding was initiated on units adjacent to Highway 161, the same as at Tule Lake Refuge, in January. Some eight miles of roads and dikes were graded bare through January 22 during which time 12,200 pounds of barley grain was spread to attract birds away from fast traffic.

Water problems accompanying winter floods brought considerable hardship to Lower Klamath also. All units south of the State Line except Unit 7 (green wheat) were inundated three to five months.

Share-crop barley left standing in Units 4, 9, and 12 all went under water resulting in considerable loss since Units 4 and 9 had received only 40 to 50 percent utilization prior to the previous fall migration.

Following good thaws in February and March, snow again blanketed all of the Lower Klamath April 6. The accompanying cold and wet conditions may have been tough on incubating Canada geese.

There was no serious depredation problem to neighboring crops during spring migration and migrants seemed to move on northward almost as rapidly as they arrived from the south.

Algae matting or floating coverage by filamentous material was worse than last year but winds and rain prevented a serious peak period. We estimated peak coverage as follows compared to other years.

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UNITS AND PERCENTAGE COVERED AT PEAK ALGAE BLOOM

Year	_2		_4	6	9	<u>12-A</u>
1965	3%	8%	30%	%	10%	25%
1964	1	10	50	65	10	25
1963	5	30	85	80	70	85
1962	2	5	75	30	25	60

Algae and floating pondweed debris fouled pumps, spillways and drains on both Tule Lake and Lower Klamath waterways.

The flooding of Unit I agricultural fields as practical last year was again helpful in reducing loss of young and molting Canada geese. Broods continued to make two to four highway crossings daily, but losses were low. The flooded agricultural fields offer escape and brood security which does not exist normally north of the highway. Most broods are killed in attempts to return to Unit 3.

Aquatic plant growth in water units was lower due primarily to greatly changed levels and floods. White Lake, after many years without summer water produced surprising growths of widgeon grass (<u>Ruppia</u>), sago pondweed (<u>Potamogeton</u>) and traces of Nevada sedge (<u>Scirpus</u>). Although the establishment of the area was late, seasonally (March) birds which hatched in the unit received considerable benefit from the aquatic plant production. What a remarkable change from former summer seasons when the unit was bone dry and grazed to the limit! This 1,154 acre tract when flooded contains 914 ideal islands.

Green wheat (Gaines) in Unit 7 was of major importance since all for a structure other tracts were under water during spring migration. In early March use was recorded. Over 15 days the following use days occurred on the green crop: Ross' goose, 17,500; snow goose, 34,200; whitefronted goose, 236,000; Canada goose, 13,150; coot, 33,500; American widgeon, 164,000; pintails, 5,850; and cacklers, 20,500.

Good fortune and water management combined to make field portions of Units 4 and 9 available in time to produce grain crops (share crops). Since Units 3, 7, and 12 could not be drained, we were almost 3,000 acres short of grain compared to the conditions of the previous year.

The wheat crop in Unit 7 received hard frosts before maturity; however, Canada geese used it heavily from mid-summer on. Area agricultural grain harvest went smoothly with little loss to ducks. Yields on refuge tracts approximated those of one year ago. By November 15 harvest was complete in the basin. Refuge share grains were almost fully utilized by birds before the end of November.

At the beginning of hunting season, additional units were flooded including the south half of Unit 6 and all of Unit 8. In December, Units 6 and 8 were drained and the field portion of Unit 4 (barley stubble) flooded.

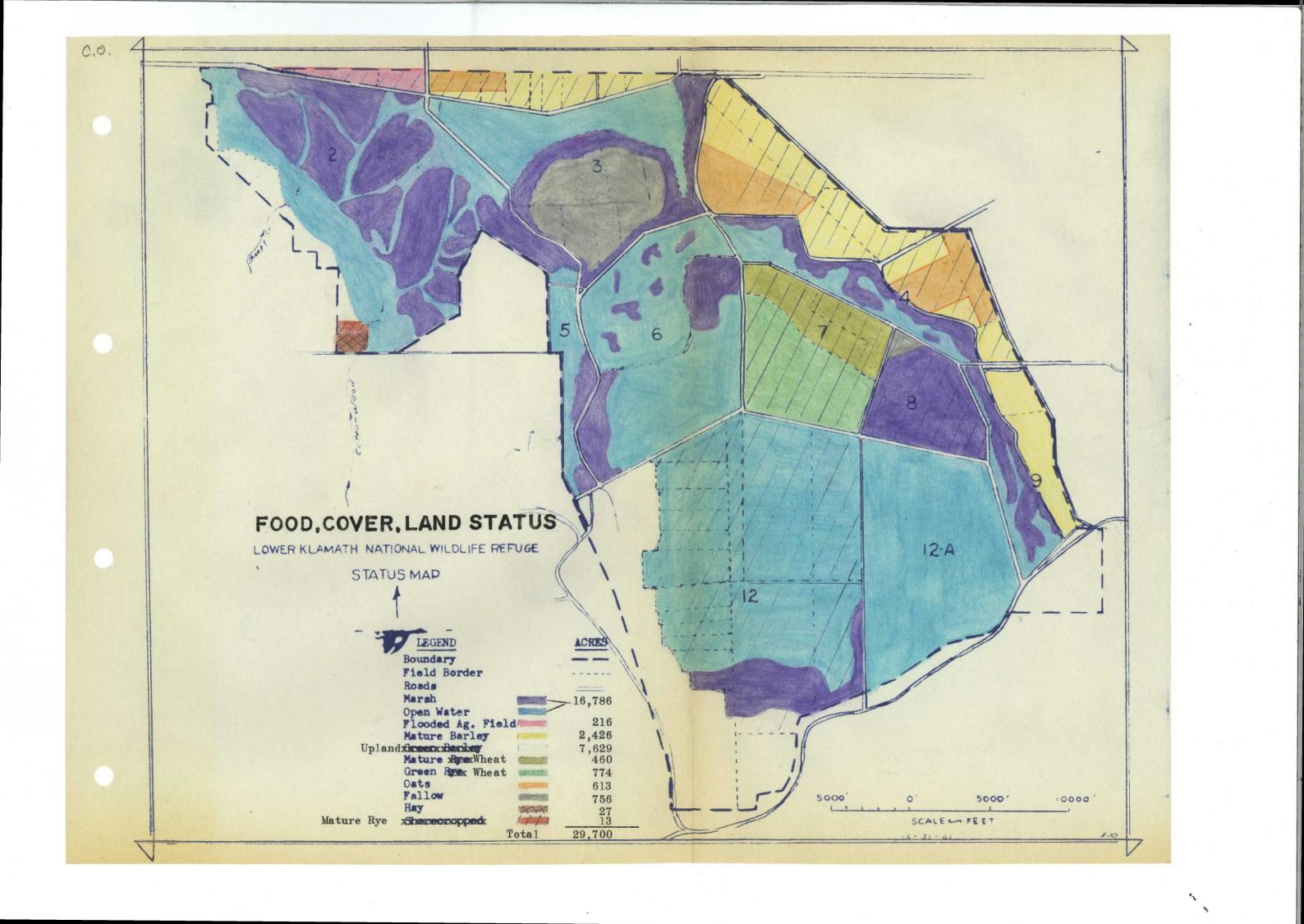
Two inches of snow blanketed the area November 21 and water units first froze over on November 25. The first days of December saw $2\frac{1}{2}$ to 3 inches of ice on all units. This condition made for considerable stress and forced more birds to leave the country.

Late in November irrigation spillage from Hot Creek was received in the new Miller Lake Unit and partial (75%) water coverage took place.

Cover and habitat conditions in the Sheepy East (farming), Sheepy West (pasture) and the new Straits Unit (farming) did not undergo any significant change following enactment of the Kuchel Bill.

To improve habitat, bulrush seedings were initiated (see: FIELD INVESTIGATION OR APPLIED RESEARCH) in Units 2, 6, 12, Miller Lake and White Lake.

Tall clover and sunflowers continue to come back and establish on levees surrounding the various units and should prove valuable to upland birds.



II WILDLIFE

A. Migratory Waterfowl*

Early in January Canada geese paired as mentioned in the Tule Lake section.

Spring arrivals (snow geese) showed up February 8 and promptly moved to Lower Klamath Basin after a brief stop at Tule Lake. The vast acreage of inundated croplands provided resting, loafing, and feeding habitat in unprecedented amount. Units 4 and 9 share-crop grains left standing at the time of last winter's flood were estimated 30 percent lost. At Unit 3 ducks and geese swam contentedly about in unharvested rye grain during February and March.

Whistling swans congregated in the Straits unit as they habitually have done each February. Newly flooded grain fields prove a real attraction.

Forms NR-1 and NR-1A cover the general pattern of migration and peaks. On March 7 some 20 common egrets showed up at Unit 9. An Emperor goose accompanied 200 Ross' geese foraging on the Unit 7 green wheat during March.

By April 20 colonial nesters were active at Unit 2 with some 300 pelican nests containing 2-3 eggs; 60 cormorants with 2-4 eggs and 30 great-blue heron nests with young and eggs.

Gulls nested at Units 3 and 4 as in former years. Observations indicate the June 20 hailstorm may have killed a large (200) number of young in the colony at Unit 4. As early as March 31 we observed 1,300 on colony at Units 3 and 4.

Cormorants did not nest on Unit 9 this year.

Sandhill cranes were first noted by rancher Bill Heitman at Coyote Point this spring. The species remained in the basin all summer. It is possible nesting occurred in the Sheepy West unit; however, this was never confirmed. In mid-June a total of 12 cranes were present at Units 5 and 6.

The mid-February survey of Canada goose breeding pairs was up substantially as well as the number of non-breeders. Despite this, production was down (63%) to the lowest in four years. Units 2, 3, 4 and 9 and Sheepy West continue to produce the most broods. First brood of the season (7) was observed by Foreman Christensen at Unit 9. High waters did not hinder nesting according to observations. Wet, cold spells in April and May probably claimed a substantial number of goslings especially in the large, combined broods. Ringbilled and California gull depredations on geese were negligible compared to other years.

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Breeding pairs of ducks were down 60 percent from the 1964 season. Total ducklings as of July 1 was off 30 percent. Late nesting and renesting due to inclimate weather did not substantially increase the total production except in the case of redheads which improved over the 1964 hatch. A severe hailstorm, covering about 1,500 acres of Lower Klamath (Units 2 and 4) June 20 shredded leaves from willows and piled up three inches of hail in two minutes. The storm probably accounted for loss of some ducklings out on Sheepy Lake. 10

Eared grebes renested (second stage?) through August. Preferred colony sites were in Unit 3 and 12-A.

The first lesser yellowlegs of the season showed up March 3. Avocets arrived March 3 also. Caspian terns were first seen April 14.

B. Upland Game Birds*

Ring-necked pheasant winter feeding was again carried out in January (see: <u>Food and Cover</u>). The late winter-early spring population tally indicated the lowest population of breeding birds in years. Nesting results were poor due to wet, cold weather in June and renesting left much to be desired. As in the case of Tulelake Basin, hen-cock ratios looked good in the fall months, however, total population was comparatively low when the season opened in November.

Valley quail were observed along the south boundary and population status was little changed over the number present in 1964.

C. Big Game Animals*

Mule deer were somewhat restricted to the main levees due to the flood conditions which prevailed. Units 2 and 5 were favored areas and several new fawns were born in the marsh areas. Hunter harassment during pheasant season was not as severe as at Tule Lake; however, there was considerable confusion the first day of pheasant season.

Antelope watered regularly at Units 12 and 12-A and occasionally ranged out into the marsh area of Unit 12 as the floodwater was evacuated. A high population count of 40 was noted adjacent to the Lower Klamath Refuge in August.

D. Fur Animals, Predators, Rodents*

Coyote numbers were considered at a very low population stage. Flooding of much of the area certainly restricted range and habitat. The jackrabbit population has become progressively lower each year and this species locally may have been strongly influenced by the rabbit population.

Raccoons continue low in total population numbers; however, tracks and signs indicate there has been a steady increase over the past few years. Trappers failed to capture any raccoons in traplines during the winter-spring trapping season. Favorite haunts were Units 2,3 and 9.

Skunks decreased in the area due presumably to winter flood conditions. In the plots established for nesting success surveys the amount of nest depredation by the species, compared to activity of other years was very low.

Feral cats were hard pressed for habitat and range because of the flood. The population underwent considerable decrease evidenced by an all-time low in numbers observed. State wardens, using refuge permits, continue to shoot and dog the two latter species, whenever encountered.

Weasels were observed a number of times at Units 2, 3, 4 and 5. There were three known road kills near Unit 2 and such instances in the past few years have been rare.

Bob cats are low in total numbers and are only incidental on this refuge. The Chalkbanks and Unit 12-A areas were frequented more than other parts of the refuge.

Marmots along the south boundary of Units 12 and 12-A showed slight population decline again during 1965. Every unit on the area has a few of these animals on the levees and ditchbanks. First spring note of the species following hibernation was February 13 when Assistant Refuge Manager Nuess observed one on the primary dike.

Muskrats continue to decrease. The population is at its lowest in 20 years. Winter water importations undoubtedly worked a hardship. Our over-all water management program and vegetative climax situation are the greatest controlling factors. Some 300 trap-days in Unit 9 by one of the permittees netted about 30 rats during February.

Cottontails and jackrabbits continue downward population trends. Jacks especially were at lowest numbers in years.

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E. Hawks, Eagles, Owls, Crows, Ravens and Magpies*

There has always been a greater number of bald eagles on the area in the writer's experience; however, when use days were tallied, we found the golden eagle to be more prominent than believed. Bald eagles tallied 455 use days while goldens were here 294 days. Peak counts fail to show this fact.

Short-eared owls appear on the increase after three years of quite low numbers compared to the high population in 1961-62. In March one adult bald eagle found at Unit 2 was sent to Patuxent Researchers for pesticides monitoring. No report is available because of problems with the gas chromatograph.

A single Cooper's hawk frequented the Unit 2-3 levee area during December.

F. Other Birds

No significant change noted.

G. Fish*

There were mild losses of tui chubs at the inflow and outflow of Unit 3 corresponding to the time and losses at Tule Lake.

The Straits Drain each year carries a tremendous population of chub at the intake north of Highway 161. This year was no exception.

Gill net collections in the Unit 3 area by Health Education and Welfare researchers disclosed similar take and species as last year (chub, bass, perch).

Pelican and cormorant regurgitations examined at the Unit 2 nesting colonies indicated almost exclusive use of chubs with a few sunfish.

H. Reptiles*

Non-poisonous snakes have become rare on refuge units where historically they were abundant. The decline over the past four years would indicate some problems involving food chain or habitat.

data?

Supposition ? Or substantiated by

*0'Neill

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Rattlers were observed on two occasions along the south boundary.

Turtles, inhabiting only the Unit 2 area, seem to maintain a rather stable population. Three dead were found along the east edge of Sheepy Lake during duck sickness surveys in August. It is not known if this is an unusual loss or not.

I. <u>Disease</u>*

Fowl cholera was first noted in the area in February (see also Tule Lake section DISEASE). Five (5) dead snow geese were picked up February 25 (one on Unit 12-A; four on Unit 6). Laboratory tests confirmed <u>Pasteurella m</u>. was involved. March 7, a single snow goose was picked up on Unit 12-A. A single snow was noted in Unit 2 (Sheepy Lake). Incidence and recoveries were where the bird concentrations rafted at night supporting the contention it was perhaps contracted before migration into the basin. We estimate 30 snow and whitefronted geese and five whistling swans were lost to cholera during February and March. Inaccessibility of much of the area due to ice and mud plus the activity of predaceous species under stress conditions always make our late winter disease surveys and pick ups inadequate. Both Bear River and California Department of Fish and Game laboratories examined and confirmed cholera through flouriscopic and bacteriological tests.

Lead poisoning claimed an estimated ten snow and Canada geese, ten whistling swans and an undetermined number of ducks in late winter.

Botulism losses occurred in early August at Unit 12 following reintroduction of water which reflooded a portion of that unit. Some 4,000 ducks, geese and shorebirds were affected by the epizootic malady before the unit could be pumped back down. Had the water, imported from Tule Lake sumps at the time, been stored in other units with confining shorelines and dikes it is doubtful if botulism would have occurred.

Because of labor shortages in the "biological department", birds were not crated and transported to the Tule Lake headquarters hospital this year. Antitoxin was administered in the field on sickness-free units (12-A and 3) and either held in portable crates or released under the shelter of shoreline vegetation. The supply of antitoxin became depleted in mid-August. All sources were canvassed and it developed that supplies are no longer being manufactured. In the interim treatment reverted to the old method of fresh water flushing with syringe and releases into fresh water areas.

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Of interest is the fact 300-500 ducks and shorebirds were lost in the Unit 2, Sheepy Lake area in late July and early August. Similar to the incidence at Tule Lake, birds did not respond to botulinus antitoxin injections. California Fish and Game laboratory Technician Brian Hunter visited the area on one occasion and collected several ducks and blood samples for analysis. Enroute to Sacramento refrigeration proved inadequate and tests were unsatisfactory. We then obtained 5cc blood samples from two pintails, one shoveler, one mallard, and one lesser scaup found sick on Sheepy Lake. Also, the following frozen specimens were shipped by air express: three pintails, one mallard duckling and one bufflehead duckling. Tests by the state showed negative for botulism in all instances. We are at a loss to explain the cause of death. In two weeks the sickness was over. Some of the specimens sent to Bear River showed trace amounts of clostridium in bacterial tests.

III REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development*

On March 12 a three-year program of agricultural land development was completed on Lower Klamath Refuge. On that date dikes and other facilities necessary to permit impoundment of water on all refuge farm units for quackgrass were finished.

The most economical and accepted method of controlling quackgrass in the Lower Klamath area is by flooding infested farm units for a growing season. In order to maintain agricultural units under water, fields must be levelled, enclosed within perimeter dikes and toe drains excavated to protect adjoining farmlands from seepage. Although improvements and refinements in field irrigation and drainage will continue on Lower Klamath National Wildlife Refuge, one phase of development has been completed and all refuge fields can now be flooded for quackgrass control if need be.

Two miles of fence along the south half of the west boundary of Lower Klamath Unit 2 was completed.

Weeds were burned, dike slopes shaped and the road crowned on the south side of Units 6, 7, and 8. The slopes were then seeded to grass.

Considerable development and maintenance work was done during the year directed toward improving irrigation and the better handling of flood and drainage water.

A major activity was the raising of low spots, approximately one foot, in the 6-12 and 7-12 dikes to prevent their being topped by rising water during extreme flood conditions such as occurred during the winter of 1964 and 1965.

Fifteen inch CMP's with gates were placed in fields 1F-2, 3 and 5 and a 24" CMP with gates was placed in fields 1F-1 to provide better and faster drainage of these fields.

A 24" CMP with gate was placed in the Ady Canal to provide water for the operation of the 1F-9 and 10 pump. This pump is being used to flood 1F-9 and 10 for quackgrass control.

A 36" CMP with gate was placed in the southwest corner of 4F-1. This pipe empties into the Central Canal between Units 3 & 4. The water control structures from Units 3 and 4 into the Central Canal can be closed thus providing deep drainage for fields 4F-1 and 2.

*Christensen

The 22-B dragline was used to dig 11,600 lineal feet of drain for the Bureau of Reclamation in the Sheepy East section of Lower Klamath. A portion of Sheepy East is being flooded for quackgrass control causing a seepage problem on the lessee to the east. The drain was dug to control the seepage from this area.

Rebuilt the Unit 6 contour dike (2.6 miles) damaged during the 1964-65 flood. This dike was rebuilt to elevation 4081' and resloped (5-1) on the south side and 3-1 on the north side. It is now ready for resurfacing and riprapping.

Completed puddle trenching of Unit 5 east boundary dike (approximately 15,500 lineal feet) and built 15,000 lineal feet bringing the dike to elevation 4083' with a 16' top and 5-1 slope on the west side.

Rebuilt the 4-9 bridge. A steel frame work was designed for this bridge using I beams from a surplus hanger building. This steel frame work was then decked with 3" x 12" planks.

If there was any question in anybody's mind whether it would withstand the load it was designed for, it was dispelled when the Lima shovel, on a lowboy trailer, (117,000 lbs.) was moved across it.

B. Plantings

1. Aquatics and Marsh Plants -Refer to V, FIELD INVESTIGATION or APPLIED RESEARCH

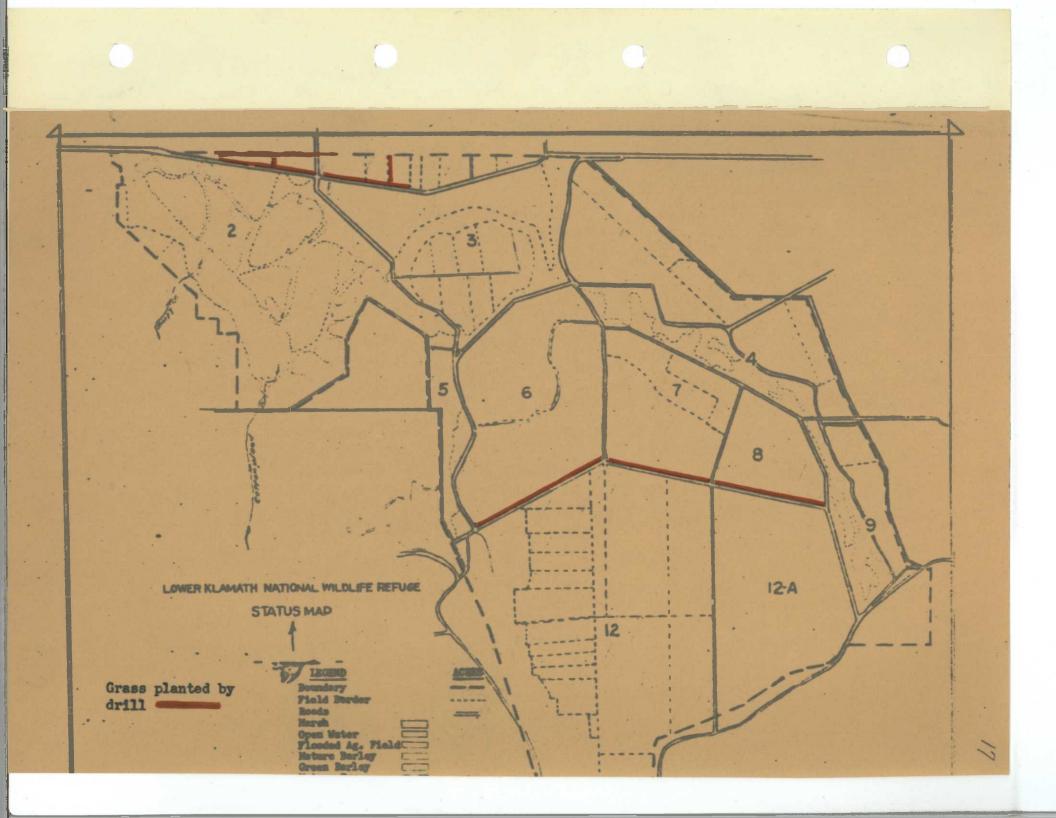
3. Upland Herbaceous Plants*

The first planting of the season got underway on the 3rd of February when the north, south, and west dikes of Unit 1, F-9 and F-10 were seeded utilizing a mixture of 55 percent tall wheatgrass, 35 percent alta fesque, and 10 percent perennial rye. Twenty-five (25) acres were drilled at the rate of ten pounds per acre.

During the early part of March, twenty-eight (28) acres of dike along the south side of Units 6, 7, and 8 were seeded at the rate of 17 pounds per acre, using a mixture of 62 percent tall wheatgrass, 19 percent alta fesque, and 19 percent perennial rye. Application was by means of a drill.

On the 15th of March, the lateral along the south side of Unit I, F-6, F-7, and F-8, and the east bank of the F-6, F-7 drain were seeded. Four and nine tenths (4.9) acres were drilled at the rate of 24 pounds per acre. The mixture was comprised of 55 percent tall wheatgrass, 35 percent alta fesque, and 10 percent perennial rye. Refer to following map for location of plantings.

*Annear



4. Cultivated Crops*

Production records on sharecropped and refuge farmed lands for 1961 through 1965 are tabulated below. Only barley and oats are included since these were the principal crops grown.

Year	Acres	Crop	Bushels Produced	Bu. Per Acre
1961	6,145	Barley	269,165	43.8
	$\frac{4,135}{10,279}$	Oats	$374,584 \\ 643,749$	90.6 62.6
1962	4,614	Barley	255,537	55.3
	3,090	Oats	_261,577	84.6
	7,704		517,114	69.9
1963	3,440	Barley	238,916	69.4
	2,373	Oats	191,853	80.9
	5,813		430,769	74.1
1964	3,785	Barley	282,257	74.5
	2,228	Oats	176,628	79.2
	6,013		458,885	76.3
1965	2,426	Barley	191,370	78.9
	613	Oats	33,636	54.9
	3,039		224,961	66.9

Total refuge acreage under cultivation in 1965 was reduced by approximately 40 percent because of flood conditions. It was not possible to remove water in time for farming on Unit 12 containing 2,347 acres and Unit 3, F-1 containing 700 acres.

The oat crop of permittee Cecil Carland on Unit 4, F-1 and the refuge farmed Gaines wheat crop on the north portion of Unit 7 were badly damaged by frost and hail.

A 30 cfs portable pump, borrowed from the Kern-Pixley Refuge, was employed to remove excess flood water from the south portion of Unit 7 so that it could be farmed. Gaines winter wheat was planted by refuge personnel by September 14. The 774 acres of green browse produced on this unit was heavily utilized by both ducks and geese and provided some excellent hunting.

The following charts give a complete breakdown of the production status for 1965 of lands on Lower Klamath. Production totalled 236,856 bushels, 157,121 bushels of which were the cooperator's share and 79,735 bushels the Government's share. The Government's share was left unharvested for waterfowl use.

	SUMMAR	Y OF I	PRODUCTIO	DN		
		ON				
SHARECROPPED I	LAND -	LOWER	KLAMATH	REFUGE	-	1965

		-	or's Share vested		nt's Share vested
Code	Сгор	Acres	Bushels	Acres	Bushels
1/	Hannchen Barley			671	40,683
2/	Wocus Barley	1,289	113,791	312	25,702
3/	Bonneville Barley	60	3,229	30	1,500
4/	Trebi Barley	64	6,465		
5/	Park Oats	613	33,636		
<u>6</u> /	Forax Rye			13	350
	TOTALS	2,026	157,121	1,026	68,235
	HAY	27	40 tons		

TOTAL ACRES 3,079

REFUGE FARMED LAND - LOWER KLAMATH REFUGE - 1965

Crop	Unit	Acres	Bu./Tons	Average Bu./Ton Per Acre
Gaines winter wheat	7-N. Field	460	11,500	25
Gaines winter wheat (Green Browse)	7-S. Field	774	387 Tons	.5 ton

Total refuge acreage under cultivation - 1965 - 4,529 1/

 $\underline{1}$ / Includes quackgrass control on sharecropped land

SHARECROPPED LAND - LOWER KLAMATH REFUGE - 1965

	U	F I		BARL	EY			OAT	S		HAY	r	R	ΥE	Quack grass	Ave.
Cooperator	N E I L	L	Sh	ator's are Bushels	Sh	ment's are Bushels	t's Cooperator's	Sł	ment's nare Bushels	Shar	ooperator's Share	Gov [†] t Share Ac. Bu.	con- trol acres	bu/tons per acre		
Long	1	2&3 2&3	120	6,810 ^{2/}	60	3,3501/										56.7 55.8
Robinette	1 1 1	4 4 9&10	64	6,4654/	32	2,333 ^{1/}									216	101.0 72.9
Liskey	1	5&6	124	$10,396^{2/}$	62	5,0322/						31.00			1.1	82.9
Moore	1	1	60	$3,229^{3}$	30	$1,500^{3/}$										52.5
Suty	9 9		350	34,300 ² /	50 125	$4,870^{2}/$ 11,800 ¹ /									100	97.9 94.4
V. Huff	4 4	2 2	120	9,466 ²	200	15,8002/	280	12,243								78.9 43.7
Tulana	1 1	7&8 7&8			54	3,2001/	108	12,7685/								118.2 59.2
Carland	4 4 4	1 1 1	575	52,819 ^{2/}	1	20,000 ^{1/}	225	8,625 ^{5/}								91.8 50.0 38.3
McKay	2 2	2 2									27	40	13	350		1.4T 26.9
TOTALS			1,413	123,485	1,013	67,885	613	33,636			27	40	13	350	216	

A comparison of grain crops provided waterfowl including grain grown on refuge farmed lands as well as sharecropped lands from 1961 through 1965 is tabulated below. 21

Year	Acres	Bushels	Bushels Per Acre
1961	4,350	210,519	48.3
1962	2,781	156,349	56.2
1963	1,681	124,506	74.0
1964	2,147	150,075	69.9
1965	1,486	79,735	53.6

C. Collections and Receipts

1. Seed or other Propagules*

Harvest of alkali bulrush seed for development of marsh areas was undertaken in October similar to the collection by combine harvester in 1964. An estimated 40 acres in Unit 5 yielded 220 pounds per acre (8,890 lbs.) of cleaned seed. (Last year 30 acres yielded about 11,000 pounds cleaned seed).

Some 200 pounds of bulrush seed was treated, germinated and shipped to Malheur Refuge. About 70 pounds of the same seed was sent to Del Norte County Extention Agent for trials.

2. Specimens*

As indicated elsewhere in this report (Disease) a number of laboratory and research specimens were collected and submitted to various cooperators.

Part of the 39 live geese donated to the Portland Zoo in December were retrieved as cripples on Lower Klamath. Also, part of the live goose donation to the Canadian Wildlife Service came from Lower Klamath Refuge.

Whole duck specimens have been salvaged throughout the hunting season in cooperation with research for the wing analysis studies at Patuxent.

Cooperation with Health, Education and Welfare laboratories at Klamath Falls for water quality studies included collection of two each redhead, mallard and gadwall ducklings on the study areas for pesticides monitoring.

An albinistic horned lark collected in the Indian Pits area by Manager Trainee Pierce was deposited in the refuge collection in May.

Several shovelers, night herons, etc. were sent to the National Museum Bird and Mammal laboratory in May for alcohol specimens.

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D. Control of Vegetation*

A total of 327 acres were sprayed for noxious weed control at a cost of \$2,013.78, or \$6.16 per acre. Principle herbicide used was the amine salt of 2,4-D.

For the third consecutive year Laird's Landing was given spray treatment for the control of Canada thistle. The past two years 2,4-D was used, and this year trysben, a more effective weed killer, was applied. As was expected the concentrations of this weed were much less this year than in past years. To illustrate:

1963	90 acres	heavily infested
1964	80 acres	moderate infestation
1965	21 acres	scattered spots

With the use of trysben, we look forward to an even greater reduction in both acreage and vigor of this pest plant during 1966 and ensuing years, and hope that only a token effort will be needed to eliminate Canada thistle from this area.

For a complete breakdown of refuge vegetation control activities see Table I; permittee activities Table II.

IV RESOURCE MANAGEMENT

A. Grazing**

Three permits were in effect in 1965. Grazing fee was \$1.00 per AUM.

Permittee		AUM's	Cash Revenue
Heitman		743,44	\$ 743.44
McKay		779.02	779.02
Laird		686.77	686.77
	TOTALS	2,209.23	\$ 2,209.23

C. Fur Harvest***

(See also: Tule Lake section). Trapping was poor generally on the area due to high water and ice conditions. The overall population of muskrats decreased drastically in Units 3, 4 and 9. Two trappers working the area obtained only 744 rats from December to March.

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TABLE I

LOWER KLAMATH

PEST PLANT CONTROL

Species	Mixed Weeds*	Mixed Weeds*	Whitetop (Cardaria pubrscens)	Mixed Weeds*
Control dates	7/29-9/7	7/20-9/7	6/22-7/1, 8/19-20	5/28, 5/29, 7/3
Growth stage	Various	Various	Full bloom	seedling
Acreage	30	6	51	240
Location	Laird's Landing Unit 2	Unit 3	Unit 1, Strait's Drain, Huff lease	Unit 1, 6, 7, & 8
Chemical	Trysben	Trysben	Trysben	2,4-D Amine
Diluent	Water-15 gal/Ac.	Water-15 gal/Ac.	Water-15 gal/Ac.	Water-2 gal/Ac.
Rate (lbs/Ac.)	2.0	2.0	2.0	. 50
Method	Ground rig Hand wand	Ground rig Hand wand	Ground rig Hand wand	Aircraft
<u>COST</u> : Material Labor & Equip. TOTAL Cost/Acre Apparent Kill	\$ 255.00 255.90 \$ 510.90 \$ 17.03 95 %	\$ 51.00 51.18 \$ 102.18 \$ 17.03 95 %	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	
Actual Kill in Past Years	90 %	90 %	90 %	95 %
Remarks:	Canada thistle (Carsium arvense) primarily	Perennial sow thistle (Sonchus arvensis) primarily		Nettle(Urtica) Mustard (Brassica) Bassia(Echniopsilon Lambsquarter (Chen- opodium)

Permittee	Farm Unit	Acres Treated	Insect or Weed Controlled	Material used per acre	Date of Application	Method
			3.00			
Long	1F-1, 2	120	Mustard, etc.	3/8# 2,4-D	Late June	Aircraft
Robinette	1F-4	None				
Liskey	1F-5, 6	180	Mustard, etc.	1/2# 2,4-D	Late June	Aircraft
Moore Bros	s. 1F-1	90	Mustard, etc.	1/4# 2,4-D	June 22	Aircraft
V. Huff	4F-2	$\begin{array}{c} 200\\ 400 \end{array}$	Aphids Mustard, etc.	1/4# parathion 1/2# 2,4-D	Late July Late June	Aircraft "
Tulana	1F-7, 8	None				
Carland	4 F -1	1,200 500	Mustard, etc. Aphids	1/2# 2,4-D $1/4#$ parathion	Late June August 16	Aircraft "
McKay	2F-2	None				
Suty	9	525	Mustard, etc.	1/8# 2,4-D	June 4	Aircraft
TOTAL		3,215			- 1997 () , , , , , , , , , , , , , , , , , ,	

TABLE II

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V FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report*

Marsh Development

The program of re-establishing agricultural units as interim productive marsh areas during soil leaching periods and developing additional marsh habitat through bulrush seedings evolved to a full-scale operation this year. Through the techniques developed, we were able to aerial seed into flooded units 11,000 pounds of alkali bulrush (<u>Scirpus p.</u>) which had been pre-germinated. Parts of Units 2, 6, 12, White Lake and Miller Lake (approximately 5,000 acres total) were covered. Response in the Miller Lake, White Lake and Unit 6 has been good with some of the new seedlings even producing seed heads by early September.

Unit 8, planted to bulrush three years ago as an interim marsh-agricultural area, has progressed to the extent it was necessary to 'doze channels and 600-odd small mounds to open up and enhance the area for waterfowl use. This area of 800 acres "pure" stand of alkali bulrush is possibly the greatest single growth in the western states--surely the most outstanding seeded production.

Dike Planting Evaluation

The cooperative worker (Martin Shea) did not submit a progress report for the year 1965.

Pesticides Investigations

Cooperative work with James O.Keith of Research was continued with specimen collections, pelican nesting-survival studies and banding similar to the 1964 program. (See lab report on following page).

Banding

California Fish and Game personnel operating on Pittman-Robertson funds and under the refuge permit accomplished fall pre-season duck banding quotas as indicated in the Tule Lake section. No goose banding was undertaken on the area this year.

Gulls (605) and great-blue herons (10) were again banded at Units 2, 3 and 4 by refuge personnel. Some 325 pelicans were banded as indicated under Pesticides Investigations.

Grasshopper Control Program

See Tule Lake section.

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Chlorinated hydrocarbon rasidues in white pelican tissues and eggs from Lower Klemath National Wildlife Refuge Nesting Colony - 1964

	-	Res I dues I	n ppm	Heptachlor Epoxide	
COLLECTIONS	Tissues #/	DDT and Matabolites	Dieldrin		
Birds shot on nests - 5/3/64					
1 9	Fat	14.73	0.45		
	HLKA	1.58	0.27	TE	
	Brein	0.13	-	T	
	Overles	2.44		T	
	Eggs (2-addla)	,1.03	0.03	т	
20	Fat	11.72	1.35	-	
	HLKM	9.28	1.09	-	
	Brein	0.96	T	T	
	Egg (1)	0.39	0.08	•	
30	Fat	6.75	0.75	-	
	HLKM	2.35	: T	т	
	Brein	1.51	-	T	
	Egg (1-w/ambryo)	2.83	1.90	T	
Abandoned Eggs					

collected - 6/23/64

(10-eddle or infortile) 1.95 0.13

T

Birds found dead - 4/3/64

1 9

UK.

Fat	46.40	3.50	-
HLKA	1.18	0.25	-
Brain	0.30	T	-
Ovaries	29.40	7.60	-
Egg yolk in oviduck	1.15	0.29	т
Fat	13.85	1.02	-
HLKM	0.80	0.02	T
Brain	0.37		-
Ovaries	0.72	0.02	-
Egg yolk in oviduck	1.43	0.19	-
1971년 - 1922년 -			

2.8

HLKM indicates a composite sample of 5 g each of heart, liver, kidney and breast muscle.

b/ T indecates a small but undetermined amount of heptachlor epoxide and less than 0.02 ppm dieldrin.

VI PUBLIC RELATIONS

A. Recreational Uses

Refer to NR-6 (3-1755) Public Use.

B. Refuge Visitors - Refer to Tule Lake Section.

C. Refuge Participation - Refer to Tule Lake Section.

D. Hunting*

<u>Waterfowl</u>: During the straight 90-day waterfowl season, October 9 to January 6, an estimated 11,200 hunters harvested approximately 14,000 birds for an average of 1.26 birds per hunter per day. Ducks harvested averaged .87 per hunter and geese .45 per hunter per day. Crippling loss was an estimated 2,200 birds.

Total kill and hunter use increased over 1964, although waterfowl use days for the September-December period was substantially down from the same period last year. It is thought that this might be due to Unit 12 and Fairchild Island, approximately 3,000 acres and both in the closed area, not being farmed because of dewatering problems. The necessity of the birds having to move out of the closed areas for food made them more vulnerable to the gun. This movement was evident from the season's start with the heavy early morning and late evening flights to and from areas east and north of the refuge. This need for movement for food out of the closed area was intensified by the frequent, fast-moving sotrms of November which by mid-November had pushed the majority of birds south and covered much of the remaining feed.

Although hunting pressure was light through December and early January, it was concentrated in Unit 7 where the green (Gaines) wheat was a major attraction for Canada geese and widgeon.

It should be noted that waterfowl use of this refuge during the September-December period has steadily declined the past seven years while hunting pressure and harvest has remained relatively stable.

The Kuchel Bill lands (Public Law 88-567, enacted September 4, 1964) were posted and opened to public hunting. These areas are presently unclassified and are open to the taking of all legally huntable species. This includes White Lake, 1,189 acres, which was flooded and did present the nimrod with excellent hunt periodically.

Hunter success data for the past five years is shown in the following table.

lear	Total Hunters (Hunter Days)	Goose Bag	Duck Bag	Total Bag	Geese/Hunter	Ducks/Hunter	Total Birds/Hunter
1961	9,223	3,966	9,776	13,742	.43	1.06	1.48
1962	11,292	4,968	7,340	12,308	.44	.65	1.09
1963	12,150	6,683	13,244	19,927	. 55	1.09	1.64
1964	11,122	4,226	8,119	12,345	.38	.73	1.11
1965	11,164	4,801	9,266	14,067	.43	.83	1.26
5-year							
Average	10,990	4,929	9,549	14,478	.45	.87	1.32

WATERFOWL HUNTER-SUCCESS DATA - LOWER KLAMATH REFUGE

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Species	1965	1964	1963	1962	1961
Geese					
Canada goose	7	6	4	2	3
Cackling goose	11	12	12	18	17
White-fronted goose	15	16	18	19	8
Snow goose	1	1	0	1	1
Ducks Mallard	18	13	9	7	12
mailaid	10	10	U		14
Widgeon	9	12	9	13	13
Pintail	21	24	33	19	32
Green-winged Teal	5	5	3	3	2
Shoveler	4	5	6	7	8
Redhead	1	2	1	1	0
Other	8	4	5	10	4

PERCENT SPECIES IN BAG*

<u>Pheasants</u>: During the sixteen day pheasant season, November 20 to D December 5, 3,131 hunters bagged approximately 1,660 rooster pheasants for an average of .53 birds per hunter day. The opening weekend received 84 percent of total pheasant hunter use and 86 percent of the birds were killed during this period. The bag limit was two roosters per hunter per day with a season limit of ten. Hunter success data for the last five years is shown in the following table.

		Estimated	Hunter
Year	No. of Hunters	Birds Killed	Success
1961	2,983	2,015	.67
1962	2,472	1,510	.61
1963	3,085	1,635	. 53
1964	2,910	1,730	. 59
1965	3,131	1,660	. 53
AVERAGE	2,916	1,710	. 59

E. Violations

All violations are listed in Tule Lake section.

F. Safety

Refer to Tule Lake section.

VII OTHER ITEMS

A. Items of Interest

All items of interest listed in Tule Lake section.

B. Photographs

Photographs follow.

Fifty wood duck nesting boxes were constructed in 1965 for distribution on Klamath Basin Refuges. Four of these, three at Klamath Forest and one at Upper Klamath, were occupied by nesting wood ducks.

Exposure 198 3/65 Sakora

A typical wood duck box installation, Lower Klamath Refuge

Exposure 199 4/65 Sekora

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Fifty wood duck nesting boxes were constructed in 1965 for distribution on Klamath Basin Refuges. Four of these, three at Klamath Forest and one at Upper Klamath, were occupied by nesting wood ducks.

Exposure 498 3/65 Sekora

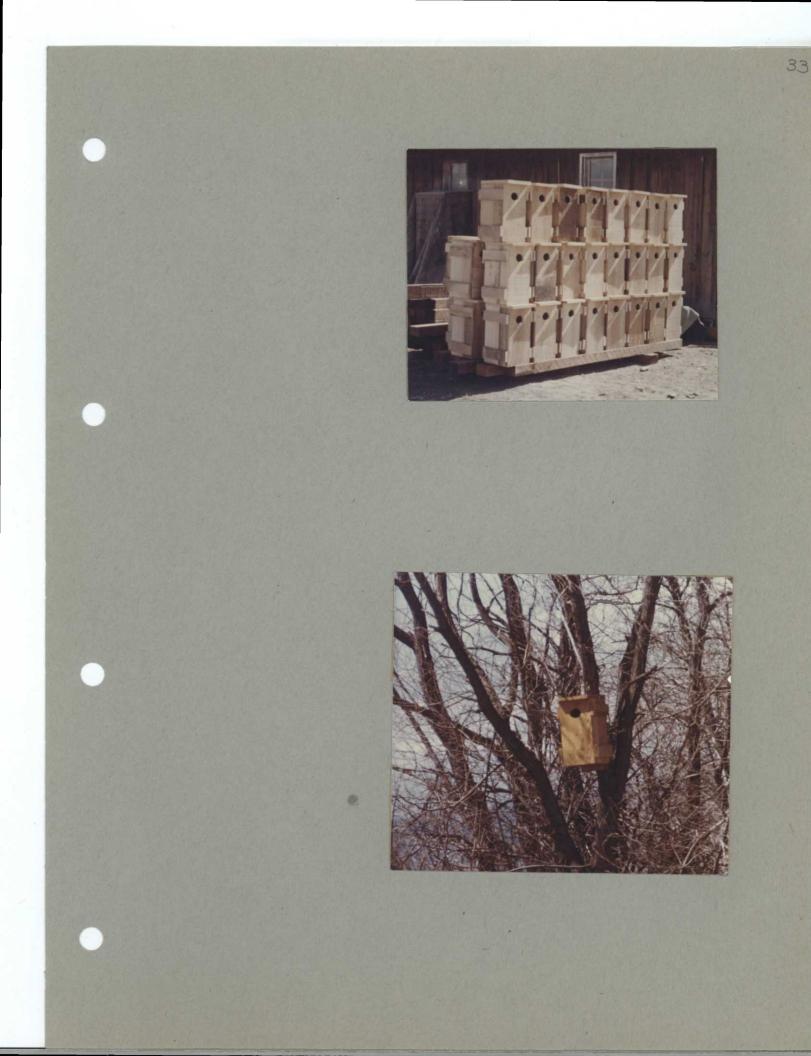
A typical wood duck box installation, Lower Klamath Refuge

Exposure 499 4/65 Sekora

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Aerial view of reflooded 1,189 acre White Lake Unit. One of more important nesting areas ceded to Lower Klamath Refuge under recent Kuchel bill legislation. Contains 914 nesting islands of varying size.

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Typical floating mats of filamentous algae (Cladophora) on Unit 4 during warm summer months.

8/65 E. J. O' Neill

Aerial view of reflooded 1,189 acre White Lake Unit. One of more important nesting areas ceded to Lower Klamath Refuge under recent Kuchel bill legislation. Contains 914 nesting islands of varying size.

7/65 E. J. O'Neill

Typical floating mats of filamentous algae (<u>Cladophora</u>) on Unit 4 during warm summer months.

8/65 E. J. O'Neill

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National Park Service historical recognition marker dedication at Lower Klamath Refuge entrance. Manager Watson, Mayor Thomas, rancher Laird and Lava Beds Superintendent Kennedy viewing completed monument.

7/65 E. J. O'Neill

Close-up of completed monument 7/65 E. J. O'Neill

11

National Park Service historical recognition marker dedication at Lower Klamath Refuge entrance. Manager Watson, Mayor Thomas, rancher Laird and Lava Beds Superintendent Kennedy viewing completed monument.

7/65 E. J. O'Neill

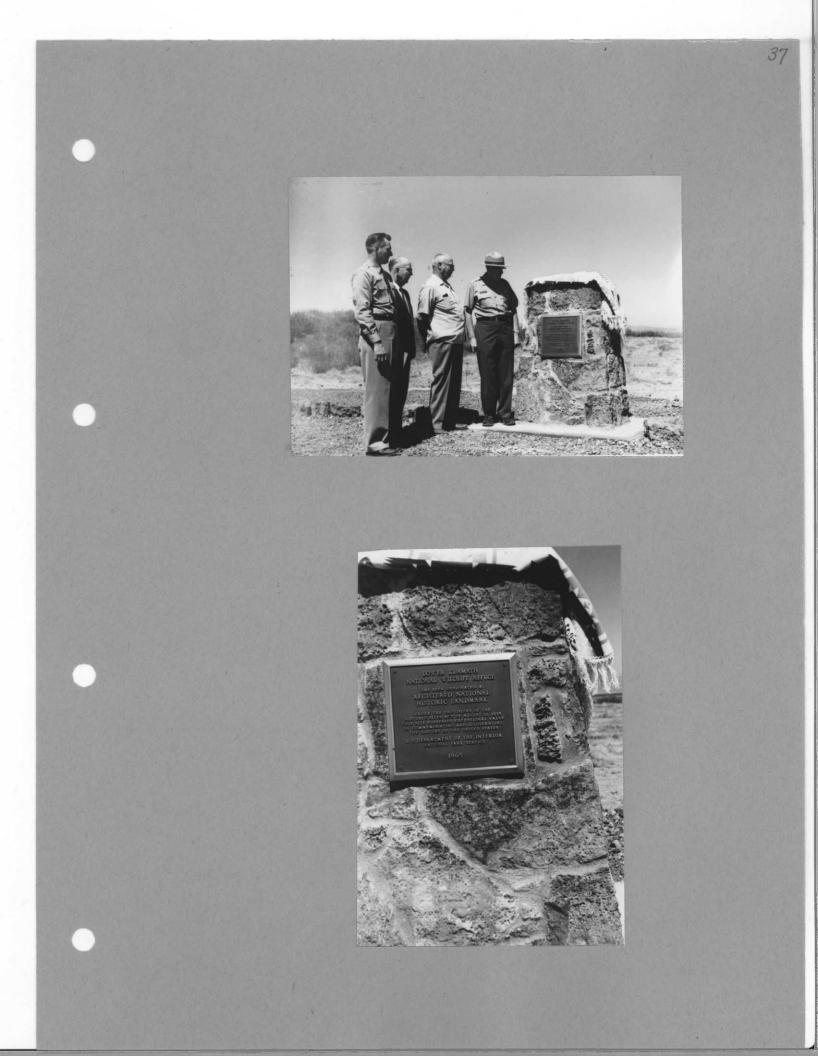
Close-up of completed monument

7/65

E. J. O'Neill

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Alkali Bulrush (S. paludosus) crop at Unit 8 three years after aerial seeding. Believed most extensive (800 acres) stand in the Pacific Northwest.

9/65 E. J. O'Nedll

38

Operator Charles Walker with D-8 cat constructing small loafing-nesting islands in Unit 8 alkali bulrush crop.

9/65 E. J. O'Neill

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Alkali Bulrush (S. paludosus) crop at Unit 8 three years after aerial seeding. Believed most extensive (800 acres) stand in the Pacific Northwest.

9/65 E. J. O'Neill

Operator Charles Walker with D-8 cat constructing small loafing-nesting islands in Unit 8 alkali bulrush crop.

9/65 E. J. O'Neill

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Operator Charles Walker with D-8 cat constrcting small nesting-resting islands in newly acquired (Kuchel Bill) Miller Lake unit.

9/65 E. J. O'Neill

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Klamath Falls Herald and News reported daily waterfowl shooting hours with this illustration.

XII

Operator Charles Walker with D-8 cat constrcting small nesting-resting islands in newly acquired (Kuchel Bill) Miller Lake unit.

9/65 E. J. O'Neill

Klamath Falls Herald and News reported daily waterfowl shooting hours with this illustration.

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Shooting Hours Shooting Hours Network OREGON January 4 Open Close 7:05 a.m. 4:50 p.m. CALIFORNIA January 4 Open Close 7:04 a.m. 4:48 p.m.

÷ 14

BC

3-1750 Form NR. (Rev. March 1953).

WATERFOWL

lorial Survey			Week	s of 1	(2) e por t	ingn	eriod	1		
(1) Species	1/2-0	1/10-16	1/17-23	: 1/34-80	: 1/31-2/8	: 2/7-13	: 8/34-50		1/11-1/1 : 9	: 10
Swans: Whistling Trumpeter	(A) 1/8 1,880	8,883	8,899	8,000	8,000	(A) 1/8 8,879	3,000	3,880	3,800	8,000
Geese: Canada	7,479	8,000	8,009	8,000	8,200	1,960	8,800	8,000	1,500	1,000
Cackling	10	10	10	10	10	685	10		800	1,000
Brant White-fronted	10	10	80	120	800	0.01	30	10,900	10,000	19,000
Snow	10	10	10	10	10		0,020	6 3 6 8	8,800	8,000
Eine Rose Sther TOTAL GEBSE:	7,500	8,000	8,010	8,199	I ALL	S.CAL	8,200	10,000	10,030	83,400
ucks: Mallard	10.100		1.00		10,000	11,600	8,780	5,000	5,400	4,000
Blacks Unident.	159	80,000	(0.000	40,000		200	AND	LAD	المتحد الم	I Lale
Gadwall		830	609	8,000	8,000	U.W	89	1,000	0,000	8,008
Baldpate	0,000	6,000	5,000	8,000	3,000	8,970	40,400	169,009	810,850	100,000
Pintail	0,250	4,800		8,009	100	10,0740	110	100,000	839	8,000
Green-winged teal Blue-winged teal	409	0.8	100	. 480				000		
Cinnamon teal			+						1	800
Shoveler	10,000	18,000	80,000	8,000	8,000	8,169	T,850	19,000	10,000	8,029
Wood					a second and a second					80
Redhead	80	80	40	(6)		1.59	230	800	460	- 600
Ring-necked										
Canvasback	40	80		160	290	200	10	808	800	300
Scaup	000	650	100	1,830	1,000	1,500	1.0	1,000	3,000	8,000
Goldeneye	10	10		300	000		100	98		00
Bufflehead		001		150			080		660	800
Ruddy	450	E09	000	609	999	0.0	- Contraction	0,000	6,200	8,000
Other Com. Mergans	r 30	001	LEO	200	651	19	140	800	1,010	eve
SCAL DUCAD:	46,730	61,560	73,309	63,500	88,809 889	45,800	TT.T.10	100,000 0,000	307,800 11,500	130,310 15,000
GRAND TOTALS:	80,000	80,010	11,019	100-110	37,500	81,550		214,850		-170,730

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Cont. '1

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(4

(Rev. March 1953)

(Rev. harch 1953) WATERFOWL (Continuation Sheet)

REFUCE Lover Klanath

MONTHS OF January

TO April , 1965

Aerial Survey	a y u	Weeki	sof	strain stands and interest	2) cting	peri	o d		: (3) : Estimated	: (4 : Produc	
		the second s	3/28-4/3	the second s	4/11-17	and the second		18	: waterfowl : days use	: Broods: : seen :	
Swans: Whistling Trumpeter	η bi	in frame	3/32 (4)	orded un	er (3) 6				1474 50		
Geese: Canada	1.000	2.67.6	10, 000 1545, 56	900		1.200	1,300	rg pe o	248,470	10, 201	
Cackling Brant	2,578	2,600	3,400	3,000	3,000	3,000	2,100	mà act	116,720	Libue De la	18 P. (A B
White-fronted	h, 300	3,000	2,050	3,000	1,500	522	200	icp_abe	326,060		
Snow Blue Rece	001 300	1,000	<u>600</u>	200	300	50	36		1115 820 92-019		
Other TOTAL CLISBY	7,600	11,600	7,750	7,300	5,700	- b. 750	3,610		919,110		
Mallard Black Unident.	1,000	1,000	1,310	2,000	10,000	3.000	1-700 5-000		511,120 1.074,500		
Gadwall	1.000	3,000	5,730	h,000	3.000	1,500	2.053	Special	324.520	a 19 pa 10	A.8.0
Baldpate Pintail	200.000	Co.con	23,170	20,000	10,000	12,000	6.000	e mar i ne	1,181,710 6,012,960	(PS - 6389	
Green-winged teal Blue-winged teal	1,500		<u>Solia</u>	3,000	1.600	1,000	3,230	ata Nan	26,930		
Cinnamon teal	190	200	220	100	1,200	1,000	2,000		38,360		
Shoveler Wood	50,000	50,000	10. 10	25,000	36,000	15 0.63	20.000	23.472.0	2,278,670		
Redhead Ring-necked	600	600	770	600	2,000	20	(100) (10)		17,950		
Canvasback	150	200	240	200	150	200	160		21.340		
Scaup Goldeneye	600	3,000	2.760	2,000	2,000	1,000	1.500		12, 70		
Bufflehead Ruddy	son-	22,000	990	10.000	15.0.26	250	EST 6.000		19-980 719-810		
Other Cam. Hergons			2.370	1.000	400			- Aller	15,160		
TOTAL DECES	278,600	154,000	103,640	77,970	84,730	68,010	55,820		12,750,600		
Coot:	25,000	10,000	40,080	30,000	35,000	26,000	20,000		2,698,970		
GRAND TOTALS:	301,200	205,600	151,670	115_0750	re 125, 136	98,790	79,430		15,546,200		

(5) Total Days Use	(6) (7) : Peak Number : Total Production	SUMMARY
Swans <u>177-190</u>	3,520	Principal feeding areas
Geese 919,110	22,100	2,3,4,5,9 and 124
ucks <u>12,750,600</u>	278,600	Principal nesting areas
oots 1,698,970	10,080	
total 15,566,200	Miot simultaneously	Reported by
	Contract Contract International Contract	
LTUCATT	In addition to the birds listed	7534, Wildlife Refuges Field Manual) I on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be give ational significance.
1) Species:	In addition to the birds listed reporting period should be adde	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be give ational significance.
 Species: Weeks of Reporting Period: Estimated Waterfow 	In addition to the birds listed reporting period should be adde to those species of local and n Estimated average refuge popula	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be give ational significance.
 Species: Weeks of Reporting Period: 	In addition to the birds listed reporting period should be adde to those species of local and n Estimated average refuge popula	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be give ational significance.
 Species: Weeks of Reporting Period: Estimated Waterfow Days Use: 	In addition to the birds listed reporting period should be adde to those species of local and n Estimated average refuge popula Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be give ational significance.
 Species: Weeks of Reporting Period: Estimated Waterfow Days Use: Production: 	In addition to the birds listed reporting period should be adde to those species of local and n Estimated average refuge popula Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s	I on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be give ational significance. Ations. The species of days present for each species. And based on observations and actual counts on representat hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.
 Species: Weeks of Reporting Period: Estimated Waterfow Days Use: Production: 	In addition to the birds listed reporting period should be adde to those species of local and m Estimated average refuge popula Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s breeding habitat. Estimates ha A summary of data recorded under	I on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be give ational significance. Ations. The species of days present for each species. And based on observations and actual counts on representat hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.

Interior Duplicating Section, Washington, D. C. 1953

Continuation Sheet

PJ 3-1750 Form NR-1 (Rev. March 1953) A - Aerial Consus

WATERFOWL

REFUGE Low	er Klamath					MONTHS OF	May	TO	Angost	, 1905
		L	eeks	of re	(2) port:	1				in the start
(1)	5/2-8 :5		/16-22 :1		5/30-6/5 :	6/5-12 :1	sriod 5/13-19 :1	3/20-26 :	6/27-7/3 :7	/4-10
Species	1 :	2 :	3 :	4 :	5 :	6 .	7 :	8 :	9 :	10
wans:	1	1	1.00			(A) 0/8				
Whistling	5	8	5	5	5	8	3	2		
Trumpeter				4.44 (A)			· · · · · · · · · · · · · · · · · · ·			A CONTRACTOR
eesei						1. M			1	
Canada	1,800	2,000	8,000	2,000	2,500	8,500	2,500	.8.500	2,500	8,80
Cackling	1,500	1,000	500	500	100	40				
Brant										
White-fronted	200	209	200	00					10	1
Snow	80	0.00		10	10	10	10		10	1
Etux Boss"		10	10							
tituz Total Geese	3,870	3,010	8,710	8.570	2,010	2 , 170	2.510	8.500	8,580	8.54
ucks:								-	Sector Sector	
Mallard	6,000	2,800	8,100	8,000	8,000	2,000	2,200	8,800		00
Exact Unidentified	10.000	1.000	1.000			800	500		800	6,00
Gadwall	0.000	8.000	3.000	2,800	8,800	2,900	3,000			3,00
Baldpate	8,000	2,000						and the second se		
Pintail	8,000	8,000	8,000	1,600	1,500	1,500	2,000	2,000	3,500	5.30
Green-winged teal	4,000	3,000	1,100	- 200	80	150	100	80	300	1,00
Blue-winged teal				10	20	20	20	10	10	1
Cinnamon teal	2.000	8,000	8,000	2,000	2,500	8,800	2,500 300	8,500	8,500	1,00
Shoveler Wood	1,200	6,000 50	8,000 80	8,000	600			1,100	2,500 10	8,00
Redhead	1,100	2,000	8,000	8,000	3,600	3,000	3,500	4,000	4,000	4,10
Ring-necked	130	50	10	8.000	0,000		30	10	8	
Canvasback	200	200	50	50	100	80	80	50	80	3
Scaup	2,000	2,000	1,000	500	800	800	200	150	100	10
Goldeneye	20	-,000	10			000				
Bufflehead	100	150	200	60	50	80	80	109	50	
Ruddy	5,500	4,000	2,200	1,000	1,000	8,000	8,000	8,000	3,500	4,00
Ginar Con. Merganse	And in case of the local division of the loc	20	10		00		10	10	10	1
Total Ducks	50,200	30.870	80,430	14,175	13,630	16,200	17.490	18.840	23,765	80.65
	26,000	30,000	25,000	25,000	26,000	27,000	27,000	10,000	9,000	8,500
Grand Totals		LAN PLATE	48,145		42,440	40.703	W REAL	31.392	35,308	
	And a subscription of the	CONTRACTOR OF TAXABLE PARTY OF TAXABLE PARTY.	And a local division of the local division of the	Contraction of the local division of the						

MONIMUS OF

3 -1750a

Cont. 1

(Rev. March 1953)

WATERFOWL (Continuation Sheet)

REF	IGE

PD

Lower Klamath

MONTHS OF

August

TO

10 65

8,180

34,970

1174

May

(1) Species	1/11-17 : 11 :	Week /13-24 12	7/25-51	(2 repor 5/1-1 : 14 :	ting	peri /10-11: 16 :	o.d 17.	5/29-5/4 18	(3) • Estimated waterfowl days use	: Produ	Estimate
Swans: Whistling Trumpeter		anners) St	(A)7/27	01.999 1	01. (A) 1		A) 0/25		889		1
Geese: Canada Cackling	2,100	2,800	3,230	3,300 20	3,200	4,000	5,000	5,000 10	202,818	345	8,850
Brant White-fronted Snow	10	10	A bobart	10	10		36 10	180	6,510 8,260		
xitiner Ross' Stinge TOTAL GERSE	8,140	2,00	3,830	3,360	3,340	4,640	8,089	8,120	140		0,880
Ducks: Mallard Forget Unidentified	2.000	0,000	12,300	13,000	18,000	10,000	16,000	80,000	858,789	610	3,800
Gadwall Baldpate Pintail	2,300		8.580	6,600 400 10,000		6,609 1,609	8,549 6,600 (20),100		454,850 177,948 4,810,048	410	11,760
Green-winged teal Blue-winged teal	1,290	1,100	Decat 12	1,000	1,000	2,000	2,000	8,608 30	6,600,700		30
Cinnamon teal Shoveler Wood	1,800	1,500	1,200	1,500	2,800	3,000	4,000	4,000	286,800 300,950 1,670	81	700 2,000
Redhead Ring-necked	4,000	5.000 200	7,820	8,000	8,800 200	7,000	100	8,000 169	667.049 9,389	105	4.130
Canvasback Scaup Goldeneye	<u></u>	160	100	200 200 10	200	<u>203</u> 309	<u>230</u> 300	500		8	410
Bufflehead Ruddy	4,800		2,100	8,809	3,000	8,000		80	8,059		1,850
Sther C Morganoor TOTAL DECID	10 \$4,400	10 37,730	35,170	10 47,010	20 64,060	20 278,500	204,100	10 170,210	2,100 8,623,120	778	150

18,000

15,000

9,000

49,870

4,300

<u>_</u>[]]

18,770

54,170

* Includes five newly acquired habitat units

15,000 15,000

65,358ver 73,390 298,140 274,180 106,830

20,000

2.264.980

10,000,470

Coot:

	(5) Total Days Use :	(6) . Peak Number	(7) Total Production	SUMMARY
Swans	330	·	101 TAO	Principal feeding areas
Geese	401,030	5,050	2,300	2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2
Ducks	8,023,120	278,500	26,540	Principal nesting areas
Coots	1,204,000	30,000	0,100	
TOTAL	10,689,469		34,970	Reported by Bound J. O'Neill, Wildlife Biologist
	aler	Not simultane	maly	
Green	-Artifled feur	IRUCTIONS (See	to the birds listed	a 7534, Wildlife Refuges Field Manual) d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given mational significance.
(1) S ₁	INS Species:	IRUCTIONS (See	to the birds listed	d on form, other species occurring on refuge during the ad in appropriate spaces. Special attention should be given
(1) S ₁ (2) We Re	INS Species: Seeks of Seporting Period:	IRUCTIONS (See In addition reporting pe to those spe	to the birds listed	d on form, other species occurring on refuge during the ad in appropriate spaces. Special attention should be given mational significance.
 (1) S1 (2) We Re (3) E: 	INS pecies: weeks of	IRUCTIONS (See In addition reporting pe to those spe Estimated av	e Secs. 7531 through to the birds listed eriod should be adde ecies of local and n	d on form, other species occurring on refuge during the ad in appropriate spaces. Special attention should be given mational significance.
(1) S1 (2) We Re (3) E: De	INS Species: Seeks of Seporting Period: Stimated Waterfowl	IRUCTIONS (See In addition reporting petto those spe Estimated av Average week Estimated nu breeding are	e Secs. 7531 through to the birds listed eriod should be adde ecies of local and n verage refuge popula cly populations x nu mber of young produces. Brood counts s	ations.
 (1) S1 (2) We Re (3) E: De (4) P1 	INS pecies: Weeks of eporting Period: stimated Waterfowl ays Use:	IRUCTIONS (See In addition reporting pe- to those spe Estimated av Average week Estimated nu breeding are breeding hat	e Secs. 7531 through to the birds listed eriod should be adde ecies of local and n verage refuge popula cly populations x nu mber of young produces. Brood counts s	a on form, other species occurring on refuge during the add in appropriate spaces. Special attention should be given national significance. Attentions. The species of days present for each species. And based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.
 (1) S1 (2) We Ref (3) E: Da (4) P1 (5) Te 	INS Species: Seeks of Seporting Period: Stimated Waterfowl ays Use: Troduction:	IRUCTIONS (See In addition reporting pe- to those spe Estimated av Average week Estimated nu breeding are breeding hat A summary of	e Secs. 7531 through to the birds listed eriod should be adde ecies of local and m verage refuge popula cly populations x nu mber of young produ- eas. Brood counts so bitat. Estimates ha	a on form, other species occurring on refuge during the add in appropriate spaces. Special attention should be given national significance. Attentions. The species of days present for each species. And based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.

Interior Duplicating Section, Washington, D. C. 1953

you by Michael

WATERFOWL (Constmustion Sheet) 2.57 25 5

3-1750

Form NR. (Rev. March 1953)

WATERFOWL

MONTHS OF September

TO December

19 65

(A) Aerial Consus

REFUGE Lower Klam th

(2): Weeks of reporting period 17/ 31 ATABLE 10/20-10/2: 10/3-9 : 10/10-10 10/17-23 10/04-30 10/01-11/0 11/7-13 (1)DALES 6 Species 1 2 3 2 4 . 8 10 (A)9/10 (A) 10/18 (A) 10/28 (1)11/5 Swans: Whistling 40 Trumpeter Geese: 8,380 5,800 8,000 Canada 5,000 5,500 6,880 5,450 5,780 3,500 3,730 Cackling 25,000 80,200 10.00 26,800 16,000 Brant White-fronted 6,000 19,000 J. TEO 3,380 800 3,800 0.700 8,000 3.200 Snow 2,000 180 202 1.200 1.000 1.000 3.000 Blue Bess! .00 Other Total Geese 5,420 5,200 0.000 12,790 14.500. 42,500 45,170 22.700 40,200 33.450 Ducks: Mallard 28,000 909, **92** 41,020 20.000 18,400 20,000 16,500 10.770 14.600 15,460 Elask Unidentified 0,000 18,000 22.800 5,000 29,610 40,000 20,000 4.230 10,000 14.000 Gadwall 10,000 13.000 22,000 14,680 10.000 22,500 14,000 A.TEO 20, 300 54.000 Baldpate 25,000 55,000 68,091 78,000 10.000 2,780 100.000 36,000 101.070 Pintail 01.000 132,000 170.000 ACT Green-winged teal 10,650 10,000 20,030 80.770 16,000 18,140 19,000 21,700 5 (A.C.) 243 450 Blue-winged teal 10 200 Cinnamon teal 4.859 8,000 8.000 50 100 23.0 1.500 200 1.000 Shoveler 36,920 40,000 6.0.0.72 71.000 25,000 28,600 11,850 18,099 Wood 10 20 Redhead 1,000 B.AEO 000 200 2.000 2.890 200 800 7 8.0 950 Ring-necked 30 10 10 10 10 10 Canvasback <u>300</u> 700 1.000 450 2102 1 600 809 668 1,000 Scaup 1.000 1.509 2,000 1.570 2,000 R.E.A. Goldeneye 10 Bufflehead 60 200 2.0 4.0 **O**IPR 1.000 1.950 Ruddy 2,800 1,250 2.000 1,800 4.000 10.000 2,000 0.5.5 2.550 **F. C**an Sther C. Merganser 200 Total Ruska 230,010 272,000 313,489 100,920 369,310 873,410 404,340 448,389 03,920 312,730 120,000 40,000 71,170 47,000 34,100 35,000 87,800 45,000 70,000 91,995 Coot: Grand Totals | 230,440 321,900 405,010 300,830 543,010 550,730 270,210 304,670 410,610 730,029

3 -1750a

Cont. 1 1

(Rev. March 1953)WATERFOWL
(Continuation Sheet)

REFUGE

Lower Klamath

MONTHS OF September TO December , 19 65

D. Total Production	u A en	ve e k s	of	(2 repor		p.eri	o d		: (3) : Estimated	: (4) : Production	0
	11/14-10		WEDU		N/H-J			Loonoro	: waterfowl	:Broods:Est	
Species :	11 :	12 :	13 :	14 :	15 :	16 :	17 :	18	: days use	: seen : to	
wans:	¥. 2	manul or	(4)	ozaea mz	(A)12/17		In States	J.	1 Contraction	- Americanity	
Whistling	40	10	00	100	ETO	700	909		10,810		1
Trumpeter	ote	OTUR UND	TORO! DI	ATTRE DOG	MATTIC 120						
eese:	DI.G	igruf sie	SS' DLOG	a counce	euoera e	WEOB OU	CHO OX I		TERLEZHETUR	THE OT COR	
Canada	1,000	800	1,650	1,600	2,850	8,000	700		428,390		-
Cackling	50,100	7,000	03	200	1.2	100			1,212,000		
Bonnat Ross*	10	allo upor	A hohom	10		10	and and		810		1
White-fronted	1,800	850	220	800	8,000	1,100			450,580	and the second second	
Snow	7,550		80		30	80			116,550		
Blue			ange ter	off a hohes					140		
Cathar Tatal Goose	62,600	8,050	8,840	8,500	4,500	3,260	100	100	8.211.000		11-67
ucks:	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		No.		December 1				No. S. P. S. P.	14 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	14.
Mallard	26,000	28,008	28,800	15,000	19.850	10,000	0.000	137.5	8.871.880		
Bruck Unidentified	25,300	0,200	1,600	3,000	10,000	U.CU	1,500	Seg. Com	8,913,410		-1-2
Gadwall	4,480	and an first		000		100	160	Second al	1,145,850		14
Baldpate	55,300	16 400	6,710	10,000	4,000	3,000	4,000	and transferred stre	8.TT8.049	N. 19. 19. 19. 19. 19.	
Pintail			54,700	40,000	40.000	5,000	5,500		MACKERSON		1. Carlo
Green-winged teal	6.480	8,360	the subscription of the local division of th	1.500	C 26.31	110	6.00	PJ4 AP	1.777.880		12101
Blue-winged teal									70		
Cinnamon teal	150								87.850		1-1-6
Shoveler	40.500	18.000	31,900	25.000		1.000	5,000	TREES DA	8.418.790	an analogical result	
Wood					Banam			4	21(8)	ALC PERSON	
Redhead	500	200	250	200	- 80	180			100,270		
Ring-necked	10			20	10	10	10		1,750		
Canvasback	800	200		850	160	80			43,100		-
Scaup	2,350	3,000	1,000	2,000	1,000	1,000	400	a Are	175,840		
Goldeneye	130			50	100	- 50	200		8,770		
Bufflehead	420	240	170	200		300	100	a a constraint	30,830	DO DECE	
Ruddy	5,006	2,500		000	5,000	1,000			830,750		
Cuttur C. Mergenser	00			100	GRAL	165	105 82.64.5	In state of a	8,400	True meters	-
Total Dacks	£10,033	122,000	190,100	68,679	CO ,710	32,960	28,000		29,748,400		
oot:	22,500	12,000	2,500	3,000	3,000	1.008	60		4,473,210		
Grand Totals	355,300	142,910	130,850	104,320	00,560	37,920	27,120		36,444,940		

be

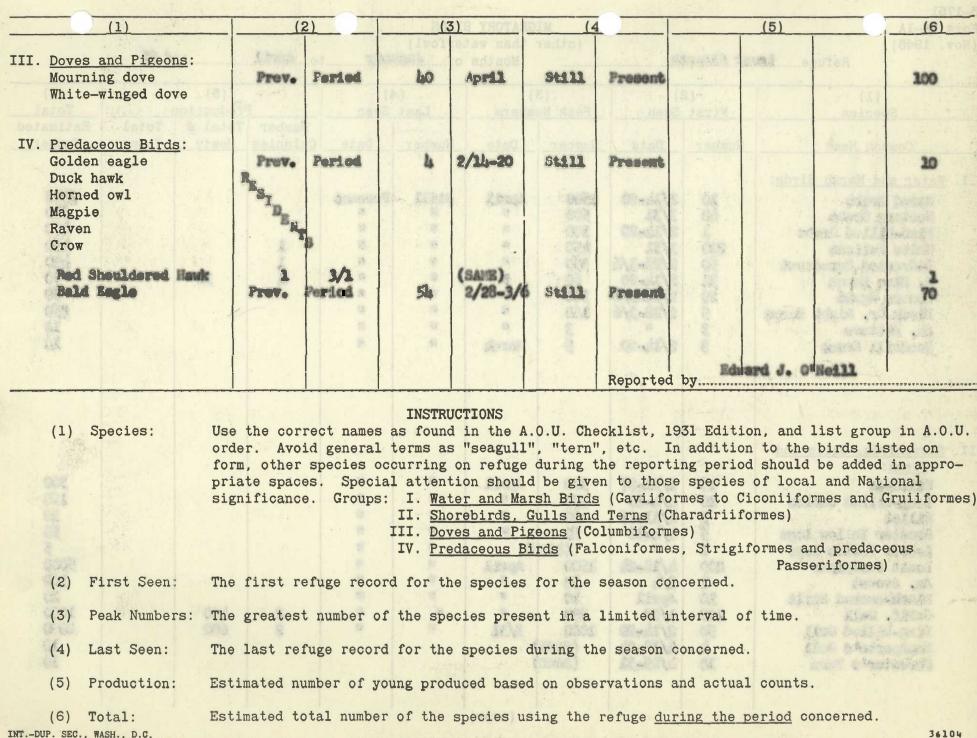
(5) Total Days Use :	(6) (7) Peak Number : Total Production	SUMMARY
iwans 10,800 ;	700 :	Principal feeding areas Share-crep and refuge formed
teese 1,210,000	63,000	agriculture grain tracts, adjacent agri: stabble fields,
ucks 29,750,000	587,000	Principal nesting areas N/A
oots 4,470,000	120,000	TO SP ED CONTRACTOR AND ADD ADD ADD ADD ADD ADD ADD ADD ADD
36,440,800 "Not eimitamee	wly setter setter	Reported by Edward J. O'Heill & Caylord L. Inman (October census by Palmer Sekora and Ray Ghahn)
groep-states est inst	RUCTIONS (See Secs. 7531 through	753), Wildlife Refuges Field Manual)
		(1)th warden a work about a solar warden a solar a sol
Dalapare	, In addition to the birds listed	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given
1) Species:	In addition to the birds listed reporting period should be added	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance.
 Species: Weeks of 	In addition to the birds listed reporting period should be added to those species of local and n Estimated average refuge popular	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance.
 Species: Weeks of Reporting Period: Estimated Waterfowl 	In addition to the birds listed reporting period should be added to those species of local and n Estimated average refuge popular Average weekly populations x num Estimated number of young productions and the set of the	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance.
 Species: Weeks of Reporting Period: Estimated Waterfowl Days Use: Production: 	In addition to the birds listed reporting period should be added to those species of local and n Estimated average refuge popular Average weekly populations x num Estimated number of young productions and the set of the	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance. tions. mber of days present for each species. ced based on observations and actual counts on representative hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.
 Species: Weeks of Reporting Period: Estimated Waterfowl Days Use: Production: 	In addition to the birds listed reporting period should be added to those species of local and n Estimated average refuge popular Average weekly populations x num Estimated number of young product breeding areas. Brood counts sho breeding habitat. Estimates has A summary of data recorded under	on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance. tions. mber of days present for each species. ced based on observations and actual counts on representative hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.

Interior Duplicating Section, Washington, D. C. 1953

Sec.

WATERFOWL (Continuation Sheet)

3–1751	20									
orm NR-1A Nov. 1945)				GRATORY I						O
Refuge	vor Elana	th			of Jan	uary	to April	19	5.65	
(1) Species	() First	2) Seen	(3 Peak Nu	· · · · · · · · · · · · · · · · · · ·		4) Seen		(5) Production	rob begate	(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds: Bared Grebe Hestern Grebe Pied-billed Urebe White Policen D-Crested Cornorent G. Elue Heron Comon Egret Heck Cr. Hight Heron An. Hittern Samihill Creme	10 10 200 50 31 20 5 3 3	2/14-20 3/31 2/14-20 3/31 2/28-3/6 2/28-3/6 2/28-3/6 2/28-3/6 2/28-3/6	2500 500 300 450 350 60 300 160 3 5	April 	Still 	Prosent	1 1 1 .	32		2000 500 400 450 400 70 50 250 10 10
I. <u>Shorebirds, Gulls and</u> <u>Terns</u> : Killdeer Long-billed curlew Willet Greeter Yellew Lege Leset Sandpiper An, Avocet Bleck-mecked Stilt Calif, Gull Ring-billed Gull Bomperte's Gull Forester's Form	18 10 2 5 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 1 200 200	2/21-27 11/1-10 11/11-17 11/10-20 2/11-20 2/11-20 2/11-20 11/20 2/11-20 11/18-21 11/25-31	300 150 20 50 (SAME 30 10 300 10 300 10 300 10 300 10 300 10 300 10 300 10 300 10 300 10 300 10 30 10 30 15 30 50 50 50 50 50 50 50 50 50 50 50 50 50	April ************************************			the correct other s is spaces it spaces it sates is 2 sin refs	400 600	twolowi 	300 150 30 50 5 5000 100 2000 100 2000 10 10 10



Common Name Number Date Number Date Number Date Number Date Number Total # Total Number Total Number I. Water and Marsh Birds: Provices period 9,000 7/85-81 94111 Present 8 800 900 9,000 Fiestern grobe Fiestern grobe Fiestern grobe 9,000 7/85-81 94111 Present 8 800 900 9,000 Total # Fiestern grobe Fiestern grobe 9,000 7/85-81 94111 Present 8 800 900 9,00 Total # Fiestern grobe Fiestern grobe 9,000 7/85-81 9,000 <t< th=""><th>pd 3–1751</th><th></th><th></th><th></th><th></th><th></th><th>No.</th><th></th><th></th><th></th><th></th></t<>	pd 3–1751						No.				
Months of				Access to a second second second							- Vinte
(1) (2) (3) (4) (5) (6) Species First Seen Peak Numbers Last Seen Number Total # Total Total Common Name Number Date Number Date Number Date Number Total Estimation I. Mater and Marsh Birds: Previous Period \$000 7/85-81 \$100 \$000 \$000 Testern grabe Previous Period \$000 \$000 \$100 \$000 <td< th=""><th>Nov. 1945)</th><th>ower Klane</th><th>th</th><th>(othe</th><th></th><th></th><th>iny</th><th>to Angast</th><th>1</th><th>4 85</th><th></th></td<>	Nov. 1945)	ower Klane	th	(othe			iny	to Angast	1	4 85	
Species First Seen Peak Numbers Last Seen Production Total Common Name Number Date Number Date Number Date Number Total Stina I. Matter and Marsh Birds: Previous period \$,000 7/85-81 \$till Prevent \$ \$000 \$000 \$,000 Testern grabe Previous period \$,000 7/85-81 \$till Prevent \$ \$000 \$,000 Testern grabe ************************************	Keruge		the state		MONUIS	01			d ,	JJ	a service inte
Species First Seen Peak Numbers Last Seen Production Total Total Common Name Number Date Number Number Date Date <td>(1)</td> <td>(2</td> <td>2)</td> <td>(</td> <td>3)</td> <td>(</td> <td>4)</td> <td></td> <td>(5)</td> <td>vob beant</td> <td>(6)</td>	(1)	(2	2)	(3)	(4)		(5)	vob beant	(6)
Common NameNumberDateNumberDateNumberDateColoniesNestsYoungNumberI. Water and Marsh Birds: Western grobe Wate pellem Dumble-screeted GermorentPrevious 								I IIIIII		n	Total
I. Water and Marsh Birds: Bared grebs Vestern grebs Pied-billed grebs Thite pelicas Demble-prested Cormorent Previous period * * * * * * * * * * * * * * * * * * *						1.					Estimated
Bared grebs Provices period \$,000 \$,725-31 \$	Common Name	Number	<u>Date</u>	Number	Date	Number	Date	Colonies	Nests	Young	Number
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I. Shorebirds, Gulls and Terns: Hilled carlev Willot Greater yellevlers Lesser yellevlers Lesser yellevlers Lesser andpiper Devices and Devices and Dev			- Personal		C/ 88-80					1	40
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Willet No Data 10 Greater yellewlegs 8.000 7/25-31 18.00 Lesst sandpiper 8.000 7/25-31 18.00 Devitaber 8.000 8/8/14 8.000 American Avecet 8.000 8/8/14 8.000 Califernia gall 1.400 8/8/14 8.000 Ring-billed gall 1.500 8/8-8 8.000 Bomaparte's gall 1.600 5/16-22 60 100 Restor 's tern 100 7/11-17 60 100 100	Lang-billed engley	Previlous N	Derrog	100	8/8-14	Line Ten	1. Spectal	Reo Bas es		11.12	400
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Bomaparte's gall " " 100 5/16-22 " " 50 100 30 50 100 30 100 30 100 100 100 100 100 100	Bing-billed mll		TALK DATE	1,500	5/2-0				1,514	1.800	4.000
Caspian tern " " 100 7/11-17 " " "	Bonaparte's gall									Re l	100
Black torn 80 5/2-8	Caspian term		o lito non.	100	9/10-22	- addingor	Dices a	witten dest	50	100	300
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(b) -created (arrowing 0 100 0 100 000 10000 1000 1000 <th< th=""><th></th><th>(1)</th><th></th><th>2)</th><th>(3</th><th></th><th>0.01 (.</th><th>4</th><th></th><th>(5)</th><th></th><th>(6)</th></th<>		(1)		2)	(3		0.01 (.	4		(5)		(6)
Golden eagle Duck hawk Horned owl Magpie Raven Crow Image: Image of the species	Mour	ning dove	Concerdent of the State of the State	Period	200	7/11-17	5411 1	reseat	Konnill, 'n (R)		Refu	850
Raven Crow Instructions (1) Species: Instructions (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed form, other species occurring on refuge during the reporting period should be added in priate spaces. Special attention should be given to those species of local and Nationa significance. Groups: I. Mater and Marsh Birds (Gaviformes to Ciconiformes and Grui II. Shorebirds, Gulls and Terns (Charadriformes) III. Doves and Pigeons (Columbiformes) IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes) (2) First Seen:	Gold Duck Horn	len eagle : hawk .ed owl	Beeia	Date C.	1 (114		percent v opp.st	Bulley	and and a second	n la n la nha 18	ich Kang	Second
(1) Species: INSTRUCTIONS (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed form, other species occurring on refuge during the reporting period should be added in priate spaces. Special attention should be given to those species of local and Nationa significance. Groups: I. Mater and Marsh Birds (Gaviiformes to Ciconiiformes and Grui 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.	Rave	on 005	0 NR 9 0	• · · · · · · · · · · · · · · · · · · ·		9 9 9 9 9 9 9 9			1		n baltic mailan batuar-	o kioj -jos (o Pisiti Udinyi Udinyi Udinyi
INSTRUCTIONS (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed form, other species occurring on refuge during the reporting period should be added in priate spaces. Special attention should be given to those species of local and Nationa significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Grui II. Shorebirds, Gulls and Terns (Charadriiformes) III. Doves and Pigeons (Columbiformes) IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes) (2) First Seen:					N R R	10 10 10 10 10 10 10 10 10 10 10 10 10 1		8/11 Boltas B/8 Being	S Aunitroit	4 7 010-	Joigo Joigo Mi Lood opero LL	
form, other species occurring on refuge during the reporting period should be added in priate spaces. Special attention should be given to those species of local and National significance. Groups: I. <u>Water and Marsh Birds</u> (Gaviiformes to Ciconiiformes and Grui II. <u>Shorebirds, Gulls and Terns</u> (Charadriiformes) III. <u>Doves and Pigeons</u> (Columbiformes) IV. <u>Predaceous Birds</u> (Falconiformes, Strigiformes and predaceous Passeriformes) (2) First Seen: The first refuge record for the species for the season concerned.		Species:			INSTRU as found	CTIONS I in the A	.0.U. Ch	ecklist, I	1931 Edit:	.on, and I		
(2) First Seen: The first refuge record for the species for the season concerned.				species o	ccurring	on refuge	during	the report	ing perio	d should	be added 1 and Nat	in appr
(3) Peak Numbers: The greatest number of the species present in a limited interval of time.	622 101 101 101 101 101 101 101 101 101 1				: I. <u>Wat</u> II. <u>Sho</u> III. <u>Dov</u>	er and Ma rebirds, res and Pi	rsh Bird: Gulls and geons (Co	<u>s</u> (Gaviifo <u>d Terns</u> (C olumbiforn	ormes to (Charadrii) Nes)	iconiifo: ormes) ; formes an	nd predac	Gruiifor Bous
(4) Last Seen: The last refuge record for the species during the season concerned.		First Seen:	significand	e. Groups	: I. <u>Wat</u> II. <u>Shc</u> III. <u>Dov</u> IV. <u>Pre</u>	er and Ma prebirds, es and Pi daceous B	rsh Birds Gulls and geons (Co irds (Fa	<u>s</u> (Gaviifo <u>d Tørns</u> (C olumbiform lconiforme	ormes to (Charadriin nes) es, Strigi	iconiifo: ormes) ; formes an	nd predac	Gruiifor Bous

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge <u>during the period</u> concerned.

INT.-DUP. SEC., WASH., D.C.

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Nov. 1945) Refuge	man Flama	41	(othe	r than wat	erfowl) of Septe	aber	Decembe	F	6 65	
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(1)	(2)		3)	(4)		(5)	ob besitt	(6)
Species	First	Seen	Peak N	umbers	Last	Seen		roduction		Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimate Number
Common Name		Date	Number	Date	Number	Date		1103 13		
I. Water and Marsh Birds:			1000					100	100	4.00
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White pelienm			600		1	12/5-18	at a second			1,00
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Cormorant			300		Still	Present		1	Paralle Static	40
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Snowy Egret			20							saret U
Black-er. Hight Heron			200		11 States &	# SI-01			MARK N	25
White-Secod Ibis			4 35	9/19-10/2 11/7-30	Same 16	11/21-12/	BLACT OF		Senie w	1
Sandhill Crane	Strange Vo	Reported	00	11/1-00		11/01-10/				
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o, and list group in A.0.0	101 Bd115	it , siefle		CA 666 h		a asmed to	the dorre		iselbes	(1) 5
I. Shorebirds, Gulls and	in 13.15bg	etc. I		"seigull"		general	hiova			
Terns: Wilson's Snipe			100	9/27	2	12/8-18	other s	fore		10
Killdeer Long-billed Curlew			300 20		Still No Res	Present	be spaces	pria		30
Willet			50		ii ner	n		ind its		30 20 5 30
Greater Yellowlegs Lesser Yellowlegs		the light	300	119 668	WOR .II					30
Losst Sandpiper	113.002	MALE TRANS	9,000	28 mapapa		n Present				10,00
Devitcher Western Sandpiper			4,500 7,000	10 a 1		ecord				8,00
American Avocet Bl-Necked Still			2,300 140 4,000			11/61-10/		801		4,00
Ring-billed	10	1.1	4,000		Still	Present	testest	adt se		10,000
California Gull Bonaparte's Gull			2,000			cord				8
Forester's Tern	Los moora		No Re	bro	10	11 13	pites see	CAT		20 10
Caspian Tern Black Tern				ord			ing birth	tera di		30
Contraction of the second s			a manufaction of the second			135 20 731		1163		C. C. B. M. C. C.

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		(1)	(2)	(3)		4		(5)		(6)
III.	Mour	<u>s and Pigeons</u> : ning dove e-winged dove	Previous	Period	200	9/27	8411	Present			R (1)	300
IV.	Gold Duck 'Horn 'Magp		Reside	Arrouge	9.r 2	12/19-31 11/21-12/	4 Same	bolgol	Yuber Provinue B	an Sirds:	all nose	10 2
000 001 002 002 002 002	Reu Bel Har	tailed Hawk gh-legged Hawk I Hagle	e 2 Previous 1	Period 9/27 Period	50 9 19 28 11 5mm	0/27 11/21-12/ 12/19-31 9/27	n No	11/7-20 Present	8 6 0 0 8		a gelie a-court conort active conort active	20 15 50 30 40 2
02	Spa : (1)	Species:	Use the corr	ect names	as foun			necklist,		on, and list		
S S R R R R R			form, other priate space significance	species o s. Speci	ccurring al atten : I. <u>Wa</u> II. <u>Sh</u> III. <u>Do</u>	on refug tion shou ter and Ma orebirds. oves and P	e during ld be giv arsh Bird Gulls an igeons (C	the reportion the report the to the	ting period se species ormes to C: Charadriifd mes)	d should be of local an iconiiformes	added : nd Natio s and G predaced	in appro- onal ruiiformes)
	(2)	First Seen:	The first re	fuge reco	rd for t	he species	s for the	e season c	oncerned.	in i Jona	the troop	588 1944)
002	(3) (4)	Peak Numbers: Last Seen:	The greatest The last ref		14 0.				-	I.D.	1	
te Status	(5)	Production:	Estimated num	mber of y	oung pro	duced base	ed on obs	ervations	and actual	counts.	don 100 Infent	
	(6)	Total:	Estimated to	tal numbe	r of the	species u	ising the	refuge <u>d</u>	uring the p	period conce	erned.	EHIORPORTLAND, DREGON

ded in the	Eurola non			RIES AND WII	ton ton I and a	e third of a child
TED COPY	1 energy	14 month in		OF REFUGE HA		e 19 dineti
	wor Klame			nuarry with	d ending Augu	. ولاز تاكا
Reported by 1	idward J.	Meill	Title	Wildlife 1	Biologist	-
(1) Area or Unit	(2 Habi		preotic	(3)	(4) Breeding	(5)
Designation	Туре	Acreage	n other	Use-days	Population	Product
bits gam bell	Crops	400	Ducks	210,400	fuenta 143	2
tat typIs of	Upland Marsh	250	Geese Swans	315,060	74	4
	Water	400	Coots	8,050	Concerning for these description of the description of the	
Altrast descript	Total	1,050	Total	833,510	817	
	Crops	200	Ducks	6.236.130	1.285	10,0
	Upland	2,800	Geese	740,800	234	Hab Ldall
Lerrie II wetres	Marsh	1,360	Swans	5,460	bra	
in lying	Water	910	Coots Total	260,090	230	3,3
	Total	4.840	I U U d I	7,941,800	1,749	4.0
tanporary	Crops	680	Ducks	4.299,800	1,848	3,1
	Upland	200	Geese	000,898	pop.01 114	
III dud	Marsh Water	580	Swans Coots	8,200	nia Tem	
he rela- mergent	Total	1,180	Total	520.000 5.720.000	48	
		a		C7 60 63 63 67 67		680 CD 483 GB
85975 79	Crops Upland	650	Ducks Geese	6.990.200	bas 646	
to striWir	Marsh	300	Swans	380,020	baunk 96	-
ow plays	Water	2,060	Coots	050,000	0000	CO
b and tree	Total	3,870	Total	7,315,310	748	
	Crops		Ducks	820.000	406	
	Upland	590	Geese	27.400	Luoda 10	Grandensen
ented by V	Marsh	70	Swans	4.280	uonit	
	Water Total	800	Coots	25,000	olined 24	-
		860	Total	876,680	as <u>ten 442</u>	******
	Crops	ty fatt fee	Ducks	4,860,300		1,3
ee with	Upland	ben and	Geese	580,940	10000 16	6
VI	Marsh Water	80	Swans Coots	3,200	316	attatter a
	Total	3,200	Total	6,429,490	2,882	2,0
· · Rome 10 m						
	Crops Upland	160	O)Ducks Geese	7,020,120	2 <u>2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 </u>	8
VII debt			Swans	1,040	metal Rating	Product
and a subset	Water	590	Coots	520,350		O-The Rate Content

0.0

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report. (1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions. 10,880 Ducks 6,830,13 Crops include all cultivated croplands such as cereals (2) Habitat: and green forage, planted food patches and agricultural 138.0 row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a 3,120 .part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa 30 lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit. (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1. (4) Breeding

Population: An estimate of the total breeding population of each category of birds for each area or unit.

Sofuge farmed 900

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-1750b Form NR-1B (Rev. Nov. 195	57) at moto	DEPARTME FISH AN	ID WILDI	HE INTERIOR	DLIFE	or obtainin
HAND COURT	Fail ou su	O Frankl	16.6.4	OF REFUGE HA	have done for all the	CHURD GOLA
Refuge Lover	Klamsth	(Cent.)	For 12	emonth perio	d ending Augu	st 31, 19
Reported by	dward J.	0'Neill	Title	Wildlife B	lelogist	
(1)	(3		oractic	(3)	(4)	(5)
Area or Unit Designation	Hab: Type	Acreage	other	Use-days	Breeding Population	Production
ailed map and	Crops	enne enne	Ducks	Company in a second built in the second seco	306	California and a second
test types of	Upland Marsh	80 820	Geese Swans	d 1 3, 100 sq	10008 B	10
VIII	Water	820	Coots	300,200	a tot 82	
-qiroseb ris	Total	900	Total	1,884,220	890	10
	Crops	580	Ducks	2,990,610	706	660
alsemes as o	Upland	100	Geese	720,300	100	tathdaH (S
Agricult Mal	Marsh	380	Swans	ans 2,060 an	a puta	
tin lying	matel	840	Coots	380,000	60	660
mal sub-	Total	1.870	Total	4,002,970	B68	1,210
temporary	Crops	Sabular	Ducks	1,200,090	107	1,185
to foods:	Upland	30	Geese	3,760	bool1 44	150
XIII tud	Marsh	70	Swans	8,280	marsh	
the rela-	m . 1 . "	7,100	Coots Total	382,000	<u>34</u> 785	780
mergent Rep harshj" "			TUUAL			
SEOIS IS	Crops	LLS BIS V	Ducks	28,480,070	t bra 109	390
and extend-	Upland		Geese	931,980	brunt 14	
to service	Marsh	5	Swans	148,000	ting f	
low plays	Water Total	8,000	Coots	2,540,000	anial 883	<u>390</u> 780
four types	Crops	1,833	Ducks	630,000	e bra 10	
possible	Upland Marsh		Geese Swans	4,340	Luoda 48	
XIII betner	Water	10	Coots	400	o hter	
(Sheepy East (2)) Total	1,843(1)	Total	701,100	58 main 58	
				8,600,000	148	2,680
waterfowl ee with	Crops Upland	3,840	Ducks Geese	400,000	100	45
XIV	Marsh	L-SM artos	Swans	1.600 sn	infor	
	Water	20	Coots	1,500,400	83	
(Sheepy West (2)) Total	3,960(1)	Total	5,502,000		2,925
Lone 10 H	Crops	7,270	Ducks	800,000	10	1,035
	Upland		Geese	8,030	70	
Light age.	Marsh	Colongen and an and an and	Swans	2,900	Lons Estim	
Straits Drain (Water	7,310(1)	Coots Total	1,411,000	80	1,035
the second second of the second secon	-noual		TUGAL	-1411000		1,000

C, 0

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

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Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying 0124 above the plant communities requiring seasonal submergence or a completely saturated soil condition a 385,1 part of each year, and includes lands whose temporary 24 flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the rela-Mr.L. tively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days:

(2)

BST

Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(Straits Brain (2) Total

1) seinsted figure

- (13088,8 (Sheepy Wast (2)) Total (1) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.
- Estimated total number of young raised to flight age. (5) Production:

Total Istor (1)018,

Interior Duplicating Section, Washington, D. C. 27580 VILYO GUIDING

3-1750b Form NR-1B (Rev. Nov. 195	7) F	UNITED STA PARTMENT OF TH ISH AND WILDLI OF SPORT FISHER	E INTERIOR		
GIND COPY of the	WATERFOWL	UTILIZATION C	F REFUGE HAB	ITAT CORRE	CTED COPY
Refuge Lever	Elemeth (Ce	st.) For 12-	month period	l ending Augu	st 31, 19
Reported by	dward J. 0')	6111 Title	Wildlife	Hologist	
(1) Area or Unit	(2) Habitat	the second	(3)	(4) Breeding	(5)
Designation	- Congression (see) and the Confidence and party	reage	Use-days		Producti
bas gam bollaj	Crops	Ducks	890,020	394	650
IVI	Upland Marsh	470 Geese 930 Swans	600		Station and subscription in sub-
Anodel TETTT	Water	Coots	4.600		
(Miller Lake(2)	and the second second second	400 Total	895,120	394	000
		63 08 63 63 03 60 60		CC CC CC CC CC CC	
	Crops	Ducks	1,680,400	80	3,180
th as cereals	Upland	239 Geese	5,400	16	36
WIL adiotras 1	Marsh Water	150Swans600Coots	1,095,000	bns	
(White Lake(2))	Conciliant in the conciliant	189(1) Total	8.780.800	Vode 36	3,105
	00 40 53 40 00 53				
vianoumet as	Crops 12	483 Ducks	36.228.200	10.560	26,540
		Geese	5,664,120	0.00	2,250
TOTALS	Sale in the second s	705 Swans	193,480	anem i	
			0,428,900	1,000	6,180
emergent	Total 45	402 Total	82,514,760	12,490	34,070
fusien deep	Crops	Ducks	Config (10) 10 and		
-bnetze bns no	Upland	Geese	o teor be teb		Million - College Sector Sector
vitoirita of a	Marsh	Swans	from the dee		Gill Report Contemportune
Llow plays	Water	Coots	water, embr	0000	
east bas du	Total	Total	estal geeb .a	and a state	
	Crops Upland	Ducks Geese	<u>estuaries</u>		CONTRACTOR CONTRACTOR OF
possible possible	Marsh	Swans			ORDing and an inclusion of the later
	Water	Coots	odie field o	Mag Mag	****
	Total	Total	upe bluens a	0 1 8 m	
		* * * *	6 6 6 6 6 6		*
	Crops	Ducks	davs is comp	-980 28	
	Upland	Geese	lation figure	Ugog	Collected Construction Descent
	Marsh Water	Swans Coots		Carlos Carlos - Carlos - Carlos	MCORDONAN Parameter
	Total	Total	Contractor and the contractor of the contractor	California and an Charles Concourted	Contractor of the Contractor
			63 60 63 63 60		
	Crops	Ducks	eery of bird	cate	
	Upland	Geese			
flight age.	Marsh	Swans			
	Water Total	Coots Total			
	1 1 1 1 1 1 1 1				

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All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

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(2) Habitat: 25 Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a , part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not , including, the water type and consists of the rela-0.81.8 , tively stable marginal or shallow-growing emergent 948,96 vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.
- (5) Production: Estimated total number of young raised to flight age.

Moning acquired

Interior Duplicating Section, Washington, D. C. 27580

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20,840

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3-1750c Form NR-7 pd (Sept. 1900)

WATERFOWL HUNTER KILL SURV

Refuge Lower Klamath

Year 196 5

and the second	2169		(Dased on 12-1/2 percent sample)					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Weeks of	No. Hunters	Hunter		Total	Crippling	Total	Est. No.	Est. Total
Hunting	Checked	Hours	Waterfowl Species and Nos. of Each Bagged	Bagged	Loss	Kill	of Hunters	Kill
19/9-15	HCT record mild be on to ar care	1,798 and to stion sh proport particu	White-fronted groce (261), Pintail (297), Mallard (250), Cackler (171), 6-W Teal (84), Gadwall (84), Widgron (63), Canada Groce (63) Shoveler (23), Redhead (19), Cinn. Teal (17), Snow grosse (8), L. Scaup (5), Caninaback (3), Raddy (2), Bufflehead (1), Connos Marganser (1)	ho have	tessive use to survey con those w ming each effort expe	coal is coal is nonly f hunter	(2) The dat col	7,669
10/10-22	886 ard (61), Green-	1,565	Caekler(100), Pinteil(61), White-fronted geose(43), Gadwall(34), Mellard(32), G-W Teal(31), Widgeen(30), Shoveler(20), Canad Geose(20), Cim. Teal(12), Redhead(4), Can vashack(1), Common merganser(1)	904 r of hor in dec (16), 6	total numbe but species). Redhead	844 and the waterf	1,100 (3) Red #(4) Ida Pin	1,389
10/23-30	186	566	Pintail(20), Cacklar(15), Malhard(14), Canada goose(14), Widgeon(13), White-from goose(11), Gadwall(6), G-W Teal(5), Cim. Teal(1), Redhead(1)	100 Mil Tevisy 1	(29 exedmon I	etot bro	1,052 bef (2)	722
10/30-11/5	959 Indiag	1,289	Pintmil(94), Mallard(70), G-W Tmal(45), Cnekler(42), White-fronted geose(41), Canada goose(31), Widgeon(18), Shoveler(18 Bafflehead(0), Ondwall(5), Snow geose(5), Redhead(3), Cimm. Teal(2), Raddy(1)	196 6. 10 100 10 201	801 Lumms 5 and s total mun cked (Colum		888 (7) Tot (8) Est	1,166
11/6-12	256	1,635	Pintmil(108), Hallard(108), Cackler(31), Widgeon(28), White-fronted geose(24), 6-W Teal(14), Canada goose(8), Baffleheed(8), Shoveler(7), Redhead(2), Snow geose(1), End dy(1).	385	78 projected	410	1,090	1,763
11/18-19	306	1,123	Mollard(77), Pintail(64), White-fronted geose(30), Widgeon(27), Cackler(21), Bufflehend(17), Canada geose(8), 6-W Teal (6), Gadmall(6), Shoveler(6), Geldeneye(8) Smow geose(4), Redhend(4), Canvasback(2), Cinm. Teal(1), C. Merganser(1).	289	86	375	1,259	1,638
			(over)					

(Sept. 1900) Same Clevel INSTRUCTIONS (Tared on 12-1/2 per (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. 'Successive weeks follow the same pattern. 31-2/01 (2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data. 031,1 1.688 Cashler (100), Pistari (01), White-fronted 38-0 (\B) (3) Record the total number of hours the hunters spent hunting on the refuge. 31), Widgeon(36), Sheveler(36), (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Greenwinged Teal (1). 1.682 Pintail(20), Caekler(10), Malbard(14), - ... \ O.E Record total numbers of waterfowl bagged. (5) (6) Record total numbers of waterfowl reported knocked down but not recovered. 100-0010 1,230 Findeil(06), 101 Les (20), 0-7 1001/480, Total of Columns 5 and 6. Cachilar (43) White-fronted gooss (41). (7) Canada goose (31), Widgeon (10), Showeler (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2). Refield(3), Cinn. Teal(2), Rolly(1) (9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$. 888.1 leal(14), Canada goose(0), Ruffleiren(0), Showeler(T), Medicald(2), Snow mose(1), 882.I Mallard(TT), Mintail(M), Minta-fronted 1/13-19 881,1 goase(32), Widgeon(27), Cachier(21), Porriehead(17), Canada geese(8), G-W Teat (6), Gaduall(0), Shovaler(0), Galdeneye(6), Snow guose(4), Redhead(4), Commetach(2), Cinn. Teal(i). C. Morgunser(i). 80348-60

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(Sept. 1500)

WATERFOWL HUNTER KILL SURV

Year 196

Refuge Lover Klamath - Cont.

			IMSTRUCTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
weeks of	No. Hunters	Hunter		Total	Crippling	Total	Est. No.	Est. Total
Hunting	Checked	Hours	Waterfowl Species and Nos. of Each Bagged	Bagged	Loss	Kill	of Hunters	Kill
11/20-26	439	1,687	White-fremted geose(68), Pintail(67), Mallard(30), Widgeen(52), Cackler(50), Emfflehead(20), GW-Feal(19), Enew geose	365	POW OVICES	444	660	666
1.2.2		da noite	(17), Canada Goose(14), Sheveler(11),	a minim syst or	to survey rom those w	goal is a only f	(2) The	100283
	of no.		Geduel1(2), Buddy(2), Cinn. Teal(1),		rom teose w	lected d		
	ar care		Rodhead(1), Canvashack(1), L. Secup(1), C. Mergamaer(1).		erre erre erre trolle		the	
11/27-12/3	200	755	Pintail(90), Mallard(80), Widgeen(56), White-fronted geoce(15), Caakler(12), GW-	204 rod 20 1	88 Lotal number	att ba	461 (3) Rec	717
	ard (61), Green-	ry: Mal	Teal(11), Shoveler(8), Canada goose(6), Snow goese(4), Ress' goese(8), Cinm. Teal (1)	in dec	selectes	t waterf	(h) IAs	
-/		Eco		100	DESILOUA			
R/4-10	162	793	Pintail(40), Malhrd(48), Widgeom(87), Canada goose(34), White-froMed geose(17),	199	(1 86 1 mmbers o	234	078, xda	501
			Cackler(6). Eheveler(0), G-W Teal(3), Enfflehend(2), L. Scaup(1), C. Mergenser (1), Cost(1)	f water	l numbers o			
1/11-17	111	482	Widgeon(25), Canada geose(28), Sheveler(13 Pintail(8), Mallard(7), Caekler(5), White-		23 Lunia 5 and	118	CHC Tot	366
	galbul	wek, in	fronted(3), Chan. Teal(3), Snew(2), Bed- head(2), GU-Teal(1), Gadwall(1)	lo rec	a total nur	imate th	(8) Est	
E/18-24	79	835	Shoveler(51), Mellerd(14), Pintail(11),	104	20	194	167	260
			Canada goose(11), White-fronted(4), Wid- geom(4), Snow(3), Buddy(3), Cinm. Teal(2), Gadmall(1)	to 3.00	projected	l sample	(9) XH	
r/25-91	52	250	Canada goome(57), Uidmoon(37), Pintail(25) Mallard(14), Sheveler(8), Cackler(3), Gad- wall(1)	145	12	157	189	559
1/1-6	44	200	Canada goose(15), Widgoon(6), Shoveler(6),	35	3	38	114	90
-/			Pintail(5), Cackler(3).		-			
	03-8460							
			(over)					

Yaar 1960 . Acres - diterentil manual INSTRUCTIONS (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days 12-00/00 . . . later. Successive weeks follow the same pattern'. (2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data. (00) dog Sid , (00) Maile , (00) Listers 127-12/3 20 1 200 Record the total number of hours the hunters spent hunting on the refuge. (3)preler(0), Detado Soose List waterfowl species in decreasing order, of numbers bagged. Sample entry: Mallard (61), (4)Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Greenwinged Teal (1). 330 (72) gowent (W , (Sb) Hand Lold , (Cb) Linker (S7), SI-USS 203 Capacia goase (34), White-Fronted modes (17 Record total numbers of waterfowl bagged. (5)Record total numbers of waterfowl reported knocked down but not recovered. (6)Widmon (28), Canada goose (28), Blove ler (19 - 1 (7) Total of Columns 5 and 6. Pintell(9), Billard(7), Cashler(3), Maite-Estimate the total number of hunters who hunted on the refuge during the week, including (8)hunters checked (Column 2). A. S. - 1 Listeler (St), Mallstel (M), Fisteril 05 (9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$. 157 Creada gaose(57), Widgeon(37), Pintsil(36) 18-3215 Hallard(M), Shaveler(0), Cachler(3), Gal-1 Canada goase [15], Misson(6), Gioreler(6), Mintail(8), Cachiler(8).

80348-60

3-1750c

(Sept. 1900)

WATERFOWL HUNTER KILL SURV

Refuge

-

Lover Elemeth - Cant.

Year 196

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos	• of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
TOTAL	uld be on to	994,81 and to ation shi proport particul	Pintail(906), Mallard(763 mosse(626), Caekling goose (396), Camada goose(308), Sheveler(180), Godwall(14 Show goese(44), Cinm. Tes (36), Raddy(9), Cambaches (7), Goldsmeye(6), C. Mar	•(460), Widgeon 6W-Feel(218), 3), Bufflebond(54 1(40), Medhead h(7), L. Seeup	, bebn	to survey to survey con those a uring each affort expe	BOB , 4 goal is nonly f lected d hunter ald be t	col the	16,950
Average Per Einter	ard (61), Green-	1.1 9.79 (E) seco	ent hunting on the reluge. and scorp 64. Sample ent on edard 60. (h), Canada C		1.26	bwl species), cedbead (1).	liei 1.46		
	lading	week, in	ked down but not recovered		6.	lumna 5 and	l of Co	(7) Tot	
			= Column 8 x Column 7.		a 2).	sked (Colum	ters che	nori	
(Fiold d	ata by enforc	mont po	recamel)	(over)	Report		ert Abor Palmer	y, Eduard O Seltora	He111

WATERFOWL HUNTER KILL SUR

Form NR-7

No. Hunters

Leansaries superiorize to said blam

Laver Manufil - Cont.

Refuge

and make and

INSTRUCTIONS

(1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.

- (2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area bunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.
- (3) Record the total number of hours the hunters spent hunting on the refuge.
- (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: 'Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Greenwinged Teal (1).
- (5) Record total numbers of waterfowl bagged.
- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.

Toar 1965

858,91

- (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
- (9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$.

Terorted by: Colort Maey, Mary Cile111 and Colorr elars 3-1752

Form N' ? (April 1946)	Refuge	KLAMAS		ND GAME BIRD		TANK	IARY	to	APRIL , 19 65
		D. AARSIC (B.)					Inter a	.20111 31660	
(1) Species	(2) Density		(3) Young Produced	(4) Sex Ratio	R	(5) Removals		(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat		Number broods obs'v'd. Estimated Total	Percentage	Hunting	For Re- stooking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-Necked Pheasant bas beau	Greasewood-Croplan Harsh, Etc. 13,800 Acres	ad eno gener e Land e Cadeb sound ple en thed un	N 0 N	provie special od is doom opiderer, a bord broken bitage special broke special	R	isi Atton Antra An	ton blan siri siri sons sons sons	2500	
Valley Quail	Greasewood, Sege, Greaselende 5,600 Acres	n obsa 	B - Capada up - Lida unicay	ung produced ding induitat inarily to y	tryc bree a pr	N E	non b Stiposi s ciditi	150	(2) YOUNG PRODUCE
				*9103				a renob	

· Only columns softcable in the refor covered should

renoved during the report perio ber in each cat Indicaton 11 mm

Estimated total makes using the refuge during the seport period. This may include resident firds plus these digrating into the refuge during cer ain sessons.

t been bo feet stanthat determine opulation and area covered in surve Include other per foot tod spectfloally informatio

. DB BLI S

0' He111

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 Nc. 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.

3-1752

Form N ? (April 1946)

R

UPLAND GAME BIRDS

Refuge Lover Klamath Months of Kay to August , 19 65

(l) Species	(2) Density		(3 You Produ		(4) Sex Ratio	R	(5) emova	ls	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat		Number broods obs'v'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	Greesewood-Grees lands, Marsh and Agric. 17,000 acres	ed enc gener e land sted f mint pla sp	27	1000	2LN: 100F	N	iti nici intern intern ber te tend c	typ Lon plan stri stri ould Lona	2,000	Wet, cold June weather very hard on upland birds resulting in smaller, later (renesting) broods than in 196k
Valley Queil	Greasewood-Grass lands, Marsh and Agric. 5,000 acres	eado n	2	80	arees should be produced ding habitet	ia ca if yo	N	E	150	(2) YOUND PRODUCE
	uts, etc. Include d	ageng	vexa	- 65)	inarily to a uble		afogi af	ntintin enest en	This co office s	(4) SEX RATIO:
	g the report period. sport period. Ind. refuge during correct	d durin g the i	avoniri Aurus Sata	vier gante statut	in each calle naing the r plus those	iber sber	l nu n lo tre 1	tod tod b steer	Satimati Satimati	(4) HIMOVALSE (4) TOTALE
	a covered in survey. requested,	ris bra (Iles)?	nolte	ingoa tear a	datariatelo datariatelo datariatelo	t pe	u bo	tabie 10840	tabibai sbuioit	i Ethagar (Y)

B.J. O'Ne111

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 Nc. 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.

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- (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.

F3.2. 3.3 .

					E BIHDS.*	Form MH-2 - UPLAND GAN
(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	(5) Removals	(6) Total	(7) Remarks
ommon Name	Cover types, total per acreage of habitat Bird	ube pood tal	Percentage	Hunting For Re- stocking For	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
ag-mecked pheasant bns be	17,000 acres agri., marsh and greasewood-grass	cure the gan riculture La mbolr listed Figures sub tive sample	60:100 60:100 60:100 60:100 60:100	bes. Covir 5 but not 10 m 1d hurdwolds, e, etc.* 1 be used 1 and counts of 1.6 used 17 al	3,000	Wet, stormy weather first 2 days of hunting during which all but Units 2 & 3 were opened to hunting
lley Quail	5,000 acres juniper, greasewood-grass, fringe marsh and agriculture		produced, b g habitat. rily to wild e.	amber of round at a boot of a piles at a applies at ab	150 al	(3) YOUNG PRODUCED: (4) SEX RATIO:
V	ring the report period. e report period. This m the refuge during certai	te diring th		au momun Lat		
Also	area covered in survey. Ny requested.					(7) REMARKS
		beet	ed bloods b	period covere	adie to the	* Only columns appli

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES:

Use correct common name.

(2) DENSITY:

a derifi rediese verain . in dokdy initiag during he avo ill bat Units 2 & 3 were palitant of borsee

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.

Applies particularly to those species considered in removal programs (public

- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat. B.000 seres fraiber. Ling) voligy
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available. otsy instand
- (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.
- Indicate method used to determine population and area covered in survey. Also (7) REMARKS: include other pertinent information not specifically requested.
- * Only columns applicable to the period covered should be used.

THE MICH

(1) Species	(2) Density	(3) Young Froduced			(4) 1078	ls	I		(5) 59 ⁸ 5	Int	(6) troductions	(7) Estima Total B Popula	ited. Jefuge	(g) Sex Eatic
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re- stocking	Sold	Jor Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
ale Deer	Fringe agricultural and unrah; adjacent jumiper- sage	Bot. 10	2	0	N	E	21		an en ni ba 25 - 09 es Jaszi Lbul	41 140 140 140 140 140 140 140 140 140 1	night beden h the deri two sounds, and be use tounts he	80	30	
renghorn antelepe	and the rear	10. 100 fe Rai, 2			1	10 10 10 10		nice d'au	otal 181 m	10	anlis f :00 kpihal	800 core corector 800 corector 800	80	
	.hotifes ass foots foll	alfoy ald		10		1006 195 5 (265		10	ano e aprile		n does abilal (i			

Reported by ______ Edward J. 0'Neill

Form NR-3 - BIG GAME

Line . . wister

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisians white-tailed deer.
- (2) DENSITY: 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 total number of young produced on refuge.
- (4) REMCVALS: Indicate total number in each category removed during the year.
- (5) LCSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIC: Indicate the percentage of males and females of each species as determined from field observations or through removals.

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3-1754 Form NR- (June 1945)		KLAMAT	1	LL M	OTTO	MSTEN)		ending A						
(1) Species	(2) Density	ni bere	etd		(3) ovala		10 10	no fiain D	lsposi		f Fure	-	198 (1	(5)
of Sorth	Iddandost belisi-eiidw Sound in the "Field Book	guirrel. 20 ars 1	8 X 5 J	1. f	arts th c	ips Vi sbasi	TB-s Isoin	Shar	e Trap	ping	nge	ted		Total Popula-
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hun ting	Fur Harvest	Predator Control	For Re- stocking	For Re-	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	tion
Muskrat -seroini	Cattell-Hardsten balan marsh types 2670 ac		ad. 1	etoa ate	in by a	lessed lessed	atp pre	1-8828	501	125	11-2			6.000
Coyote st ruoso a	Marsh-Upland types 9620 acres	jaoxa ·be	99 123	9 18 97 3	20	L bee	100	larioital	n.Edd					30
Jackrebbit	Opland, Grantlands, Agric, frings, etc.	na doga abooda,	122 103 103	not not	bud M	iolis iolis gus	ntor nice	nes on leatred Mea: s	the. The					300
Cottontell	a a a a	1000			-		6 C	a a grant and	DAIRS]					200
Bobcat	11 11 12 12 12	DR. DR. RO	- 19	19.12.11	HP-DIT	198-01	onna	and states	2.1.1.8		0.4 4 10	1.220		20
Skunk	11 II II II	N THE REAL PROPERTY.	1	1.48.10.10	11 A.	-	1994		21.07 2,80		1000			200
Raccoon	Marsh-upland 9620 ac	and the second second	- 33-	13	-48	49		ENGLA D.	Section .					15
Harmot	Grasskabds-fringe agric. 6950 acres			12.	-			200 1094.8. No	Leng		See in		1.2.2	200
LCTTO L	Marsh-upland 20.010				0.0		2000	ana aaso	STRAFT.				West to	50
Forcupine	Junipar-sage 6950 a	6	- 53	-17	8	25		ma (°. 1000 a)						20
Contraction of the second	a contra la contra de la contra d	Contraction of the second				Course of	1122	0.14 A 20						

On exare-traped hars list the parait number, trapper's share, and refuge share. Indinate the number of pelits an ppel to market, including furs taken by Service personnel. Petal number of pelie of each exectes destroyed boostes at unprimesees or dama ad condition, and tars doneted to institutions or other egencies

* List removals by Predator Animal Hunter

REMARKS:

Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not apacifically requested.

litizated total population of each species reported on an of April

REMARKS

Reported by

12 100

da ed b. pode

Edward J. 0'Idll

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

> Use correct common name. Example: Striped skunk, spotted skunk, shorttailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

Applies particularly to those species considered in removal programs. 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, bottom land 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) REMOVALS:

(1) SPECIES:

(2) DENSITY:

100

Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF TUR:

TRANSFER . & Deressie

IUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS:

Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3.1755 Form NR-> DISEASE	
Refuge Lower Klamath	Year 19. 65
Botulism	Lead Poisoning or other Disease
Period of outbreak 0/5 to 10/8/05	Kind of disease Foul Cholers Load Poisoning
Period of heaviest losses 9/5-11	(1) snow & white-fronted geese Species affected (2) Canada geese, swans, diving ducks
Losses: (a) Waterfowl (b) Shorebirds (c) Other Number Hospitalized (a) Waterfowl (b) Shorebirds (c) Other No. Recovered (c) Other (c)	Number Affected (1) (2) (1) (2) Species Actual Count Estimated Snow goose 18 - 20 10 White-fronted 2 - 10 - Whiteling swams 3 6 5 10 Ducks - 11 - 100 Number Recovered None Hare None None Number lost 25 120 (1) Probably See Jeegsin Co. Polta area
(c) Other	Source of infection (2) Shallow places in hunting press (Units 4, 8, and 9) Water conditions Above mermal ensuits and levels due to winter flood conditions
Water conditions (average depth of water in sickness areas, reflooding of exposed flats,etc. Stagmant water 0-8"; area contained some 1,000 acre feet of water remaining from 1904 Christmas floods	Food conditions Lower than average due to floods
Condition of vegetation and invertebrate life Area est. 10 percent covered by filmmentons algee Remarks Massace confirmed by Bear River Research Sta. (1) Maspital not in operation; birds injected with anti-taxin and released at fresh water (Unit i thru 9/18 after which birds were released without treatment.	Remarks (1) Incidence occurred in March and April. (2) Incidence occurred in January to March PA) Disease (1) and (2) confirmed by Bear River Research Station and Calif. Fish & Game Dept. labe. Reported by: Edward J. O'Heill, Wildlife "Hidligget" 53818-59

P

PUBLIC RELATIONS

Icen 3: Explore - Incrane grebrade Leg (See Instructions on Reverse Side) - Instructions on Reverse Side)

Refuge Lover Klaunth Calendar Year 1965

a. Hunting 13750 b. Fishing 0	c. Miscellaneous 17652 d. TOTAL VISITS 31312
la. Hunting (on refuge lands)	2. Refuge Participation (groups)
TYPE HUNTERS ACRES MANAGED BY	Tite' brow Refer to Tule Lake section combrue' Arerton
Waterfowl 10898 14927 FWS	TYPE OF ORGANIZATION NO. OF NUMBER IN GROUPS GROUPS GROUPS GROUPS GROUPS
Upland Game 2852 20457 FWS	Sportsmen Clubs
Big Game NONE	Bird and Garden Clubs
Other Other Other Other Other	Schools
* reverts to 14927 after the first two days of	Service Clubs surger of service of pringer
Man-days of bow hunting included above	Youth Groups
Estimated man-days of hunting on lands adjacent to	Professional-Scientific of the second period of the second
end samples 3020 d by season of vesther. A con	Religious Groups
lb. Fishing (area open to fishing on refuge lands)	State or Federal Govt.
TYPE OF AREA ACRES MILES	e of Other Intercomment Canal unless they stor to
Ponds or Lakes	3. Other Activities
Streams and Shores	TYPE NUMBER TYPE NUMBER
lc. Miscellaneous Visits	Press Releases Radio Presentations
Recreation 11450 ⁴⁴ Official 1082	Newspapers . (P.R.'s sent to) Exhibits
Economic Use 5030 Industrial 0	TV Presentations Est. Exhibit Viewers
** approximately 9350 visitors stopping briefly whi	le traveling State-line highway
3-1756 (Rev. 4/63) Reported by: J.T. Annear	

3-1756	approximately 9350 visitors stopping briefly while heported by: J.Y. Annear	6 FLOIGTIDE OFDIG-TIDE BIERS	
		CTIONS	Est. Exhibit Viewers
Item 1:	Total of a, b, and c, equal d.	(P.R.'s sent to)	Exhibits
Item la:	"Visit" - definition. Any person who is on refu the purpose of: hunting, fishing, bird-watching visit, or similar interest. INCLUDE - those who highway because of an interest in the area. EXC not directly related to the refuge, persons usin of traffic, and those boating on navigable river observe wildlife on the refuge. <u>Computing visits</u> . Where actual counts are impra end samples varied by season or weather. A conv used when accurate figures are not available. If boats based on range of usage. Count a camper of <u>Acres</u> - of refuge open for each type of hunting. <u>Managed hunts</u> require check in and out of hunter	ge lands or waters during a , recreation, business or e stop within the refuge whi LUDT - persons engaged in o g refuge as most direct rou s or the Intercoastal Canal actical, "sampling" is used rersion factor of 3.5 (of pa fach refuge will develop a c ince for each 24-hour period	conomic use, official le traveling on a public il or other industry te or principal avenue , unless they stop to with midweek and week- ssengers per car) is onversion factor for . or fraction thereof.
0 B	Other - INCLUDE crow, fox, and similar hunting. Lands adjacent to refuge. Normally considered w sampling procedures cover a wider area. For big		
Item lb:	Acres of streams open to fishing, if practical; is primarily for coastal fishing.	otherwise just miles open.	Information on "shores"
Item lc:	Recreation. INCLUDE photography, observing wild center use, tours, etc. TOTAL Recreation, Office		boating, camping, visitor
. Visit a.		, i.e., oil industry or fac	tories. EXCLUDE these
	INCLUDE the "On Refuge" groups in Items 1c and 1 meetings in which refuge employees actually part		
Item 3:	Exhibits - INCLUDE displays, fairs, parades, and	l exhibits OFF the refuge; E	XCLUDE those ON.

Bureau of Sport Fisheries and Wildlife

3-1757 Form NR-7 (Rev. June 1960)	NONAG	RICI JRAL COLLECTIONS, RECEIPTS	(1) S, AI PLANTINGS	0
(Rev. June 1900)	Refuge	Lower Klamath	Year 19 65	

	(See			s and Recks, tre				(Plant Marsh - Aqua	ings tic - Upland	.)		
Species	Amount (Lbs., bus., etc.)	(2) C or R	Date	Method or Source	Cost	(3) Total Amount on Hand	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount and Nature of Propagules	Date	Survival	Cause of Loss
SEE TOL	Server and	CTIO	the second				Dike slopes south side Unite 6.7.8	17#/▲***	28 A		March	Good	
and the second							Dikes & slope 17-9. 17-10		85 A		Pob.	Geed	1/2
							Lateral en conth side 17-6, 7, 8	34#/A *	4.9 A		March	Good	
							White Lake Unit 12 Unit 6 Unit 2 Miller Lake	*** 10 #/ A	1,198 500 1,600 80 300		July	Tair- excellen	
(2) C = C	d aquations, cover ips, foo	ns an note ted: c patc d pat	d R = 1 surplu	Receipts		-8	D	erennial i	We was seen	tgress, 35% re: 82% tel ini ryo.	1 whea	tgrass, 19)	

Reported by: Annear

3-1758 Form NR-8 (Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

		ittee's		rnment's Sl			m-4-7	Green M		
Cultivated Crops Grown	A P	Harvested Bu./Tons	5 10 1	Bu./Tons	A .	Bu./Tons	Total Acreage Planted	and the second s	and Water- rowsing Crops nd Kind	Total
lefuge forming Gaines wheat * Gaines wheat Sharecrep Hannchen Barley Nexus Barley Nexus Barley Nexus Barley Park Gata Nexus Bye	rougal to state	7 and an	- Baport all accesse plantade	q aqoro to dramurevian - intoron e sit word - betasvindru .imu of affailtsva nista To sistand 1 alq add dupordd ivoltatas of al	774 400 671 313 80	307 Y. 11,500 40,603 35,702 1,600 350	774 400 671 1,601 90 64 619 13	Green grain-	Ag. Land	
						0.5.5	1 5-10	fleede		
lo. of Permittees:	E Sige	al Operatio	4 5		1.12	4 4 8 4	1 × 210			
o. of Permittees: Hay - Improved (Specify Kind)	Agricultur Tons Harvested	Acres	Cash Reven		Haying BRAZING	N umi	1 × 210	Grazin	Cash Revenue	ACREAGE
Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash	ue	1.12	N umi	ber mals		Cash	38
Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash	ue (RAZING	N umi	ber mals	AUM'S	Cash Revenue	ACREAGE
Hay - Improved	Tons Harvested	Acres	Cash	ue (Gattle Other	N umi	ber mals	AUM'S	Cash Revenue	ACREAGE

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DIRECTIONS FOR PREPARING FORM NR-8 CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

<u>Cultivated Crops Grown</u> - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the <u>Acres</u> column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the <u>Bushels Harvested</u> column. Report all crops harvested in <u>bushels</u> or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

<u>Government's Share or Return - Harvested</u> - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. <u>Unharvested</u> - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

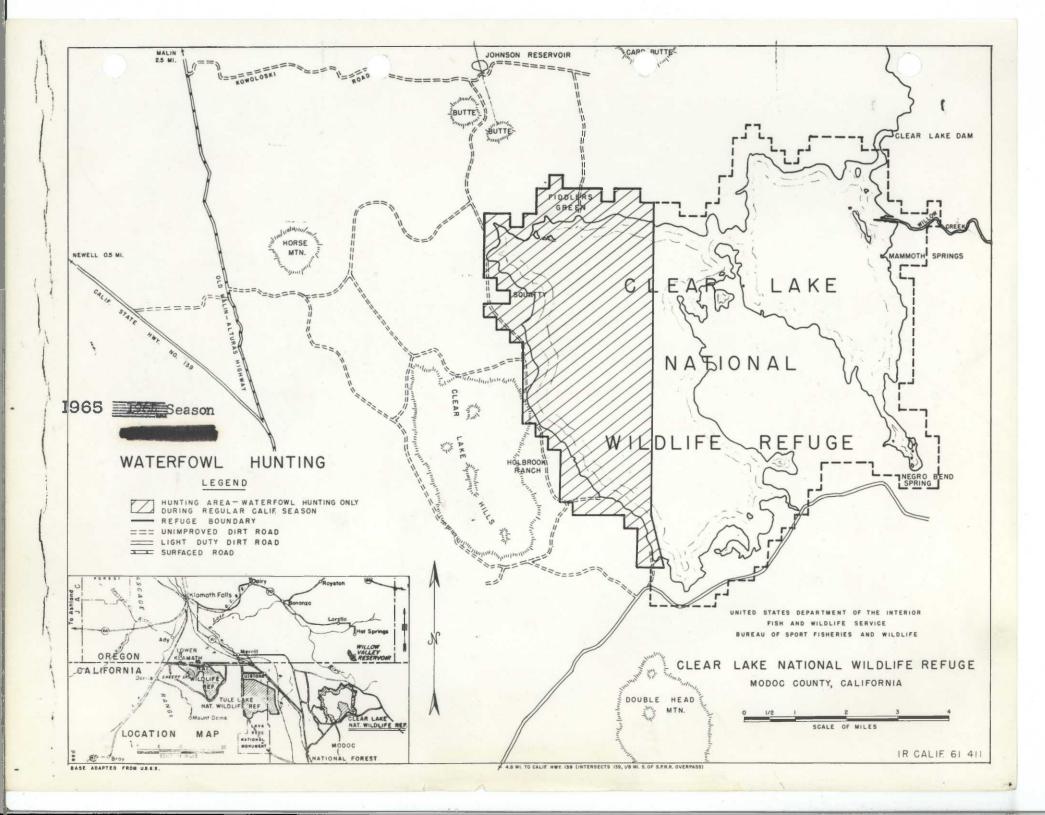
Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under <u>Cultivated Crops</u>, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.





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Clear Lake National Wildlife Refuge 1965

I GENERAL

A. Weather Conditions

Refer to Tule Lake Section.

B. Habitat Conditions

1. Water*

The Bureau of Sport Fisheries and Wildlife has no control of water on Clear Lake National Wildlife Refuge. Clear Lake is managed as a reservoir for irrigation water by the Bureau of Reclamation.

The only recorded elevation in December 1964 was 4464.90' on December 15. Following the December storm and above normal precipitation in January and April, a gage reading on April 30, 1965 showed elevation 4474.78' reflecting storage of 302,900 acre feet and a rise in water surface elevation of 9.88' from the December 15 reading. Storage of 302,000 acre feet is 119 percent of average.

The first release for irrigation was made on April 28. This and subsequent releases combined with evaporation, transpiration and seepage drew the reservoir down gradually to an elevation of 4470.90' on December 31, 1965.

There was no botulism on Clear Lake Refuge in 1965.

2. Food and Cover**

January found Clear Lake Refuge almost totally under ice and well covered with several inches of snow. Bird use was restricted to small openings at Mammoth and Negro Bend Springs along the course of Willow Creek. Snow conditions forced the antelope herds to move out and into the south portion of Tulelake Basin (Copic Bay).

February 4 through 10 the 3 to 6-inch ice cap on Clear Lake started to break up along the southwest shoreline. This break-up of winter's icy grip brought immediate response from swans and ducks feeding and loafing in and around Mammoth and Negro Bend Springs.

*Nuess **0'Neill Spring thaws added considerably to the storage in Clear Lake which had already received a good supply during the previous December floods. Mammoth Springs was completely inundated in early March. The rocky islands of the east portion were much reduced in size by high water and virtually all the rocky islands in the west portion of the area went under. These high waters eliminated favorite nesting, resting and feeding space for ducks, geese, great-blue herons, and various raptors. 2

April 5 and 6 wet snows blanketed the general area again but did not force any of the bird or mammal species out of the basin.

High water and shoreline changes altered the habitat and cover conditions considerably. The sage grouse strutting area along the southwest edge of the U-Peninsula was unavailable (flooded) in the spring. On the rocky islands there is always a scarcity of nesting material and cover but this year it was less as high waters and wave action drifted most debris away. Many favorite goose and duck nesting sites up Willow Creek were under water.

Range conditions on the U-Peninsula were good with ample moisture and favorable springtime temperatures. A variety of forbs important to antelope and sage grouse flourished.

Pelicans, great-blue herons, cormorants, night herons, California and ring-billed gulls and Caspian terns nested as in previous years. Earliest activity was noted March 23 when 50 adult pelicans were at the rock islands in the eastern part of Clear Lake. At this date, three pelican nests, containing six eggs were noted. Cormorants (20 each) were present as well as great-blue herons (30 each). Great-blues had 15 nests - four with four eggs and eleven with one to three eggs.

Nesting efforts in two separate colonies resulted in an eight percent increase in young pelicans hatched compared to 1964; cormorants increased by 50 percent more young produced over the rangelands. Intermittent periods of moisture kept water basins, tiny playas and lava catchments replenished for good distribution by wildlife forms.

The Fiddler's Green area north of Unit I replaced part of the lost shoreline grazing for Canada geese. Spring flocks also ranged into Steel Swamp meadows until spring range grasses emerged on the U-Peninsula.

Fish eating species apparently found more than ample supplies in Clear Lake according to our findings (see: Fish).

Medusa head grass (Elymus medusse) continues to spread over every acre of Clear Lake Refuge. This year we found successful invasion of all rocky islands and peripheral shoreline. With favorable moisture it grew to heights of $l\frac{1}{2}$ feet obscuring short grass like <u>Muhlenbergii</u> and, in the late summer, posing a potential range fire hazard. It's

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too late to prevent invasion of this noxious grass and impractical to attempt complete eradication with knowledge and tools at hand. Wet conditions during the August antelope hunt saw many pounds of the medusa seed scattered with mud as hunters drove to every accessible point. 3

Fall-winter use of the refuge by waterfowl was at times higher than in 1964; however, total use days by some species were off considerably. Shallows which formerly produced aquatic plant production proved too deep in the constantly turbid water; however, newly created shallows in part replaced these losses before summer was over.

II WILDLIFE*

A. Migratory Birds

Most exciting item under the subject heading is the nesting by Canada geese. Loss of former haunts through floodwaters may have caused the species to seek out the Clear Lake Refuge. March 23 the writer found geese paired and nesting in what appeared to be every suitable site available. The rocky islands in Negro Bend Bay, the east edge of Clear Lake and the island in the vicinity of the dam were preferred sites. Two islands of approximately three acres supported 26 goose nests with a total of 104 eggs. One island of one acre size supported 15 goose nests. Several nests were so close together the incubating birds could reach one another. Close scrutiny revealed these were on former pelican nests remaining as mounds of twigs, etc. from the previous year. Another circular island, less 100 feet across the center had 32 active and eight abandoned goose nests April 2. If there have been previous comparable nesting efforts on the area, we are not aware of them.

Goose nesting and total goslings noted went up 300 percent over last year's tally. Total duckling went down slightly.

Great-blue herons produced 20 percent less young; and black-crowned night herons brought off the same number of young as last year. The greatest pelican nesting effort was at the tip of the U-Peninsula which colony has progressively grown over the past three years.

The presence of five pelicans (immatures) on the area as late as November 30 was unusual. In mid-December aerial surveys turned up a lone immature at the tip of the U-Peninsula (we wonder if possibly the pelican which chose to winter at Modoc Refuge, Alturas, among Canada geese could have been one of the late migrants from Clear Lake).

Shorebird use of the area was not unusual compared to other years.

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B. Upland Game Birds

Nesting sage grouse were again plagued by cold, wet storms in June. No broods were seen on the area. Regular census-survey transects were not accomplished due to numerous details of higher priority. Encounter of summer flocks confirmed the belief reproduction was low judging from number of immatures seen.

Both cattle and sheep again used the nesting areas south and southwest of the refuge. Red Lake became literally pulverized as a concentration area. The Mowitz Creek flow held up well and signs indicated good bird use. Winter aerial observations indicated only a few birds used that area in December. The more inaccessible country east of Mammoth Springs was visited and very few young grouse noted in June.

Quail were seen rarely in the Clear Lake area.

C. Big Game Animals

On January 8 and again January 15, winter conditions caused antelope to move out of the Clear Lake hills country and down into Copic Bay of the Tulelake Basin. Ranchers estimated 300 to 400 animals were in the January 15 herd--possibly a union of both the Clear Lake and Mount Dome herds. Three were seen on the Hirschback ranch east of Newell on one occasion where dogs were harassing them.

In February the herd was observed to move back toward summer ranges. March 30 we observed 30 north of Fiddler's Green. At this time an additional 80 were on the refuge northwest of Squatty Butte.

April 2 two antelope (one female yearling, one adult female) were found floating in Clear Lake off the tip of the U-Peninsula. Condition of both was good. Field autopsy by Bill Johnson of Health, Education and Welfare and the writer concluded they may have been unduly harassed and took to the 42° water. (The incidence coincided closely to aerial motion pictures of the herd "in action" seen two weeks later on a local TV program.) In July two more antelope were found afloat south of the dam. Autopsy again indicated extreme over-exertion before drowning.

D. Fur Animals, Predators, Rodents and Other Mammals

Cottontails and jackrabbits continue at a low population--the lowest in several years.

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Coyotes have been seen less this year than at any time in three years. They seemed to follow the sheep herds more than native prey species and sheepmen were active with control work in the general area. Low numbers seem to be confirmed by the fact numerous lambs lost from the O'Connor herd, under new lambing-herding techniques, lay on the range untouched except for raptors. Along one-half mile of Mowitz Creek, south of Negro Bend, we counted 19 dead lambs under junipers, sage, etc. which were never eaten.

Bobcats and mountain lions are still considered very low in number. High prices last year brought renewed interests by trappers; however, the take was negligible.

Badgers increased slightly according to signs on the U-Peninsula range.

Porcupines are at the lowest population in four years. They were observed mostly on an on-off basis during the year.

Ground squirrels were literally flooded out of much of the Negro Bend, Mammoth Springs and U-Peninsula areas. The population was comparatively low in 1965.

F. Other Birds

Mourning doves enjoyed very good nesting conditions. There appeared to be a good hatch and migration in September brought the population to highest numbers in years.

G. Fish

(See: V FIELD INVESTIGATION OR APPLIED RESEARCH)

The question of eagle lake trout and crappie, introduced several years ago, came up again. Surveys were made during the year to bring our knowledge up to date and substantiate conclusions against a fisheries under existing conditions.

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IV RESOURCE MANAGEMENT

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A. Grazing*

The grazing lease on the Clear Lake Peninsula or "U", administered by the Bureau of Reclamation, expired in late December of 1964. Invitations to bid on the new lease were circulated and the high bid was submitted by Mr. James Henry.

Mr. Henry's lease was cancelled when it was discovered his partner was a lessee on Tule Lake Refuge. Reclamation regulations do not permit awarding more than one lease to an individual or company.

Invitations to bid were circulated again. Mr. Robert Byrne of the Dalton Land and Cattle Company, holder of the expired lease, submitted the highest bid and was awarded the new lease. This lease is on a yearly basis with a four-year option to renew.

V FIELD INVESTIGATION OR APPLIED RESEARCH**

A. Progress Report

Water Quality Study

Cooperative work with Health, Education and Welfare-Federal Water Pollution Control-on water quality studies of the Lost River and drainage continued through the year. Since Clear Lake Refuge is a part of said drainage our cooperative work consisted of joint surveys, water, plant, fish, etc. collections for pesticide residue analysis. Work started April 2 with zooplankton, benthos, and water samples. It had always been assumed Clear Lake was a pesticide-free basin; however, trace residues of DDD and toxaphene showed in initial gas chromatograph tests. It is presumed livestock sprays used on or adjacent to refuge lands were the source. The study will continue for at least another year.

Radiation Studies

Collection of antelope and deer hocks, from the local herds, for Atomic Energy Commission and Health, Education and Welfare studies were continued in conjunction with regular hunting activities. This is the second year specimens have been sent to the Las Vegas, Nevada lab.

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Fish Investigations (Spring Survey)

In order to satisfy inquiries by sportsmen, enthusiasts, wildlife workers, etc. it was decided more current information was desirable. 7

May 12 the writer and Biologist Bill Johnson of Health, Education, and Welfare, Federal Water Pollution Control, set out two 10' x 200' gill nets at the mouth of Negro Bend Bay and two at the mouth of Willow Creek. The following morning the nets were lifted with the following results:

- A. Negro Bend Bay: Three Tui chubs from 5" to 10".
- B. Mouth of Willow Creek: Thirty-five Tui chubs from 5" to 7"; four Tui chubs from 7" to 10"; one shortnosed sucker 14".

About two miles upstream a sample area 300 feet long was retenone-treated with the following noted:

- (a) Abundant Tui chub 3" to 8" (estimated 10-15 lbs.);
- (b) Two brook lamprey (one captured);
- (c) Lost River suckers, several 6" to 12";
- (d) Sculpins (Cottus sp.), numerous.
- C. Dam narrows near head of Lost River: Two gill nets (10' x 200') set along base of the dam with the following noted: (Area (one-half acre) also rotenone-treated).
 - (a) Abundant dace;
 - (b) Sculpins numerous;
 - (c) Tui chub abundant 3" to 7", estimated 15-20 lbs.

The purpose was to seek out any Eagle Lake trout which might be in active spawning. No trout found.

Fish Investigations (Summer Survey)

July 18-22 a cooperative fisheries investigation was conducted with California Fish and Game Department personnel. Purpose of the work was to assess present populations and determine success of former introductions (Eagle Lake trout and white crappie).

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Methods included use of 21 gill nets at designated points for 20hour periods. Shore seining and rotenone were also employed. Six sections of Willow Creek were rotenone-treated. 8

Over the five-day period gill nets produced only rough fish species. No game fish were recovered during the operation. Over half of the fishes collected in nets bore lamprey lesions--in some instances they were attached to fish.

Aquatic vegetation (<u>Potomogeton</u> <u>sp</u>) was noted mainly northwest of Squatty Butte, west shoreline of the "U", mouth of Willow Creek, and Clear Lake dam narrows. At no location was there a dense, significant production.

The report hinted that a public fisheries was impractical, undesirable, and unnecessary at the present time.

Banding

In June 375 white pelicans were banded in cooperation with Mr. James O. Keith of Research.

Pesticides Investigation

Cooperative research work with James 0, Keith of the Denver Research Center again included work on the Clear Lake pelicans. The above noted pelican banding, close population tabulations, and nesting success-survival all were continued. Results of collections made last year follow this section.

Range Improvement

The test plots set out last fall to experiment with improved grasses and legumes on the low, floodplain range, where medusa-head grass has taken over, were partly flooded. Partial germination was received on tall wheatgrass, intermediate wheatgrass and ranger alfalfa. (By the grapevine we learned U.S. Bureau of Reclamation and University Extension men followed suit and set out similar test plots in the floodplain areas.)

Bureau of Reclamation field men were approached to cooperatively set up a medusa-head grass control trial (burning in late June or early July while sufficient moisture remains in seeds to cause bursting or popping). Equipment, manpower and enthusiasm for the venture never quite materialized during 1965. Chlorinated Hydrocarbon residues in white pelican tissues and eggs from Clear Lake National Wildlife Refuge Nesting Colony - 1964

Number and sex		DDT and		
of pelicens 2/	Tissues b/	Metabolites	Dieldrin	Others d
1 0	Fat	34.32	T	
	HLKH	3.02	.81	
	Brain	0.62	Ť	
	Egg (1)	2.08	.08	HE
	Young (7 days old)	3.00	.33	HE
2 9	Fat	56.00	3.10	
	HLICH	3.72	0.46	HE
	Brain	0.92	т	HE
	Egg (1)	0.75	0.12	
1.11.4	Young (7 days old)	3.00	0.33	HE
3 8	Fat	9.36	1.56	HE
	HLKA	5.90	.91	-
	Brain	0.27		•
	Egg (1-w/embryo)	3.87	.27	HE

Residues in ppm 2/

9

40	Fat	25.62	.88	-
	HLKH	1.10	.07	HE-END
	Brain	0.52	.03	•
5.8	Fat	79.10	т	-
	HLKH	1.13	.03	HE-END
	Brain	0.32	.06	-
6 0	Fat	9.51	.96	HE
	HLKM	0.67	.11	HE
	Brain	0.15	.02	-
1,456 0	Testes (composited)	0.35	T	

10

Birds shot on nests; eggs and young of birds collected where possible.

h/ HLKM indicates a composite sample of 5 g each of heart, liver, kidney and breast muscle; eggs include entire contents except shells.

c/

T indicates less than 0.02 ppm of endrin; dash indicates no residues detected.

d/ Small but undetermined amounts of heptachlor epoxide (HE) and endrin (END).

VI PUBLIC RELATIONS*

A. Recreational Uses

Refer to NR-6 (3-1755) Public Use.

B. Refuge Visitors - Listed in Tule Lake Section.

C. Refuge Participation - Listed in Tule Lake Section.

D. Hunting*

<u>Waterfowl:</u> Waterfowl hunting on this refuge was nearly negligible this year. Competition from Tule Lake and Lower Klamath reduced hunting pressure on this area. An estimated 46 hunters bagged approximately 23 birds for an average success of .50 bird per hunter per day.

Canada geese moved into the area on opening day but remained in the closed area or in those open areas that offered little hunter concealment. Other waterfowl use followed this pattern throughout the season.

Year	Total Hunters (Hunter Days)	Goose Bag	Duck Bag	Total Bag	Geese Per Hunter	Ducks Per Hunter	Total Birds Per Hunter
1963	88	84	19	103	.95	.22	1.17
1964	34	23	0	23	.70	0	.70
1965	46	23	0	23	. 50	0	.50
3-year Averag		43	6	49	.72	.7	.79

WATERFOWL HUNTER-SUCCESS DATA - CLEAR LAKE REFUGE

Clear Lake Refuge was opened to waterfowl hunting in 1963 and the above summary indicates it has drawn little hunter use each season.

<u>Antelope</u>: For the second consecutive year the Clear Lake Refuge was open to antelope hunting, August 21 - September 5. The entire land area of the refuge, approximately 7,500 acres of rocky, upland surrounding the reservoir, was open to hunting. 12

Unlike 1964 when no control on hunter numbers inside the refuge was exercised, special permits, along with the regular California permit, were required for hunting on the refuge "U". A maximum of six special permit holders were allowed within the "U" or peninsula at any time. These hunters were checked, by state and federal personnel, in and out of the Peninsula entrance gate on a first-come first-served basis. Armbands identified special permit hunters, the band being relinquished to the next waiting hunter when through hunting on the Peninsula. No special permits were required for the west, north, or east refuge areas that were open to hunting.

Normally the antelope will concentrate on the Peninsula and with an unrestricted number of hunters, are harassed to the point of loss of does and kids by drowning or exhaustion. This special permit system satisfactorily eliminated this harassment by spreading the hunter use and kill more evenly over the area.

As in 1964 the Peninsula was the favored hunting spot in the Modoc unit. A total of 100 permits were issued for this unit with 52 antelope bagged. Of this 52, 21 were taken off the Peninsula, seven off the west, north, and east refuge areas, and ten within one-fourth mile of the refuge boundary for a total of 38. This compares with forty-six bucks taken on or near the refuge last year. Only one unretrieved buck was observed on the refuge.

<u>Sage Grouse</u>: No sage grouse hunting is permitted on the refuge, although considerable hunting use occurred on those lands adjacent to the refuge. The average kill per hunter averaged approximately .47 grouse compared to 1964's average of approximately one bird per hunter. Hunting pressure was concentrated on the refuge's southern boundary.

E. Violations - Covered in Tule Lake Section.

F. Safety - Covered in Tule Lake Section.

1964

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VII OTHER ITEMS

A. Items of Interest*

During the year the U. S. Forest Service, Modoc National Forest, decided that part of the important antelope-grouse range south of the Negro Bend area will go back to cattle grazing rather than the current concept of sheep "pasture" management.

Overlooked under the appropriate section the first Forester's terns nested on Clear Lake Refuge this year. Past records fail to note this species nesting on the area.

Reclamation made a number of test hole excavations near the old CCC-Rock Dam near Double Head Mountain. There has been speculation regarding use of Clear Lake waters via a canal or channel from this point to Dry Lake near Highway 139.

California Fish and Game managers are urging the Commission to consider an annual antelope hunt for the Clear Lake herd.

B. Photographs

Photographs follow.

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Clear Lake high water levels completely inundated Negro Bend Springs outlet during the winter for the first time in years. (Note shoreline water level mark.) Manager-trainee Pierce here inspects spring during March visit.

3/65 E. J. O'Ned 11

Southwest shoreline of Clear Lake showing dense growth and successful invasion of noxious medusa head (Elymus medusae) which now covers 95% of range. In 1962 only two small patches, less than one acre total, existed.

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5/65 E. J. O'Neill

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Clear Lake high water levels completely inundated Negro Bend Springs outlet during the winter for the first time in years. (Note shoreline water level mark.) Manager-trainee Pierce here inspects spring during March visit.

3/65 E. J. O'Neill

Southwest shoreline of Clear Lake showing dense growth and successful invasion of noxious medusa head (Elymus medusae) which now covers 95% of range. In 1962 only two small patches, less than one acre total, existed.

6/65 E. J. O'Neill

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3-1750 Form NR-(Rev. March 1953)

WATERFOWL

Aerial Survey			Week	s of 1	(2) report	ting	period	1		
(1) Species	1/3-9	1/10-16	- the loss of the	1/24 130	1/31-2/8	the second s		2/21 27	2/28-3/8	3/7-13
Swans: Whistling Trumpeter	(4) 1/8		N - LAS - SA / A	20	(4) 2/4	480	100		(A) 3/4 259	
Geese: Canada Cackling Brant				10	80	60	100	803	480	
White-fronted Snow Blue										
Ducks:			80	10			100	- 300	400	
Mallard Blank Unident. Gadwall					60	300	(69	0.00	010	9.00
Baldpate									18	20
Pintail Green-winged teal Blue-winged teal					(*) (*)	20	2,000	15,000	16,000	10,00
Cinnamon teal Shoveler Wood										-
Redhead Ring-necked Canvasback										¥2.
Scaup Goldeneye Bufflehead Ruddy		F				- 39	- 30	10		
Other Com. Mergan	ler				30			40	10	35
TOTAL DUCES	120	1.00	130	100	100	400	2,070	15,000	17,300	18,78
GRAND TOTALS	360	140	100	Let	1 200	410	3,010	10,100	15,200	18,40

3 -1750a

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Cont. -1

(Rev. March 1953)

Interior Duplicating Section, Washington, D. C.

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WATERFOWL (Continuation Sheet)

REFUGE Clear Lak	0			<u></u>		MONT	THS OF	Constanty	TO Apr	11 , 19 65
(1) : Species :	h 3/11-20 3 11 :	leeks /21-27 12	s of 3/20-4/3: 13 :	(2) repor 1/b-10: 14:		per 1/15-21 16	od 4/3-5/1 17	18	(3) Estimated waterfowl days use	: (4) : <u>Production</u> :Broods:Estimated : seen : total
Swans: Whistling Trumpeter	50	ώποτλ οτ	3/31 (1)	P/8 (V)	92 (3) *				6,080	
Geese: Canada Cackling	350	350	340	300	350	260	109	and solu ore areas wid be on	26,000	Tipre set willes
Brant White-fronted Snow	YAGI ONT	eke weep	г), рорати		10	days pre	sent for	each spec	200	
Blue Gonger WorkL Gine Ducks:	350	350	NO	320	31 0	.	40		87.50	
Mallard Black Und dente	2,000	1,500	200	500	500 20,000	900 6,000	200		61.60	

Mallard	2,000	1,500	250	500	500	300	200		61.20	
Black Indicate	1.00	57098 Bbs	300	100 ST 500	<u> (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)</u>	6,000	5.000	observer	169.20	0 00 8 6480
Baldpate	1.000	2.000	3.00	3,000	NO OF LOL	r ^a ocues,	spectes	com.1.THE	107 . Kat	10. 200
Pintail	10,000	8.000	6.590	E 6.0.0					58.200	WATCH DOTAL
Green-winged teal	নন্দ্র	200	100		ALCEL DIS	NTTOTTS!	COLORAS 1	TETS NEW	13.580	
Blue-winged teal										
Cinnamon teal				500					ED	
Shoveler Wood				200					3,500	
Redhead				10	Ne Dola				70	
Ring-necked	-	and the second s	Ig						0	
Canvasback										
Scaup	- 7 Frank	No.	2.20	2,000	LETHO	her need	ernit az.es		27.69	
Goldeneye	29	80							1-130	
Bufflehead		109		10	S CONTRACTOR	The marker	100		1.90	
Ruddy Other Come Hergenso	P 200		60	50		10	90		5.510	
									A REAL PROPERTY AND A REAL PROPERTY A REAL PROPERTY AND A REAL PROPERTY AND A REAL PRO	
TOPAL DECIS	13,150	11,980	12,960	12,130	15,010	9,010	7,020		851,590	
Coot:	A Peak	100	150	200	200	200	200	SUMMARY	9,100	
				THE REAL PROPERTY AND INCOME.						

GRAND TOTALS: 13,850 12,370 13,450 12,650 (over)5,570 9,570 7,620

893,800

(5) Total Dava	(6) Use 7 Peak Number : Total	(7) Production SUMMARY
Sector manage	The second second second	
wans		Principal feeding areas Morthwest sector, east shoreline,
eese <u>27,090</u>	<u> </u>	springs and "U" rangeland
ucks 851,590	17,360	Principal nesting areas googe - islands
oots 9,300	200	
893,800		Reported by Edward J. O'Neill
ot similtaneously		
1) Species:	In addition to the reporting period sho	7531 through 7534, Wildlife Refuges Field Manual) birds listed on form, other species occurring on refuge during the ould be added in appropriate spaces. Special attention should be given local and national significance.
l) Species:	In addition to the reporting period sho to those species of	birds listed on form, other species occurring on refuge during the ould be added in appropriate spaces. Special attention should be given local and national significance.
 Species: Weeks of Reporting Period 	In addition to the reporting period sho to those species of Estimated average re	birds listed on form, other species occurring on refuge during the ould be added in appropriate spaces. Special attention should be given local and national significance.
 Species: Weeks of 	In addition to the reporting period sho to those species of od: Estimated average re	birds listed on form, other species occurring on refuge during the ould be added in appropriate spaces. Special attention should be given local and national significance.
 Species: Weeks of Reporting Period Estimated Wate: 	In addition to the reporting period sho to those species of od: Estimated average re rfowl Average weekly popul Estimated number of breeding areas. Bro	birds listed on form, other species occurring on refuge during the ould be added in appropriate spaces. Special attention should be given local and national significance. efuge populations.
 2) Species: 2) Weeks of Reporting Period 3) Estimated Wate: Days Use: 4) Production: 	In addition to the reporting period sho to those species of cod: Estimated average re rfowl Average weekly popul Estimated number of breeding areas. Bro breeding habitat. H	birds listed on form, other species occurring on refuge during the ould be added in appropriate spaces. Special attention should be given local and national significance. efuge populations. lations x number of days present for each species. young produced based on observations and actual counts on representative ood counts should be made on two or more areas aggregating 10% of the Estimates having no basis in fact should be omitted.
) Species:) Weeks of Reporting Peri-) Estimated Wate: Days Use:) Production: 	In addition to the reporting period sho to those species of ed: Estimated average re rfowl Average weekly popul Estimated number of breeding areas. Bro breeding habitat. H	birds listed on form, other species occurring on refuge during the ould be added in appropriate spaces. Special attention should be given local and national significance. efuge populations. lations x number of days present for each species. young produced based on observations and actual counts on representative ood counts should be made on two or more areas aggregating 10% of the Estimates having no basis in fact should be omitted.

Interior Duplicating Section, Washington, D. C. 1953

PEFOUL . Elapser Long

Continuation Shee

NONJES OF

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3-1750 Form NR-(Rev. March 1953) (A) = Aerial Census

Total Ducks

Cost

WATERFOWL

990

250

1,070

990

200

1,500

REFUGE Cl	er Lake		Alter and			MONTHS OF	May	TO	August	, 19 65
		11			(2)					
$(1) \frac{1}{2}$	5/2-8 :	W	еека 16-22	01 Te	20-5/5	ing pe : 6/6-12 :	r 1 o d	/20-26 :	0/2101/8:	7/4-10
Species :	1 :	2 :		4 :	5	(A) 5/8	7 :	8 :	9 :	10
Swans:				The of the second secon		(A) 8/8				an a
Whistling										
Trumpeter				122.0						
Geese:				and the stand of						
Canada	450	800	900	800	1,000	1,000	1,000	1,100	800	80
Cackling										
Brant							1000		and the second	
White-fronted Snow										
Blue										
Star Total Geese	480	000	800	800	1,000	1.060	1,000	1,100	800	30
Ducks:	A REAL PROPERTY AND A REAL				antic	4.000	2,000	1,100		
Mallard	400	400	300	800	330	1,850	1.000	800	800	E
Etury Unidentified	1,000	5019	500	800	400	800	1,000	800		
Gadwall	100	500		230	500	150	180	200	200	EE
Baldpate										and the second second
Pintail	30	50	EU	200	200	100	160	160	160	TO
Green-winged teal	00	50	10							1.32
Blue-winged teal										1000
Cinnamon teal	80	50	00	80	30		30	1.1	30	
Shoveler	160									
Wood	10	10	10				10	10	IO	1
Redhead	30		50	80	50	200			20	L.
Ring-necked				1.1.1.2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		100	60	60		
Canvasback						808	200			
Scaup			-							
Goldeneye Bufflehead					And And And					
Ruddy				10						
	40	40	40	10	10	100	80	<u>50</u> 10	10	10
Gibbil Com.Merganser		40				100		10	101	

1,000 1,370 1,010 1,280 2,560 1,980 1,400 970 200 200 990 200 850 80 20 80 8,820 Grand Totals 2,300 1,000 1,340 1,470 3,480 3,180 2,750

3 -1750a

Cont. -1 (Rev. March 1953)

(A) Aerial Comme

WATERFOWL (Continuation Sheet)

(2	
REFUGE		

TUGH		-
	 Landa	. In les
	 1000000	ALC: NO.

MONTHS OF _____ TO _____, 1965____

7) Total Production	N Y B	Week	s of	repoi		per	hot	:	(3) Estimated	: (4 : Produc	
(1) Species	7/11/17		7/25-31		and the state of the	€/18-81 16		* \$/29_9/4	waterfowl days use	: Broods: : seen :	Estimate
wans: Whistling Trumpeter	<i>y</i> 2	amera of	(A) 7/21	orded und	er (3).						a personal a construction of the second s
eese: Canada Cackling	380	900	100	808	300	460	409	400	62,87 0	61	310
Brant White-fronted Snow	VAC VAC	1950 A003	A bobart	croue x 1	amber of	days pre	ent for	A0			
Blue Other Total Geese cks:		200	1 (o)	200		400	400	440	62,650	61	240
Mallard Black Unidentified Gadwall	150 200			A DESCRIPTION OF A DESC		1,000	2,000	2.000 3.000	100,170 07,890 30,800		440
Baldpate Pintail Green-winged teal	100	100	100	LOS TTAN	G OF LOS	1,500	2,000	1 300	9,999 01,750 81,050		
Blue-winged teal Cinnamon teal Shoveler		100	100	100	189	203	1,000		17.780		
Wood Redhead Ring-necked	100	200	370			400		400	000 007,08 009,1	-	
Canvasback Scaup Goldeneye			25	and the second se		100		10	1, 878		
Bufflehead Ruddy		1						400	4,130		
Other C. Merganser Total Dasks	1,100	1.370	1,365	and the second se	1.050	5.000	8.440	15,630	352.418	20	4.17
Grend Tetals	250	350	375		400	400	1,000	1,500	40,005	86	48 730

(5	(6) *	(7)		
	s Use : Peak Number :	Total Production	SUMMARY	· Sale - Land - Land
Swans		1.505 1.620	Principal feeding areas Delta of will	w Greek, Manmoth
eese 68,6	50 1,000	240	Springs and Negro Bond Springs	142
ucks 382,4	20 15,530	440	Principal nesting areas	1000
oots 40,0	80 1,500	46	216 580 20 20 1 19 19 19 19 19 19	
WAL 461,1	00 000 000	780	Reported by Edward J. O'Hoill, Vildlin	to Riologist
SPORTES STA	eimlineously	A ANY		
l) Species:	INSTRUCTIONS (See In addition reporting pe	to the birds liste riod should be add	gh 7534, Wildlife Refuges Field Manual) ed on form, other species occurring on refu ded in appropriate spaces. Special attenti national significance	
 Species: Weeks of 	INSTRUCTIONS (See In addition reporting pe to those spe	to the birds lists riod should be add cies of local and	ed on form, other species occurring on refu ded in appropriate spaces. Special attenti national significance.	
1) Species:	INSTRUCTIONS (See In addition reporting pe to those spe	to the birds liste riod should be add	ed on form, other species occurring on refu ded in appropriate spaces. Special attenti national significance.	
 Species: Weeks of Reporting Point 	INSTRUCTIONS (See In addition reporting pe to those spe eriod: Estimated av aterfowl	to the birds lists riod should be add cies of local and erage refuge popul	ed on form, other species occurring on refu ded in appropriate spaces. Special attenti national significance.	
 Species: Weeks of Reporting Personal Systems Estimated Ward Days Use: 	INSTRUCTIONS (See In addition reporting pe to those spe eriod: Estimated av aterfowl Average week Estimated num breeding are	to the birds lists riod should be add cies of local and erage refuge popul ly populations x r mber of young proc as. Brood counts	ed on form, other species occurring on refu ded in appropriate spaces. Special attenti national significance.	on should be given
 Species: Weeks of Reporting Parallel Estimated Ways Use: Production: 	INSTRUCTIONS (See In addition reporting pe to those spe eriod: Estimated av aterfowl Average week Estimated nu breeding are breeding hab	to the birds lists riod should be add cies of local and erage refuge popul ly populations x r mber of young proc as. Brood counts	ad on form, other species occurring on refu ded in appropriate spaces. Special attenti national significance. Lations. Lations. Sumber of days present for each species. Suced based on observations and actual coun should be made on two or more areas aggreg having no basis in fact should be omitted.	on should be given
 Species: Weeks of Reporting Particular (Second Second /li>	INSTRUCTIONS (See In addition reporting pe to those spe eriod: Estimated av aterfowl Average week Estimated numbreeding are breeding hab Jse: A summary of	to the birds lists riod should be add cies of local and erage refuge popul ly populations x r mber of young proc as. Brood counts itat. Estimates h data recorded und	ad on form, other species occurring on refu ded in appropriate spaces. Special attenti national significance. Lations. Lations. Sumber of days present for each species. Suced based on observations and actual coun should be made on two or more areas aggreg having no basis in fact should be omitted.	on should be given ts on representative ating 10% of the

Interior Duplicating Section, Washington, D. C. 1953

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3-1750 Form NR. (Rev. March 1953)

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WATERFOWL

	:(A) Aerial	Census			(2)					
(1) Species	0/8-11 :0	2 1	-	of 7/20-10/2	: 5 :	10/10-10	• r 1 • d 10/11-13 : 7	10/H-50 8		
wans: Whistling				(A)9/28	(A)10/6	A)10/18	(A)10/19	(A)10/25	20	80
Trumpeter eese: Canada Cackling	810	850	860	890	57(8	1,610	1.010	1,370	1,000	000
Brant White-fronted Snow			40				230	8.000	8,070	1,600
Blue Sthur Total Geese ucks:	350				570	1.81	1.800	8.200	4.000	
Mallard Black Unidentified	1,000	2,000	1,800	1,810	1120	20	40	410	1,000	1,000
Gadwall Baldpate	1,000	2,000	8,000	8,830	100			80		1,000
Pintail Green-winged teal	6,000	8,000 8,000	8,000	3,650	650	60			6,000	
Blue-winged teal Cinnamon teal Shoveler	460	800	200			20			10	50
Wood Redhead Ring-necked	40	160	200	500					40	11
Canvasback Scaup Goldeneye			600	680					300	60
Bufflehead Ruddy	1,000	(10)	860						600	1.00
tikux C. Merganeer Total Dacks	20	10	81.700	25,140	950	90	40	770	9,130	7,26
oot:	500	800	300		250	50		250	500	250
Grand Totals	10,310	18,050	22,400	25,530	1,770	1,960	1,330	4,800	18,700	10,180

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Cont. 1 1 (Rev. March 1953)

WATERFOWL (Continuation Sheet)

7) Total Producti:	(A) Aoria	l Canada Neeks	of 1 /28-12/4	(2) e por	ting	peri	o_d		(3) Estimated	: Produ	
	11 :		13 :	1), .	15 :	16 :	17 :	18 :	days use		:Estimate : total
Swans:	W D	TO CTRUNK	ARON TON	Tana and	112/17			10		1	T
Whistling	15	80	80	20	10	10	A. C.		1.065		1
Trumpeter	07.0	OTTO DATA	romo's new	1.11						A CONTRACT	
eese:	07.0	ding are	as. brock	comine i	ad prnous	11909 00	CHO. 07 1	DLS SLOT	aggroga and	TOP OT	
Canada	800	400	230	500	640	400	800		77,900	-	
Cackling				10	80				890		
Brant		all want	A beliege					and when			
White-fronted	1,000	160		100	98				59.870		
Snow .	100	10		80	80				4.000	+	
Blue Gther Total Googe	1,900	600	830	840	230	409	800		141,000		
ucks:	1.000	000							101.000	+	
Mallard	808	600	80	100	150	100	100		68,890		
Bhaok Unidentified	400	800	250	100					30,150		
Gadwall	500	100		d be add	nd din input	adia briggin	apaces.	Special	08,800	g y pe t	2000
Baldpate	800	900	350	nde litete	10	10	80	gairming.	121,100	1 2 200	
Pintail	1.000	800			80	60	50		867,690	1	-
Green-winged teal	100	100	00	1 + harmente	10	10	10	leld Manu		-	
Blue-winged teal											
Cinnamon teal	e estasperent								6,870		
Shoveler	E[0]0	600	600		100	80	50	1. C	86,250		
Wood					Peror	NY PA	Strend St.	011/2233			
Redhead	100	50			10				7,800		
Ring-necked		203									a survey
Canvasback			40						420		
Scaup	800	300	180		180	nal nestr	ng areas	1,010G	88,610		
Goldeneye					50				008		
Bufflehead Ruddy	20	80	10		100				1,200		
shiber C. Merganser	200	100	20		40	50	30	-	29,400		
Total Bucks	4,250	8.510	1,400	100	000	230	200		770.720		to the second
oot:	800	800	850		50	40	80		85, 949		
Grand Total	6,000	8,440	1,000	760	r,1,400	700	480		945,040		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1

(5) Total Days Use	(6) (7) :, <u>Peak Number</u> : <u>Total Production</u>	SUMMARY
Swans 1,080	30 N	Principal feeding areas Sherelines, Willow Creek, estnery
eese 141,000	4,050	Negro Bond Springs, Manmeth Springs
oucks 776,720	25,140 N	Principal nesting areas None
coots 25,340	500 E	
TOTAL 945,040 #Not simult	American ly	Reported by Edward J. O'Heill (Cet. census by Sehara and (Edha)
Green-winged teal IN	STRUCTIONS (See Secs. 7531 thro	ough 7534, Wildlife Refuges Field Manual)
1) Species:		sted on form, other species occurring on refuge during the added in appropriate spaces. Special attention should be given and national significance.
2) Weeks of Reporting Period:	Estimated average refuge pop	pulations.
3) Estimated Waterfow Days Use:		k number of days present for each species.
4) Production:	breeding areas. Brood count	roduced based on observations and actual counts on representative ts should be made on two or more areas aggregating 10% of the s having no basis in fact should be omitted.
5) Total Days Use:	A summary of data recorded a	under (3).
		t 15, 1 10 1 17 t 16 1 days use I seen 1 tot
6) Peak Number:	Maximum number of waterfowl	present on refuge during any census of reporting period.

Interior Duplicating Section, Washington, D. C. 1953

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WATERFOWL (Continuation Sheet)

	20			and the second second						
3-1751 Form NR-1A			М	IGRATORY B	IRDS					
(11 10/5)	AR LAR		(other	r than wat	erforl) of		to APREL	1	65	1 DEVOS
(1) Species	(First	2)		(3) (4) Peak Numbers 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: Earod Grobe Western Grobe Pied-billed Grobe White Poliesa D-Created Cornorant G. Blue Heron Comon Egrot Black-Cr. Hight Heren	6 20 50 12 50	3/28-4/3 3/21-27 2/26-3/6 3/28-4/3 3/21-27	100 80 20 1000 80 (8AM	April 3/28-4/3 8) 3/28-4/3	9td111	Propent	2 1 1	1200 20 8		250 200 50 1500 80 50 50
II. Shorebirds, Gulls and Tarns: Long-billed Curler Willot Greater Yelloulegs Leever Yelloulegs	N 0 200 350	⁰ ³	E R V A T 1000 2000	April		Present	hie oorte Avoid other s espaces (fiodace)	jiss orde fors stag stag stag	nedies) sectors at Sectors	100 500 10 10 10 1000 50 1000 50 1000
	acerned. d actes	a tions of	ning the			iov to voi	alei ran Man beim Alei heim		st Sous : odvotion	3 (A) 5 (0) 37 (0)

(1)	(2)	(3)	TOROTA I	(4			(5)	(6)
III. <u>Doves and Pigeons</u> : Mourning dove	No Info.	300	Monthe	(other		REAL	Portu e Blake	(Here, 1945) 300
White-winged dove	17	a their	mere	(a) Peak Nu	1	(2) 5. /9128	(1) retes	
IV. <u>Predaceous Birds</u> : Golden eagle	Prev. Period	8 3/	28-4/3	(indiau)	Date .		enall og	20
Duck hawk Horned owl Magpie Raven Crow	- Autor	1 2000 1	A trapp	(N) (8) (2) (2)	EX/Late a source		internet internet source sources sources sources sources	
Beld Hegle	3 2/28-3/6	3 54	reh -	1	3/28-4/3	a a		10
			- HA		Eler M		and de la	
					Reported	byBdw	ard J. 0' Heill	1
		INSTRUCTI	IONS					

(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. <u>Water and Marsh Birds</u> (Gaviiformes to Ciconiiformes and Gruiiformes)

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.

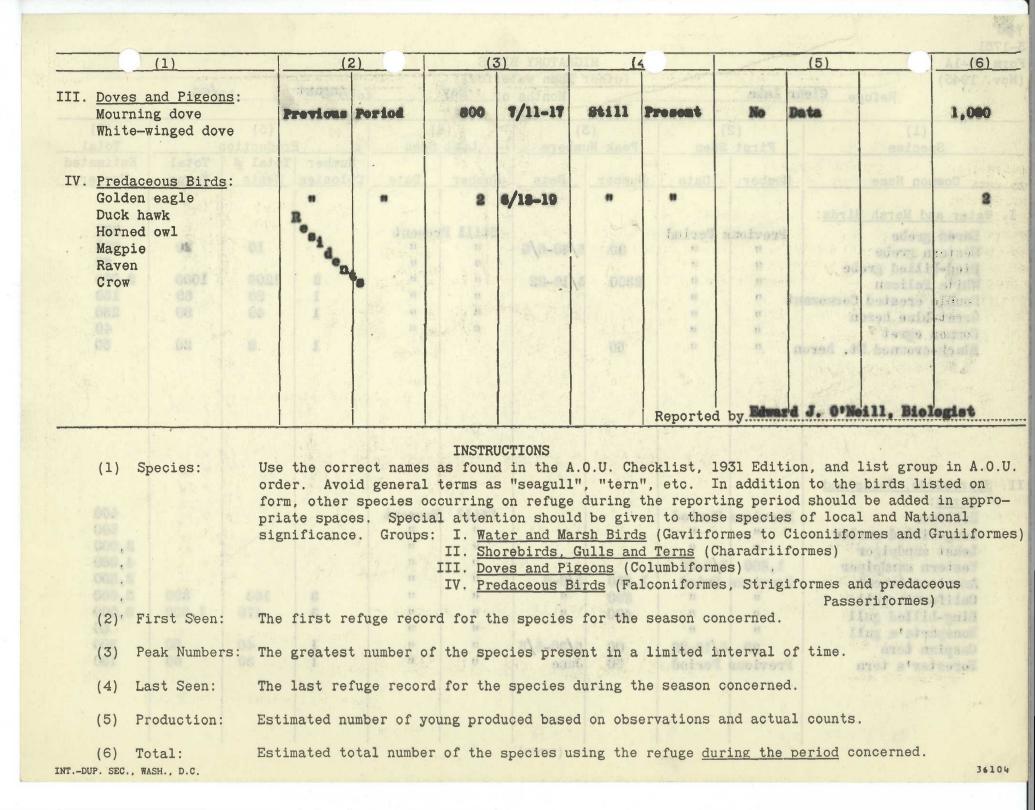
(6) Total: Estimated total number of the species using the refuge <u>during the period</u> concerned.

INT.-DUP. SEC., WASH., D.C.

3-1751 Form NR-1A (Nov. 1945) Refuge	ear Lake			MIGRATORY E or than wat Months		, 0	to Angest	1	.	T. Down a
(1)	()	2)		(3)		4)	NP LANGT	(5)	e dava	(6)
Species	First			Numbers	AND STREET	Seen	Number	Productio Total #	Total	Total Estimated
I. Water and Marsh Birds: Bared grobe Western grobe Died-billed grobe White Polican Double created Common Great-blue horon Common egret Diek-crouned Nt. her		Date Poriod	Number 80 8800 50	Date 5/30-6/5 5/16-33	Number	Present	Colonies 2 1 1 1	Nests 10 1800 80 40 8	Young 80 1000 60 80 80	Number 250 200 50 3,000 150 250 40 50 50
II. <u>Shorebirds, Gulls and</u> <u>Terns</u> : Killdeer Leng-billed carler Leng-billed carler Leng-billed carler Mestern candpiper American Avecet	Previous " 1,800 Previeus	Period 5/6-22 Eriod	1,080 800 480	5/2-8 n n	84111	Procent		100 470	900 1, 500	400 800 8,000 4,000 8,000 8,000 8,000 8,000 8,000 8,000

(over)

10



Common NameNumberDateNumberDateNumberDateColonies'Nests'YoungNumberI. Water and Marsh Birds: Borders Grobe Plosien Broch Thite policem Double-errested Cereoration Cemeor Egret Block-crossed LinePeriod ************************************	orm NR-1A Nov. 1945) RefugeC	leer Lake			IGRATORY B r than wat Months		Decembe	December 19/ 65				
Common Name Number Date Number Date Number Date Number Date Number Total # Tota								<u></u>		n	· ·	
Bared Grebe Frevious Feriod 200 9/19-18/2 Massord Massord Notern Grebe * * * 100 9/5-18 4 12/5-18 Pieds-billed Grebe * * * * 8 12/5-18 1 Double-created * * * 8 12/5-18 1 12/19-31 5 Double-created * * * 18 * * 100 Gressrant * * 20 9/5-18 Same 100 Common Rgrot * * 18 * * 100 Common Rgrot * * * * * * 100 Discord * * * * * * * Black-crossnot * * *										1	Estimated Number	
Cormerant * 20 9/5-18 Same Still Present 50 Disch-strongend Hight * * No No Still Present 50 Disch-strongend Hight * * * * * * 10 Insch-strongend Hight * * * * * * * 10 I. Shorebirds, Gulls and Terns: * 20 I. Shorebirds, Gulls and Terns: Frevione Period * * * * * * * 20 Leng-billed Carler Provione Period *	Western Grabe Pied-billed Grabe White polican			100 10	9/5-18	-	12/5-18 seord	a and a a		nigne dwn Iso	280	
I. Shorebirds, Gulls and Terns: Killdeor Long-billed Carler Long-billed Carler Lo	Cornerant Greet-blue Heron Common Egret Black-crowned Hight Heren		*	19	1	Still					50 10	
	I. <u>Shorebirds, Gulls and</u> <u>Terns</u> : Killdeer Leng-billed Carler Lenst Sendpiper Vestern Sendpiper American Avocet California Gall Bing-billed Gall Bonsparte's Gall Caspian Tern			800	Record 9/5-18 Record		coopt n 10 20daw	other a le apacés llicénce. lirs i rel jresiesi	orde arol pria ngte ngte	rst Seen	400 100 8,000 4,000 100 5,000 10,000 50 200	

pd

((1)	(2)	21	3)	DIN (-	4,		(5)		(6)
Mour	es and Pigeons: rning dove ce-winged dove	Provise Period	1,000	9/5-18	Tedto) I alt	looord	(8)		Ret (1)	(d)el vall) 1,000
Gold Duck Horr Magg Rave Crow	en	Provious Basidon Basid	1 10 20 Same	9/19-10/1 12/19-31	ode oti ot b No	Present Record Present	funbar funbar s s s s s s s s s s s s s s s s s s s	n <u>Sirda</u> : Geologi ei ei eion	accies and Marel de Marel de Grebo Milles Milles accrest accre	2
						Reported	l by Edward	d J. O'Ne	111	
(1)	Species:	Use the correct names order. Avoid general form, other species of priate spaces. Speci significance. Groups	s as foun l terms a occurring ial atten s: I. <u>Wa</u> II. <u>Sh</u> III. <u>Do</u>	as "seagull on refuge ation shoul ater and Ma acrebirds, oves and Pi	", "tern e during d be giv arsh Bird <u>Gulls an</u> geons (C	", etc. 1 the report en to thos <u>s</u> (Gaviifo <u>d Terns</u> (C olumbiform	In addition ting period se species ormes to Ci Charadriifo	to the b should be of local a coniiforme ormes) ormes and	irds lis e added and Nati es and G	sted on in appro- onal druiiformes)
(2)	First Seen:	The first refuge reco	ord for t	he species	for the	season co	oncerned.	1 45561.	lioimes	17160
(3)	Peak Numbers:	The greatest number of	of the sp	ecies pres	ent in a	limited i	nterval of	time.	at of the	intel Lants
(4)	Last Seen:	The last refuge recor	rd for th	e species	during t	he season	concerned.	(T-15)	di s'esh	esto 1
(5)	Production:	Estimated number of y	oung pro	duced base	d on obs	ervations	and actual	counts.		
(6)	Total:	Estimated total number	er of the	species u	sing the	refuge <u>du</u>	ring the p	eriod cond	cerned.	TERIOR PORTLAND, OREGON

3-1750b

UNITED STATES

Form NR-1BDEPARTMENT OF THE INTERIOR(Rev. Nov. 1957)FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Reported by E.	J. Ollinda	1	Title	WATATA PA Ma	+ Binlastat	Biologist				
Reported by	. O'HELL	in a second	TTOTO	WINDING Mg	to BIOLOGIST					
(1)	(2		n trito anio	(3)	(4)	(5)				
Area or Unit Designation	Habi Type	Acreage	(pther	Use~days	Breeding Population	Production				
Depresentation	Condition Descent Station Condition	nor cabo	Ducles	The second s		Call Sector S				
	Crops Upland	3,937	Ducks Geese	340,000	150 20	100				
To Tda georg	Marsh	20721	Swans	500						
est of Peninsula	Water	13,600	Coots	12,010	20	E				
heir descripe	Total	17.537	Total	361,710	190	125				
	Crops	60 80 60 60	Ducks	820,380	65	300				
at IImo an da	Upland	2,283	Geese	201,040	00000 88 (mail	300				
Best of	Marsh	60	Swans	4,080	bas					
Peningula	Water	6,620	Coots	16,880	WOT 10	30				
Sonal sub-	Total	8,963	Total	1,042,380	163	डाउँ				
III	Crops	ashular	Ducks	318,770	d'and 65	10				
Peninsula	Upland	6.240	Geese	73,510	booli 14	35				
don duć not	Marsh	too bhala	Swans	3,920	iariam					
bhe rela-	Water	ie and cor	Coots	27,990	10 incli	10				
emerrgent	Total	6,240	Total	424,190	levit 89	85				
the same deep	Crops	Le ene vi	Ducks	1,479,150	bas 280	ملا				
-bestxe bas no	Upland	12,460	Geese	283,750	antict 122	240				
TOTALS	Marsh	60	Swans	8,500	t with the					
Llow plays	Water	20,220	Coots	56,880	01 000	1.5				
eent bas din	Total	32.740	Total	1,828,280	442	730				
	Crops	estimate	Ducks	Aastraula	a b <u>ras</u>					
	Upland	ia en dael	Geese	id be compute	Luoría					
smented by	Marsh	in afdafn	Swans	wh reference	throu					
Linese esti-	Water	Con respective sectors	Coots	io blait olb	perio					
	Total		Total							
Iwolrajsw y	Crops	ty La Lt Lum	Ducks	iamos a.t. aval	8 <u>2 139-</u> 0	3) Use-day				
gree with	Upland	bna .nev	Geese	stim it notie.	Lucoa					
	Marsh	Form MR-	Swans	mation report	infor	decision and and the second				
	Water Total	Chercherchercherchercherchercherchercherc	Coots Total							
	Crops Upland	ch area da	Ducks Geese	abuld lo vio	sedas					
and the second	Marsh		Swans							
flight ago.	Water	Contraction of the Contraction	Coots		LLOBAL ENO.5	COMPOSE (C				
	Total		Total	Colling below the ball and the second						

(over)

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

Crops include all cultivated croplands such as cereals Habitat: and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.
- (5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

(2)

Pd 3-1750c

Form NR-17

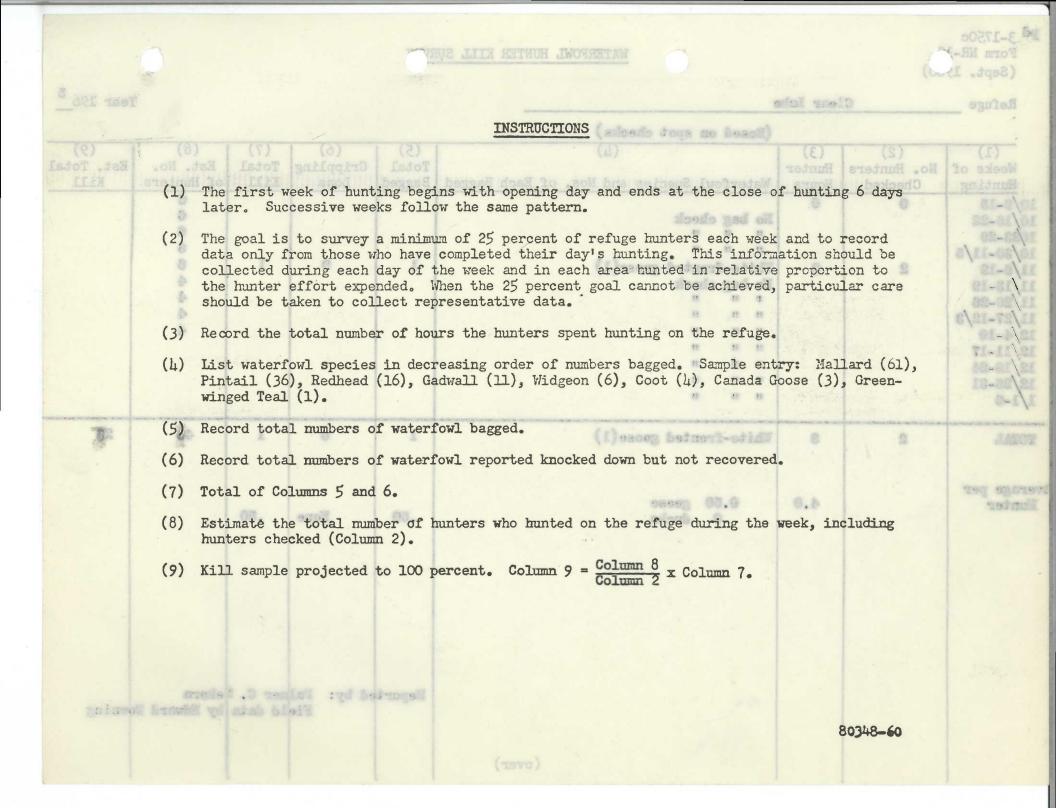
(Sept. 1).)

WATERFOWL HUNTER KILL SURV

Clear Lake Refuge (Based on spot checks) SMOTTOUSTENI (1)(2)(3) (5)(6) (7)(8) (\mathbf{L}) (9)Crippling Weeks of No. Hunters Hunter Total Total Est. No. Est. Total Hunting Waterfowl Species and Nos. of Each Bagged | Bagged | Kill of Hunters Checked Hours Loss Kill 10/9-18 0 0 ß as follow the same pattern. No bag check 10/16-22 The goal is to survey a minimum of 25 percent of refuge hunters each we 1623-29 broost of bas d 10/30-11/5 data only from those who have completed their day's hunting in stion should be Inite-fronted goose(1) does ni bas week and in each (1) seeog betaront-etian 11/6-12 2 of no in Born 11/13-19 the innter effort expended. Then the 25 percent goal cannot sed of particular care 11/20-26 ald be taken to collect revresentative data. 11/27-12/3 Record the total number of hours the hunters spent hunting on the r 12/4-10 18/11-17 (h) List wateriowl species in decreasing order of numbers bagged, "Sample entry: Mallard (61), 12/18-24 Pintail (36), Redhead (16), Gidwall (11), Widgeon (6), Coot (19, Camade Coose (3) 12/25-31 Green-1/1-0 winged Teal (1). .bagged Iwo! ord total numbers of water White-fronted goose(1) 40 20 REPAR 2 8 (6) Record total numbers of water owl reported knocked down but not recovered lverage per (7) Total of Columns 5 and 6. 0.50 geese Hunter 4.0 .50 manters who hunted on the resident during the None week, including hunters checked (Column 2). (9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$. Reported by: Palmer C. Sekora Field data by Edward Riening

(over)

Year 196



10

3-1752 Form N° 2 (April 1946)

UPLAND GAME BIRDS

Refuge CLEAR LAKE

Months of JANUARY

to _	APRIL	,	19	65	

(1) Species	(2) Density	(3) Young Produced	(4) Sex Ratio	R	(5) emova	ls	(6) Total	(7) Remarks
Common Name	Cover types, total per acreage of habitat Bird	Number broods obs'v'd. Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage Groups Valley Queil	Sege-Juniper Greeslands 7000 As. Sege-Juniper Gresslands 7000 Ac.		sester of the second se		int in Int in Internet Der un Der un Der un	aya aya aya aya aya aya aya aya aya aya	300	No observations
Chuker Partridge	Sege-Juniper Greeslands 7000 Ac.	E Contraction	me produced they habitat inarily to w	or in ord	B B B B B B B B B B B B B B B B B B B	um B dans tr dans tr t	i Estimet in repr This co	No observations
	d during the report period g the seport period. Int ato the refuge during car	arona renova iren dosta stare ting	in éabh cate naing the P	ner noer	am L m Ca das	itot b	Indicate Satimati include	(5) REMOVALET (6) TOTALE
	nd ar a covered in surver Stall; requested.	noitte Canto Ionga Ton i	o determine L'informatio	d be heat	nan ing	Heri other	Indicato includo	(F) (
0'Heill			The should be	100				ga ooloong 4

Form NR-2 - UPLAND GAME BIRDS.*

SPECIES: (1)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 Nc. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and and a state of the second second 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.
- Estimated total number using the refuge during the report period. This may (6) TOTAL: 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.

3-1752 Form N° ? (April 1946)	Refuge GIRAR IA	B	UPL	AND GAME BIRI		Kay	0	to	ugust , 19 65
(1) Species	(2) Density		(3) Young Produced	(4) Sex Ratio	Re	(5) emoval	Ls	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat		Number broods obs'v'd. Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Sage Grouse	Sage-Juniper- Grasslands 7,000 Acres	ed eno gener e land bted l subal ple er	1 50	types shoul much as to s, reverting tandard type here possibl	over ib so mood so so ed v	a .a bara bara bara . bab .a bas		250	Wet, cold June weather very hard on nesting birds as in 1964.
Valley Quail	Sage-Juniper- Gresslands 7,000 Acres	ted un obse	ONK	areas should ing produced they had tet	is or i yo: bree:			100	CEDUCORIA CRIDOX (E)
	nts, std, Include g the report parton	pinense itrob h	ld <u>urkey</u>	imarily to w. blat, .n sach cater	s pro	pplite cif e		This col other sp Indicate	(4) SEA RATIOL
	aport period. This	n edž g	fuge during	using the r	reda Lirda	in La i due		Setimple include	(6) TOTAL:
	a covered in survey requested.	nd are	opulition aot apeal	deterrine) information	ad ba	en pe pert		Indicate include	(7) REMARKSI
			.bxau e	i biroda ber	voo	bolts		or sideoti	* only columns app
E.J.0'Neill									

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Form NR-2 - UPLAND GAME BIRDS.*

ANDE SE

(1) SPECIES:

Use correct common name.

(2) DENSITY:

a testing and alon . See

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 Nc. 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) Species	(2) Density	(3 You	ing	(4) Sex		(5) emoval		(6) Total	(7) Remarks	
Common Name	Cover types, total acreage of habitat	Acres per Bird	Produ	ced g	Ratio	Hunting	For Re- stocking	mohten	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
age Grouse	7,000 acres sage- juniper-grasslands	enbugh meral and, b d in W hmitte	the g the g ture list res a sampl	e de cure ricu mbol Fig tive	pes should t pes should t ch as to obs reverting ag	N III IIII	Cow not urdwo sto. used i cou	pes the the te d be and be	300 and 300 an	Two-day general season (limit 2) in Modoc County outside of refuge, 9/4 &
alley Quail _{stra}	tions and actual co	Wie	any kasala		produced, b	amo	10 10	edaut		(3) YOUNG PRODUCED:
no a	, etc. Include da				.9	ldal.	ava.	1 20.	other speci	(4) SEX RATIO:
	the report period. Int period. This m ofuge during certai	he rep	ring	rb ag	ing the refu	ar us	daura	Isto	Estimated	(5) REMOVALS:(6) TOTAL:
	covered in survey.				stermine pop nformation n					(7) REMARKS:
				,beed	ed bluche b	9'19V	o bo.	Teg 1	sble to the	* Only columns applie

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States States

Form NR-2 - UPLAND GAME BIRDS.*

N.

(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
Pertinent information not specifically requested. List introductions here.	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
Two-day general scance (limit 2) in Modoe County outside of refame, 9/4 &	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.
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(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.

Form MP

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d 3-175 ² Form . (June 19		Clear Lake	4	BIG G			c	alenda	ır Ye	ar 1965	_		
(1) Species	(2) Density	(3) Young Froduced		(!+) Remov				(5) 8888	In	(6) troductions	(7) Estima Total H Popula	ited lefuge	(g) Sex Ratio
Common Nam	Cover types, total Acreage of Habitat	Number	Hunting For Re-	stocking Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Male Deer	Sage - juniper	Bot. 15	N	0 N	B	1	1765 1601 1601	2	r ir lreq v e, e	Nunges oper the the der spruce summ trats prairs should be us	1,000	100	
Pronghorn Antelope	hod used and size of skuple as m.	10	12	9118 8 845 1 30 70	anna under 10	3*	181 102 118	presei be in total	o re uld sted	n sinuos hu da santa tu santa :Gibi	128	198	
	during the year.		030 D	ao do to el	in as record			Latos Lo ala	e ba	India On the	REMOVILSI LOSSES:		
	hich stock was secured.	noy from w			in ra		-	in eff	930	01601 (88)	TTOUGORTE		
	et. to foing to agoin all a	n <u>netonga</u> J		10 no 0 1 0	Calls	oq aa	503		ada 220	2 9490 6493	POPUL RENO		
	each species as determined fr	Tag an Come 2			10.0			eq. edd		afbel 	SEE BATIC:		

"Due to airplane hasing (drowned crossing Clear Lake)

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisians white-tailed deer.
- (2) DENSITY: 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 total number of young produced on refuge.

Reported by Removed 4, Standard

- (4) REMCVALS: Indicate total number in each category removed during the year.
- (5) LCSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIC: Indicate the percentage of males and females of each species as determined from field observations or through removals.

(sial stall mission (month) which individe of moth

Wind a see O see a source

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a a atma

(1) Species	(2) Density			(3) Removals						(4) tion of		25102	92 ((5)
14. etc. c of North	ddension, bellet-olidw bund in the "Field Soo	quirrel,	a 20 11 31	È.I ette	irre in c	iye eqi	nom	Shar	e Trap	ping	lge bed	ted	-	Total Popula
elantra eda	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Fredator Control	For Re- stocking	For Re- search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Fure Destroyed	tion
	Shoreline, springs,	r antes) nt from	n.pe	6708 878		beced	are ere	tty to b ta to b	Dane \$1 on					50
	lage Juniper greeslard 12,420 erres	recze be		J 18	1 10	i bael	eg 1 ton	in or ac	o ano a a hala			~	-	20
		BIE ADDRE		0										to Data
	thoroline, springs, ma areas 200 eeros	nsh					8 , 8 5003 90	astovoo 11fe Man a shoul	1800 110 110 110				ling	
t. Lion ad Silvers a	indper Greesland	pure en					NC A rel	austa di mu bejad	inen thert		52.27			
orcupine			ŧi.			ŭ								8 8
tory Animal	stage by Service Preis under headingelisted.	t off ad atling	100 L	y tal	1000 200 10000 200	ilboli gas	ai . sho	lous yea er. Ale	prov Hunt					
cen by Sarvice se of unprime- ser agencies	Predator Animal Hunter	i to man f sach a donated ted	eqq.					mre-tra mte the mnel. or dame id be sh	Indt	e sue:) HOTI	19051	XC (1	
	reported on as of Apri		do	89 Lo	sol	talaa	ng La	tot bets	ttaff.	: 101	24.1040	H DA	OF C	

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES:

(2) DENSITY:

Use correct common name. Example: Striped skunk, spotted skunk, shorttailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

Applies particularly to those species considered in removal programs. 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, bottom land 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) REMOVALS:

TING &

Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3 -1755 Form NR-;	DISEASH	8	
	Refuge Clear Lake	Year <u>19. 65</u>	
A Parada	Botulism	Lead Poisoning or other Disease	and the second
Period of outbreak	None	Kind of disease None	
Period of heaviest los	S @ S	Species affected	
Losses: (a) Waterfowl (b) Shorebirds (c) Other	Actual Count Estimated	Number Affected Actual Count Estimated	d
Number Hospitalized	No. Recovered % Recovered	Number Recovered	_
(a) Waterfowl(b) Shorebirds(c) Other		Number lost Source of infection	_
Areas affected (location	on and approximate acreage)	Water conditions	
	age depth of water in sickness, reflooding of exposed flats, etc.	Food conditions	e and
Condition of vegetatio	n and invertebrate life	Remarks	
Remarks		Reported by: Edward J. O'Neill, Wildlife Dieleg	

NR-	6		Bur	eau of Sport	: Fishe	ries and Wildlife	2			
				See Instruct	ions o					
Refu	ige Clear La	ke	and groups				С	alendar Year	1965	
	sits a. Hunting	253	b. Fishing	0	_ c. M	iscellaneous	2950	d. TOTAL VISITS	32	03
la. Hu	nting (on refuge la	ands)	e. TOTAL	Recreation,	2.	Refuge Participat:				
	ТУРЕ	HUNTERS	ACRES	MANAGED BY	11282	Refer to Tu	le Lake	section	B. ME	tor
	Waterfowl	38	10600	INS		TYPE OF ORGANIZA	TION		NO. Of GROUPS	NUMBER IN GROUPS
	Upland Game	N	ONE			Sportsmen Clubs		Toffermetion co	"CHOM	
	Big Game	215	7679	FWB	ter ng	Bird and Garden Clu	ubs 🔍	wadary , walese et	COPIT IS	isg.
	Other	enne atak	tost sho	einilar hunt	part.	Schools				
	Number of permane			ng 'out of b	-	Service Clubs	mits, o	assignment of bl	thas .	
	Man-days of bow h	nunting inclu	uded above	type of 0un	67 ^{(3,4}).	Youth Groups				
	Estimated man-day			iacent to	DE COL	Professional-Scient	tific	d or inaction the	Peor.	
	refuge	959				Religious Groups	+5 (of)	essentiers per car) 38	
lb. Fi	shing (area open to)	-	State or Federal Go	ovt.			
	TYPE OF 4	IREA	ACRES	MILES	17 418	Other	tal Care	1, wiles they of	ob go	
	Ponds or Lakes	and of a	11001082	o opo trian.	3.	Other Activities				
	Streams and Shore	s	in C Grant	12° pizzy-nep		TYPE	NUMBER	TYPE	Lotal L	NUMBER
lc. Mi	scellaneous Visits			a she to be	1 208	Press Releases	durites	Radio Presentati	ons	4
Iten	Recreation	2150*	Official	500		Newspapers (P.R.'s sent to)		Exhibits		
	Economic Use	300	Industrial_	0	Ind Lind	TV Presentations		Est. Exhibit Vier	wers	
		mently arti	lfact hunte	ro						
3-175	6 Perort	od by: J.T.	Annenz							

(Rev. 4/63)

Reported by: J.T. Annear

Meported By: 4.7. Manuer

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INSTRUCTIONS

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Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

<u>Computing visits</u>. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item la: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

- Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.
- Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items lc and l. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items lc and l.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.



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Upper Klamath National Wildlife Refuge 1965

I GENERAL

A. Weather Conditions*

Tabulated below is the weather data for the year 1965. It was furnished by the Klamath Falls Station, U. S. Department of Commerce, Weather Bureau, Klamath Falls, Oregon. This station, located two miles southwest of Klamath Falls, is the closest official weather station.

		Precipitation	Temp	perature
	Month	Normal 1/	Maximum	<u>Minimum</u>
January	2.23	2.07	54	5
February	.08	1.48	60	17
March	.08	1.17	66	18
April	1.62	.93	77	25
May	.36	1.05	82	24
June	1.12	.86	85	29
July	Т	.28	91	38
August	2.49	.27	89	40
September	Т	. 52	82	28
October	.05	1.15	86	19
November	2.45	1.64	67	8
December	.80	2.27	54	-3
Total	11.28	13.69 Extre	emes 91	-3

1/ Precipitation average for the period 1927-1956.

B. Habitat Conditions

1. Water*

The Bureau of Sport Fisheries and Wildlife has no control of water on this refuge. Refuge water levels are dependent upon the elevation of Upper Klamath Lake which is managed as a reservoir for irrigation and the production of hydroelectric power.

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Inflow into Upper Klamath Lake in December 1964 was an amazingly high 462,000 acre feet. On December 1 the elevation was 4140.78'; it crested at 4143.70' on December 31, reflecting a rise of 2.98'. Storage at this level of 621,000 acre feet is 190 percent of average. This elevation, unequal in recorded history, presented problems.

About ten miles downstream the river narrows into a restriction known as the Keno Reef. The rushing waters were bottlenecked here and backed up, flooding 10,000 acres of pasture and grainlands.

Between February 17 and March 20, Pacific Power and Light Company constructed a bypass canal around the Reef. Future plans call for: construction of a diversion dam 1.1 miles below the Keno Regulating Dam; diverting all water through the bypass canal; removal of the reef; removal of the Keno Regulating Dam; and widening and deepening of the river channel.

The elevation of Upper Klamath Lake was 4139.58' on December 31, 1965.

There was no botulism on the refuge in 1965.

2. Food and Cover*

Water conditions were adequate again in 1965. After winter floods, copious amounts stored in Upper Klamath Lake provided a good cover of refuge lands.

Food production was similar to the 1964 season but at best it leaves much to be desired for most species of waterfowl - especially puddle ducks.

The Unit 1 area and the lake front edge of Units II and III usually attract greatest numbers of waterfowl in the fall. Grain feeders prefer to raid the rich fields of the Tulana Farms to the east and loaf in the shelter and protection of refuge units II and III.

II WILDLIFE*

A. Migratory Birds

NR Forms appended to the section clearly illustrate the waterfowl seasonal use.

January saw all refuge units frozen over solid except for a very few springs or air holes in Units II and III, part of Pelican Bay

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and sections of Recreation Creek. As late as April 6 snow again blanketed the entire area with about two inches of new snow.

Waterfowl production was good. Canada geese showed a 116 percent increase over 1964; ducks made a 71 percent gain; coots were up 70 percent. Total waterfowl production improved about 73 percent.

Waterfowl use-days (4,229,860) were down 1,377,960 compared to the year 1964.

V FIELD INVESTIGATION OR APPLIED RESEARCH*

A. Progress Report

The algae problems study by Health, Education and Welfare on Upper Klamath Lake continues in effect. The refuge is currently cooperating by obtaining an estimate of waterfowl use on the entire lake for computation of algae nutrients originating from animal matter.

VI PUBLIC RELATIONS*

A. Recreational Uses

Fishing

Upper Klamath Lake's 120 square miles provides some excellent yeararound fishing. Much of the activity occurs on the refuge area opened to fishing (In 1965 Oregon estimated 11,000 angler-days on the lake). In the summer the lake water temperature generally rises to the 70's and the fishing shifts to cooler, west shore areas including the refuge. Proposals to re-establish Upper Klamath Lake as part of the former anadromous fisheries continues under study by state, Federal and power company officials.

B. Refuge Visitors - Refer to Tule Lake section.

C. <u>Refuge Participation</u> - All participation listed in Tule Lake section.

D. Hunting*

Hunting use increased 17 percent over 1964 and was down 7 percent from 1963, the only two years hunting use has been measured. Hunting success was excellent with ducks (2.27/hunter) and poor with geese (.17/hunter) for a total of 2.44 birds per hunter. Mallards and widgeon comprised 50 percent of the kill and shoveler 10 percent.

Moderate temperatures through October, November, and early December were sufficient to keep the hunting area open. The fast moving, frequent storms in November provided excellent hunting conditions.

Hunter use was low relative to bird numbers and hunting conditions. Bag checks indicated that a minimum of 50 percent of the hunter use was from Medford, Ashland, Roseburg, Eugene, and Coos Bay areas. It appears the majority of Klamath Basin hunters prefer other than this area although this is by far a higher quality hunting area than the Oregon-California firing line--not so many birds but a better chance of getting one.

Year	Total Hunters (Hunter Days)	Goos Bag		Total Bag	Geese Per Hunter	Ducks Per Hunter	Total Birds Per Hunter
1963	800	No	Data	1,280	No	Data	1.6
1964	640	90	1,280	1,370	.14	2.0	2.14
1965	748	127	1,698	1,825	.17	2.27	2.44
3-year Averag	124	109	1,489	1,492	.16	2. 14	2.06

WATERFOWL HUNTER-SUCCESS DATA - UPPER KLAMATH

E. Violations - All violations listed in Tule Lake Section.

VII OTHER ITEMS

A. Items of Interest**

During the summer and fall Bureau engineers were involved in location of the boundary along the north line of Unit III.

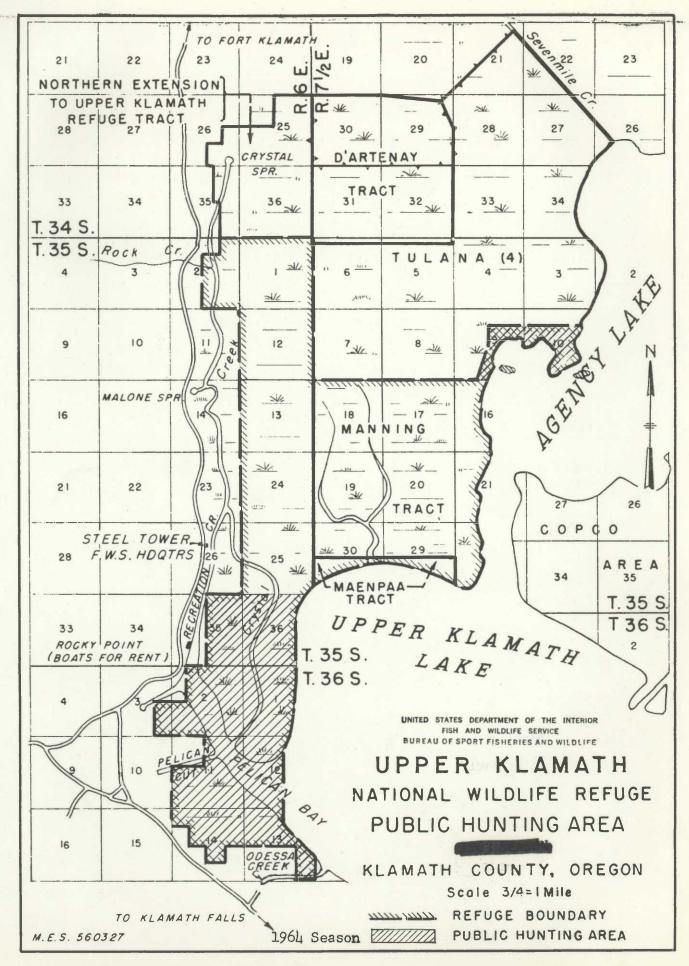
*Sekora **0'Neill Cadastral findings required shifting the refuge boundary several yards southward.

It is proposed by Tulana Farms to dike off and reclaim, by drainage, some eleven and one-half sections of marsh land north of the refuge for agricultural use. 5

Tulana has requested consideration for a land exchange in Sections 9 and 10 for the east edge of Hank's Marsh. From a habitat standpoint this negotiation, if in favor of Tulana Farms, would involve a slight loss to wildlife and hunters.

With acquisition of Eagle Ridge property by Klamath County for recreational development, there has been renewed recreational outlook for the Upper Klamath Lake country. Rocky Point Lodge exchanged ownership and the former owner plans developments northwest of the refuge. The Forest Service has a number of requests for more summer home sites and developments.

Approximately 2,000 acres of land north of Unit III was acquired under Public Law 88-567 (Kuchel Bill) for addition to the Upper Klamath Refuge. This area embraces the head waters of Recreation Creek, Crystal Springs, and is west of D'Artenay tract.



3-1750 Form NK (Rev. March 1953)

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WATERFOWL

REFUGE TOPPER IN AVAIL

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MONTHS OF JANUARY

TO AFELL

, 19 👪

)-Aerial Survey	:		Week	s of	(2) repor	ting	perio	d		
(1) Species	1/3-9	1/10-16	1/17-23	1/24-30	1/31-2/6		2/14-20	2/21-27	:2/20-0/0	: 10
Swans:	1	1	1	1	(4) 2/3	1	1		1	1
Whistling	10	10				80	50	80		50
Trumpeter										
Geese:										
Canada	1 100	100	100	100	100	100	100	100	100	100
Cackling										
Brant										
White-fronted										
Snow										
Blue										
OtherTOTAL GEESE	3100		100	100	10m	100	100		100	1.60
Ducks:										
Mallard		200			80			STATISTICS OF		A State
ikaak Unident.						1.00	E.UOD	8,000	8,808	ELCO
Gadwall									A.	
Baldpate										1000
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal						-		-	1.1	
Shoveler										
Wood										
Redhead										-
Ring-necked							-			
Canvasback										
Scaup					_			_		
Goldeneye						_				
Bufflehead	1		_		50					
Ruddy				_		17				
Other Com, Mergans	r 10	ю								
TOTAL BUCKS :	810	820			110	1,000	2,000	2,000	2,000	2,000
Coot:							200	1,000	1,500	2,000
GRAND TOLALS :	380		100	100	ENU	1,620	3,890	8,280	7,000	4,100

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Cont. -1 (Rev. harch 1953) Interior Duplicating Section, Washington, D. C.

WATERFOWL (Continuation Sheet)

REFUGE Upper KI	Lenath					MONI	THS OF	-20 52 Tab	TO Activity	,]	.9_65_
)-Aarial Consul	the state of the s	leeks	the second s	States of the local division of the local di	ting	the second se	the second se			: (4) Product	tion
(1) : Species :	3/32-20	3/21-27	3/28-4/3	4/4210	1/11-17	1/18-24	1/25-5/1	18		Broods: H seen :	
Swans: Whistling Trumpeter	300	200	3/31 (4)	the state of the s	ar (3) a				2,663		
Geese: Canada Cackling	200	200	10	160	1.0	250		and action of area and be or	16,710	tore and	etive e
Brant White-fronted Snow	VAG 1	10	0.00000	D. († 8 8)	ANDUL OT	gela bia	ent for	ede goe	210		
Blue Other PUTAL GESSE	200	220	360	1.151	201 935 5	250	250		23_873		
Ducks: Mallard	1,500	1,000	(15)	1.000	2,000	2-000	2,000		72-1170		
Binck Unddent. Gadwall	100	100	550	sino sino	15.000	600	600	Special	171,500	g pe a	100
Baldpate Pintail Green-winged teal	1.000 h.000	<u>500</u> 3,000	2,750	7,000	2,000	500 500	51		68.150 132,510		
Blue-winged teal Cinnamon teal		20	89	386	207	390	Soo		7,350		
Shoveler Wood	1.000	1.000	76.0	500	F6(9)	500	500	1712 6440	33.500		
Redhead Ring-necked	10	30	170	10.0	200	300	300		7,630		
Canvasback Scaup Goldeneye	E CO	50 500	270	2,000	1,500	1,000	500		3,150		
Bufflehead Ruddy	30	30 200 100	30 200 120	10	1.000	350	300		700 15,750 31,610		
OtherCon. Mergansen TOTAL DOCKS	20 9,220	7.140	9,570	100	26,020	6,670	5,920		635,230		
Coot:	2,000	2,000	2,030	1,500	1,500	-1,509-	1,500	2 MARYKA	117,120	-	
ORADO TOTALS	11,520	9,150	11,770	20,610	er)27,730	8,420	7,670		778,870	1 1	

	2*250 8*150 52*110 50* Cone	S1°220 0° 000 1° 000 1
(5) Total Days Use :	(6) (7) Peak Number : Total Production	SUMMARY
wans _2,660	100	Principal feeding areas west edge of marsh, shallow
eese	1,150	estuaries, adjacent agricultural fields
ucks 635,230	26,020	Principal nesting areas
oots 117,110 :	2,030	
778,870	2 20 20 Aug Aug 20 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Reported by Edward J. Ormobil
Gadwall		ed in appropriate spaces. Special attention should be given
2) Weeks of	to those species of local and n	national significance.
2) Weeks of Reporting Period:	Estimated average refuge popula	
	Estimated average refuge popula	
Reporting Period: 3) Estimated Waterfowl Days Use:	Estimated average refuge popula Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s	ations.
Reporting Period: 3) Estimated Waterfowl Days Use: 4) Production:	Estimated average refuge popula Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s	ations. The mber of days present for each species. The based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.
Reporting Period: 3) Estimated Waterfowl Days Use: 4) Production:	Estimated average refuge popula Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s breeding habitat. Estimates ha A summary of data recorded under	ations. The mber of days present for each species. The based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.

(Continuetion Sheet) !

Interior Duplicating Section, Washington, D. C. 1953 3-1750 Form NR-(Rev. March 1953)

WATERFOWL

EFUGE Upper Ki	nun th		-	1		MONTHS OF	May	TO	August	, 19 65
: (1) :	5/2-8 :	5/9-15 :	Weeks	of r 6/23-29 :	(2) e p o r t 5/30-6/5 :	ing po	riod		6/21-1/8 :	
Species :	1 1						-			10
Swans:		1	1		1	1			· · · ·	
Whistling		15		Sector Sector						Finter
Trumpeter		1.000		11 NO.4 7						
eese:	Concertainty of the			Section Street to						
Canada	800	500	500	200	280	100	. 50	50	50	
Cackling	1,600	1,000								
Brant							The second second			
White-fronted	5,000	5,000	1,500	80						
Snow										
Blue										
Exter Total Geese	7,650	6,500	8,000		250	100		60	50	
ucks:	1.	and Marshall	The second	2 C 104-59(5)						
Mallard	1,000	1,000	1,000	1 800	1,000	1,000	1.000	1,000	1,000	1.8
Black										1.1.1.1.1
Gadwall	1,000	1,000	1,000	1,000	JE GOD	1,000	1,000	1,000	1,000	1,01
Baldpate	1,000	80								
Pintail	8,800	8,000	300	900	202	200	0.08	200	200	1
Green-winged teal	8,000	2,000	160	100	50		20	20	20	
Blue-winged teal										
Cinnamon teal	200	806	200	608	800	600		500	6.00	1.0
Shoveler	EDDO	500	00	80	80	20	20	20		
Wood										
Redhead		100	200	200	2010	250	280	250		
Ring-necked	10	10			1					
Canvasback	150	80	80	10	10	10	10	10	10	
Scaup	1,000	1,000	1,000	1,000	1,000	800	000	300	200	
Goldeneye	40	20		100	and the second	Company and the	And in the second	C. C. MARINE		
Bufflehead	180	30	20	10	10	10	10	10		
Ruddy	0,000	3,000	1,000	1,000	200	300	010	0.00	200	<u> </u>
Other									and the second	1115-1
Total Ducks	28,000	11,010	5,030	5,640	4,100	3,020	3,610	3,610	3,650	4,48
oot:	4,000	2,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,00
Grand Total	40.000	20_044	9,040	0.540	5,440	A TED	4.44	4.440	4,700	

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Cont. -1

(Rev. March 1953) (A) Aerial Census

WATERFOWL (Continuation Sheet)

REFUGE Upper Klass th

MONTHS OF TO

TO August , 19 65

(1) : Species :	/11-11 :		s of ; 7/25-51 ;	(2) repor /1-1 :0 114 :		peri Al-ALB 16 :	od 17 :		(3) Estimated waterfowl	: Produ :Broods:	Estimate
Ans: Whistling Trumpeter	11 : y e	12	* (*)13/21 *	orded ym	15 1	10 :	<u> </u>		days use	i seen	total
ese: Canada Cackling	50		00	80	80		00	89	81,840 17,800	16	80
rant hite-fronted now	(20) (20)	1784 AD0	JA DODEJI	tions x :	amper of	dere pre	ent for	each aper	80,710 8,450		
lue Inor TORAL GENE ks:	10	60		80	0	80	80	03	111,500	15	80
allard	2,300	280	3,000	8,000	1,000	1,000	1,000	1,000	149,089	8	200
adwall aldpate	1,000	8,000	2,000	8,000	8,000	8,500	8,800	8,0000	185,500		800
ntail een-winged teal	300 10	210	250	800	200	800	800 100	1,000	63,700 82,840		
ne-winged teal namon teal	1,500		800	809	1,100	1,000	1,000	160	78,180		80
ead	800	200	800	200 200	668	008	800	400	32,900	23	100
necked sback	10	10	10	10	10	20 300		500	#,800 60,800		20
eneye lehead y	800	200	40 260				11.1165.1	600	410 2,100 10,000	-	130
TOTAL DUCES	4,870	8,740	0,500	8,619	5,160	5,620	5,890	7,190	828,500	-	1,800
(5) Total Days Us	1,000	1,100	1,500	2,000	2,000	3,000	4,000	5,000	238,700		10
GRAND TOTALS	5,690	4,900	8,000	7,590	r)7,240	8,700	9,910	18,200	1,189,805	41	1,370

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans	105	16		Principal feeding areas Stream channels, marsh, neighbor-
Geese	122,500	7,050	80	ing agricultural fields.
Ducks	822,500	28,550	1,200	Principal nesting areas Along channels; small islands
Coots	238,700	5,000	00	(principally in vicinity of Straits in Unit III
REALE	1,183,800		1,370	Reported by Bdward 3. O'Neill, Wildlife Bielegiet
	* Not simultaneou	usly		
	pecies:	In addition reporting pe	to the birds listed eriod should be adde	n 7534, Wildlife Refuges Field Manual) d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given
(1) S	11	In addition reporting per to those spe	to the birds listed eriod should be adde	d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given mational significance.
 (1) S (2) W R (3) E 	eeks of	In addition reporting pe to those spe Estimated av	to the birds listed eriod should be adde ecies of local and r verage refuge popula	d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given mational significance.
 (1) S (2) W R (3) E D 	eeks of eporting Period: stimated Waterfow	In addition reporting per to those spectrum Estimated and Average week Estimated nu breeding are	to the birds listed eriod should be adde ecies of local and r verage refuge popula kly populations x nu umber of young produces. Brood counts a	d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given mational significance.
(1) S (2) W R (3) E D (4) P	eeks of eporting Period: stimated Waterfow] ays Use:	In addition reporting per to those spectrum Estimated and Average week Estimated nu breeding are breeding hal	to the birds listed eriod should be adde ecies of local and r verage refuge popula kly populations x nu umber of young produces. Brood counts a	d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given mational significance. Ations. Aumber of days present for each species. Auxie based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.
 (1) S (2) W. R. R. (3) E D. (1) P. (1) P. (5) T. 	eeks of eporting Period: stimated Waterfowl ays Use: roduction:	In addition reporting pa to those spa Estimated av Average week Estimated nu breeding are breeding hal A summary of	to the birds listed eriod should be adde ecies of local and r verage refuge popula kly populations x nu umber of young produces. Brood counts a bitat. Estimates has f data recorded under	d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given mational significance. Ations. Aumber of days present for each species. Auxie based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.

Interior Duplicating Section, Washington, D. C. 1953 3-1750 Form NR (Rev. March 1953)

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WATERFOWL

:	A) Asrial	Census			(2)					
(1) :	/8-11 :1		Weeks	of r	eport	ing p	eriod	107022 5500 5	TA DESIDA	
Species :	1 :	2 :	3	: 4	: 5	: 6	: 7 :	8 :	9	
ans:		1		(A) 0/ET	(4)10/8	(1)10/18	(A) 10/19	(4)10/25		
Whistling										
Trumpeter			h i stander		12/10/10/10		- die			
ese:							1.00101.001			
Canada	100	160	900	770	078	130	670	330	280	36
Cackling										AL STAN
Brant							1			100
White-fronted		-		800					60	
Snow										
Blue						1				
CiberTotal Geese	100	150	608	970	003	130	670	330	0.08	ET.
cks:					70	1 Contraction	000	100	1,600	1.03
Mallard	2.000	8,800	3,000	3,600	1	1 000	1,700	1,300	000	
Gadwall	1,500	4.000	10.000	19,850		1,200	1.100	780	1,200	34,60
Baldpate		2,000 800	1,500	1,100	1 000	600	000	2,800	2,000	9,35
Pintail	1,500	2,000	5,000	0,510	1,250	22.260	3,450	1,100	4,900	0.60
Green-winged teal	800	1,000	2,000	-8,180	470			2,870	4,500	8,34
Blue-winged teal		1,000				+				- Color
Cinnamon teal	2010	130	100	100					10	
Shoveler	2,500	2,000	1,000	300	3,300	8,160	800	1,000	4,300	4,00
lood	309	100	200	700	00					
Redhead	380	400	400	420	80	800	80	30	160	
ling-necked									400	
anvasback	80	80	80			1,000		A CONTRACTOR	800	
Scaup	1,200	8,000	0.000	10,300	1,860	1,550		250	50	
foldeneye		and bringstorm			1.4				08	100
Bufflehead	80	600	500			1,200		030	200	LE
luddy	1,000	8,000	2,000	600	1,200	3,050	3,100	Design and the	3,100	1,20
thing C. Merganser	NUMPERATOR IN				and the second	1	-		30	
Total Dacks	13,950	20,050	35,200	43,870	9,340	15,910	9,380	10,980	23,110	78,14
ot:	3,000	6,000	10,000	75,200	44,780	8,000	5,750	5,780	1,780	18,53
Grand Total	17,060	20,200	48,560	120,070	54,940	21,040	15,800	17,000	25,200	96,96

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Cont. 1

(Rev. March 1953)

WATERFOWL (Continuation Sheet)

REFUGE

Upper Elam th

MONTHS OF September TO December , 19 65

(1) :1 Species :	ŀ	Veeks 1/21-27 : 12 :	11/28-12/4	12/6-11	2) ting 11/1-111 1.15.:	peri /10-05:1 16 :	od 17/31-1/1 17 :	- 0	(3) Estimated waterfowl		tion Estimate
Swans: Whistling Trumpeter		30	13 : (A)11/30 50	20	(A)12/11 30	10 :	60	10 :	days use 1,610	: seen :	total
Geese: Canada Cackling	880	150	100	Co/1100	60	100	100	ore area ore area	38,000	1 2 of a	8
Brant White-fronted Snow	30	20	1 boben	igorio se					1,200		
Blue	820	170	100	80	60	100	100		36,660		
Ducks: Mallard Eluck Unidentified	1,000	500 20,000	110	180	180	100	160		122.010	-	
Gadwall Baldpate Pintail		5,000 3,000 4,000	800	200 80	100	100	50 80	Special ng	202,040 218,880 361,180	1 (A. 5796)	
Green-winged teal Blue-winged teal	10	100	800	100		13-13-169	a faga a 1	ield Kam	149,870		7
Cinnamon teal Shoveler Wood	8,008 108	3,000	100	50			•		100,720 11,760		
Redhead Ring-necked		100	70	100	160	100	160	1	81,989 8,899		
Canvasback Scaup Goldeneye				800	700	400			198,500 198,500		
Bufflehead Ruddy	100	100	150 160	150 200	900 300	200 300	165		87,030 141,060		
Total Ducks	14,810	89,630	1,430	1,200	1,000	1,330	1,100		810. 8,001,000		
Coot: Grand Total	20,000	10,000	8,400	500 1,879	800 /er ¹ ,900	1,480	1,200	CINDEFINA S	1,450,960		

	(5) Total Days Use	(6) * : <u>Peak Number</u> :	(7) Total Production	SUMMARY
Swans	1,010	50	N	Principal feeding areas
Geese	34,440	970	0	East edge of Unit 2, Struite, adjacent private agri- culture grain fields.
Ducks	2,641,800	78,140	1 300	Principal nesting areas
Coots	1,450,869	75,230	8	
OPAL	4,128,810 * Not simulta	Decesly ,	200 000	Reported by Edward J. O'Heill (Oct. compute by Sakore and Granns)
Pint Gree Dites	INS	STRUCTIONS (See	Secs. 7531 through	n 7534, Wildlife Refuges Field Manual)
(1) S	pecies:	. reporting pe	riod should be adde	d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given mational significance.
No. of Manager, Name of Street, or other	eeks of eporting Period:	Estimated av	verage ref <mark>u</mark> ge popula	ations.
	stimated Waterfowl ays Use:		ly populations x nu	mber of days present for each species.
(L) P:	roduction:	breeding are	as. Brood counts s	uced based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.
(5) T	otal Days Use:	A summary of	data recorded unde	er (3).
(6) P	eak Number:	Maximum numb	per of waterfowl pre	esent on refuge during any census of reporting period.
(7) T	otal Production:	A summary of	data recorded unde	er (4).
	Emist 13	ana ta		HONTHS OF Beptening To Beerstow . 19 60

-1751 orm NR-1A		М	IGRATORY E	IRDS		Tes			0
Nov. 1945)	UPPER KLAMATE	(othe	r than wat	erfowl)	JANUARE	to	19	95/.65	
(1) Species	(2) First Seen	(Peak N	3) umbers		(4) Seen		(5) Productio	n n n n n n n n n n n n n n n n n n n	(6) Total
Common Name	NumberDat	e Number	Date	Number	Date	Number Colonies	Total # <u>Nests</u>	Total Young	Estimated Number
I. Water and Marsh B Fered Grobe Fied-billed Grobe Hid-billed Grobe Hhite Felicen D. created Grobe Unite Felicen D. created Grobe Hite Felicen D. created Grobe Hite Felicen D. created Grobe Hite Felicen Bittern Sendhill Grene	HO INFORMAS 120 3/2	-1/3 1/30 -3/6 300 1/50	1/13-5/3 1/1-30	81111	Process	1 2 1 1 1		in 1920 Avr Ivo	000 000 150 10 130 300 300 50 250 80 0
I. <u>Shorebirds, Gulls</u> <u>Terns</u> : Killdeer Spotted Sendpiper Avoest Wilson's Fhalarop Ring-billed Gull	No Information 310 2/28-	-3/6	VONS A. ad. A. I. refuge Solution A. refuge A. A. refuge A. A. A. A. A. A. A. A. A. A. A. A. A.		Present • • • • • • • • • • • • •	Sec. S		retore interest	50 20 100 350 350
								neus te	
	duvoj Laulon bie dao	1 of reads to	bennd bes		102 20 20	liture Bodie		niti i tubo	A (2)

ing . Mart, 2008. . Washing

	(1)	(2)	(3)	(4	4	(5)	(6)
III.	Doves and Pigeons: Mourning dove White-winged dove		n wate (fowl) (88) aths o	(other ba	(B)	Refute (27	(Nov 1945)
IV.	<u>Predaceous Birds</u> : Golden eagle Duck hawk Horned owl	Previous Period	8	in <u>norieus</u>		egios op Name od Harat Lida:	30
M	Magpie Raven Crow Beld Regle Kareh Hank		8 Pebe 12 April	100 m	2000 B 2000	artini artini artini artini artini transfil transfil artini artin	10 20
					Reported by	NEW WE THAT IN LASSINGLICHER	
	(1) Species:	Use the correct name order. Avoid genera form, other species	l terms as "seag	ull", "tern'	", etc. In additio	n to the birds lis	sted on
		priate spaces. Spec significance. Group	s: I. <u>Water and</u> II. <u>Shorebirds</u> III. <u>Doves and</u>	Marsh Birds 5, Gulls and Pigeons (Co	<mark>s</mark> (Gaviiformes to C <u>d Terns</u> (Charadriif	iconiiformes and (ormes)	Gruiiformes) Hous
	(2) First Seen:	The first refuge rec	ord for the spec	ies for the	season concerned.	1455011101100	
	(3) Peak Numbers:	The greatest number	of the species p	resent in a	limited interval o	f time.	
	(4) Last Seen:	The last refuge reco	rd for the specie	es during th	ne season concerned	• • • • • • • • • • • • • • • • • • •	
	(5) Production:	Estimated number of ;	young produced ba	used on obse	ervations and actua	l counts.	
INTDU	(6) Total: IP. SEC., WASH., D.C.	Estimated total numb	er of the species	s using the	refuge <u>during the</u>	period concerned.	36104

(oth 	(3) k Numbers per Date 5/16-22 5/16-21 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/16-22 5/30-6/	s of Last Number	4) Seen Date Present	Number Colonies	(5) Productio Total #	oved a	(6) <u>Total</u> Estimated <u>Number</u> 100 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 100 200 200 100 200 200 200 100 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200
n Peak nte Number nd 180 330 130 510 780 220 10 200	Month (3) k Numbers er Date 5/16-22 5/16-22 5/30-6/ 8/22-28 8/22-28 5/30-6/ 7/25-31 7/25-31	seill	4) Seen Date	Number Colonies	(5) Productio Total # Nests Nests 70 50 50 5 100 620 239	n Total Young 260 700 232	Total Estimated Number
nte Number A 180 330 130 510 780 220 10 200	k Numbers per Date 5/16-22 5/30-6/	Last Number		Number Colonies	Productio Total # Nests 100 70 50 50 50 50 50 50 50 50 50 50 50 50 50	Total Young 260 700 232	Total Estimated Number
nte Number A 180 330 130 510 780 220 10 200	Date 5/16-22 5/16-22 5/30-6/ 8/22-28 8/22-28 5/30-6/ 7/25-31 7/25-31	Number Still	Date	Number Colonies	Total # Nests 100 70 50 50 50 50 50 50 50 50 50 50 50 50 50	Total Young 260 700 232	Estimated Number
330 130 510 780 220 10 200	5/16-22 5/30-6/ 8/22-28 8/22-28 5/30-6/ 7/25-31 7/25-31		Present.	1	70 50 5 110 620 239	700 232	100 200
	U. A sdl	DURTENI bavol s				1 - 1	
d 22 300 1,290	7/25-31 5/16-22	8 <u>111</u> 0 0 0 0	Present N N N N N N	H O D A			100 250 50 1,000 2,000 2,000
320			to e edau		st. 100	ak Subler	1,200 3,000
	320 1, 350	320 *	320 * *	320 * * * 1,350 * *	320 • • • • • •	320 " " " Ent. 100 1,350 " " " Est. 300	320 " " " Est. 100 Est. 300

and the second
	~					FEETEN CONTRACTOR
	(1)	(2)	(3)	(4	(5)	(6)
Mour	<u>s and Pigeons</u> : ning dove e-winged dove	NCHE OBSER		(3) (3)	Refue Gron Granth.	(Geel von)
Gold	n		1 8/22-28	Still Present		S 10101 10101 10101 10100 10100 10100 100000 100000 100000 10000 10000 10000 10000 10000 10000 100
22 23 2	905 000		· · · · · · · · · · · · · · · · · · ·	Reporte	d by E.J. O'Netll	
(1)		order. Avoid genera form, other species o priate spaces. Spec:	l terms as "seagul occurring on refug ial attention shou s: I. <u>Water and M</u> II. <u>Shorebirds</u> . III. <u>Doves and P</u>	A.O.U. Checklist, 1", "tern", etc. e during the repor ld be given to tho <u>arsh Birds</u> (Gaviif <u>Gulls and Terns</u> (<u>igeons</u> (Columbifor	1931 Edition, and list grou In addition to the birds li ting period should be added se species of local and Nat 'ormes to Ciconiiformes and Charadriiformes)	sted on in appro- ional Gruiiformes) eous
(2)	First Seen:	The first refuge reco	ord for the species	s for the season c	oncerned.	
(3)	Peak Numbers:	The greatest number o	of the species pres	sent in a limited		araz, tara
(4)	Last Seen:	The last refuge reco	rd for the species	during the season	concerned.	
(5)	Production:	Estimated number of j	young produced base	ed on observations	and actual counts.	
(6) INTDUP. SEC		Estimated total numbe	er of the species t	using the refuge <u>d</u>	uring the period concerned.	36104

-1751 orm NR-1A		1		IGRATORY E or than wat		0				
Nov. 1945) Refuge Up	por Klann	•	(0 CH e			aber	to Decarba	r 19	96.65	
(1) Species	() First	2) Seen		3) Jumbers		(4) t Seen	Contraction of the second seco	(5) Productio		(6) <u>Total</u>
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # <u>Nests</u>	Total Young	Estimated Number
I. <u>Water and Marsh Birds</u> : Hared Grobe Vestern Grobe Pied-billed Grobe	Previone 		300 4,770 100	9/8-18 *		resent			and the	2,000 000 300
Rud-Nocked Grobe White policam Double-Cr. Cornerant Great-blue Horon Connon Egret Black-crowned Mt. Hor American Bittern Sandhill Grane		11/7-80	10 50 200 81 5 10 30 81 5 10 30 81 5 10 30 81 5 10 81 5 81 81 81 81 81 81 81 81 81 81 81 81 81	11/7-20 9/5-18	Semo 10 Still No 3 10	19/19-31 Propent lecard 10/5-19 lecord	A B C A C A		start foll v oll anosti I logical - elosi storik	10 100 300 150 100 200 200 200 10
I. <u>Shorebirds, Gulls and</u> <u>Terns</u> :	51 Editio	list. 19	U. Check "torm", wring th	LIONS In the A. "sengull" Friege	UNTERI DIVITERI BA CONT BA CONT SILITI	ot aakee a general-b poctes des	the correct Avoid a field	ezU ebio utol	pecies:	
Killdeer American Avecet Spetted Sandpiper Vilcon's Phalarope Californis gall Ring-billed Gull	Provious 	Period 	300 700	lesoră 	No Same 	Becord 	La spices Licence.			50 200 30 100 2,000 3,000
Forester's Tern Black Tern Chopian Tern	berned		-	lleoordx n n	No n	Becard 	treaters (reaters)		est fluction	500 1,000 50
	Lanton br	a tions a	needo go	bezad bec	borg in	10 20 201	inter testa		notranhe	

	(2)	(3)	(4,	(5)	(6)
I. <u>Doves and Pigeons</u> : Mourning dove White-winged dove	No Observations	No Record (1) No Record (1) No Record	(other (other (5) Peak Nm	(8) 101 - 11	60
7. <u>Predaceous Birds</u> : Golden eagle Duck hawk Horned owl	Previous Period Residents	1 12/19-31	t 088 bo	inaber Da Ider Brechma Jent	and stars
Magpie Raven Crow Ferruginous Bawk	20 9/8-18 3 12/19-21		No Record	n para	30 10 10 10 10 10
Rough-legged Hawk Bald Hagle Marsh Hawk	15 * 2 * 14 11/7-80	100 100 100 100 100 100 100 100 100 100		-14 11 C	te oli estidi - rea 30 demoi e featorre- esti real 20 metric con esti
		<u> </u>	Repo	rted by	<u></u>
(1) Species:	Use the correct name order. Avoid genera	l terms as "seagul		. In addition to the	ne birds listed on
	priate spaces. Spec	ial attention shou s: I. <u>Water and M</u> II. <u>Shorebirds</u> , III. <u>Doves and F</u>	Marsh Birds (Gav Gulls and Terns Pigeons (Columbi	those species of loc iiformes to Ciconiif s (Charadriiformes) formes) ormes, Strigiformes	cal and National formes and Gruiifor and predaceous
(2) First Seen:	priate spaces. Spec	ial attention show s: I. <u>Water and M</u> II. <u>Shorebirds</u> III. <u>Doves and F</u> IV. <u>Predaceous</u>	ald be given to <u>Marsh Birds</u> (Gav <u>Gulls and Terns</u> <u>Pigeons</u> (Columbi <u>Birds</u> (Falconife	those species of loc iiformes to Ciconiif s (Charadriiformes) formes) ormes, Strigiformes Pas n concerned.	cal and National formes and Gruiifor and predaceous sseriformes)
(2) First Seen:	priate spaces. Spec significance. Group	ial attention shou s: I. <u>Water and M</u> II. <u>Shorebirds</u> , III. <u>Doves and F</u> IV. <u>Predaceous</u> ord for the specie	ald be given to <u>Marsh Birds</u> (Gav <u>Gulls and Terns</u> <u>Pigeons</u> (Columbi <u>Birds</u> (Falconife es for the season	those species of loc iiformes to Ciconiif g (Charadriiformes) formes) prmes, Strigiformes Pas n concerned.	cal and National formes and Gruiifor and predaceous sseriformes)
(2) First Seen:	priate spaces. Spec significance. Group The first refuge rec	ial attention show s: I. <u>Water and M</u> II. <u>Shorebirds</u> III. <u>Doves and F</u> IV. <u>Predaceous</u> ord for the species of the species pre	ald be given to <u>Marsh Birds</u> (Gav <u>Gulls and Terns</u> <u>Pigeons</u> (Columbi <u>Birds</u> (Falconifo es for the season esent in a limite	those species of loc iiformes to Ciconiif s (Charadriiformes) formes) ormes, Strigiformes Pas n concerned. ed interval of time.	cal and National formes and Gruiifor and predaceous sseriformes)

(6) Total: Estimated total number of the species using the refuge <u>during the period</u> concerned.

REASON	HD COPY	WATERFOWL UTIL		RIES AND WILL	and the first	ECTED COPY		
(-1)-108 4	page, Into	- Klamth	Sandana Ana Sang Million Card Sand		ogor situr i	-+ 22 20 6		
			For 12	-month period	12 Decommons	st 31, 19		
	Reported by	tward J. O'Neill	Title	Wildlife	Dietofree			
	(1)	(2)	taddadai un binarra	(3)	(4)	(5)		
	Area or Unit Designation	Habitat Type Acreage	i other	Use~days	Breeding Population	Production		
	20025	Crops	Ducks	1,098,050	122	360		
	that types of	Upland	Geese	120,000	0008 42	80		
(80	of Pel. Bay)	Marsh 8,455	Swans	b.C. 2,600 m	1089			
(00.	•1 101	Water 550	Coots	484,300	101 48 1 of 212	150		
	air descript	Total 3,005	Total	1,704,950	S18 80 F	000		
		Crops	Ducks	480,000	128	800		
	al II as as d	Upland	Geese	10,030	aoto 10 :	(2) Habittat		
	fernioultural.	Marsh 5,000	Swans	3,040	bas			
(Ne.	of Pel. Boy)	Water 23 Total 5.106	Coots Total	264,500	14	330		
	onal sub-	Total 5.106	IUUdl	757,570				
	III	Crops	Ducks	1,611,830	136	400		
	pe foods:	Upland	Geese	50,200	0011 78			
(Ne.	of Straits)	Marsh	Swans	2,310	8 TAM	80		
	the rela-	Water Total 4,422	Coots Total	103,000	230			
	ber areas	Crops	Ducks	3,189,880	386	1,060		
	n and extend-	Upland	Geose	180,230	munt 130	80		
	to strate of	Marsh 11,000 Water 513	Swans Coots	7,950				
	tow plays	Total 12,535	Total	4,220,860	000	1,870		
	four types	Crops	Ducks	A	bris street			
	possible	Upland Marsh	Geese Swans	eduamos ed bi	shou	Of Charles and the second second		
	mented by		Coots		101110			
		Charlen Der	Total	s should equa	STREET.	CECHICALOW SHICK STATE		
						45 C3 C5 C7 C3 C3		
	water fowl	Crops	and the second of the	days is comp	-980 18	vab-eau (£)		
		Upland Marsh	Geese Swans	CROCK COLUMN	MODULATION CONTRACTOR	College I and a given in a starting and		
		Water	Coots			BECORDUCING PROJECTION		
		Total	Total	Google and includes processing the local party of	Call-references that had the Creative Designed	albeera (a)		
		Crops	Ducks	abrite 10 viros	categ			
		Upland Marsh	Geese Swans		total Patrick			
1	egs sight	Water	Coots	CiteDouche Chapton Condition (Intel Condition Condition		Cost but in spectra constant and other		
		Total	Total		GCDMCCA THEORY AND CONTRACT			

¢, 0.

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

Crops include all cultivated croplands such as cereals (2) Habitat: and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal sub-mergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; 080.1 and in the water category are all other water areas USI inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa UTUI lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding

Population: An estimate of the total breeding population of each category of birds for each area or unit.

COMMENTIN COPY

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

Pa 3-1750c Form NR-

(Sept. 1,50)

Refuge

WATERFOWL HUNTER KILL SUR

Upper Klamath

Year 196

			INSTRUCTIONS	1			Acatal	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Weeks of	No. Hunters	Hunter		Total	Crippling	Total	Est. No.	Est. Total
Hunting	Checked	Hours	Waterfowl Species and Nos. of Each Bagged	Bagged	Loss	Kill	of Hunters	Kill
10/9-16	11 broose ed bla	49	Cost(9), Mallard(7), GW-Ecal(6), C. Goose geose(3), Widgeen(2), Pintail(2), Sheveler (1), Canvashack(1), Waod duck(1), Cinn. Teal(1)	swed od	iess T re wee to survey rea these y	er 04 Sud al leog 1 vine a	20 lat (2) The dat	334
10/26-22	12 of ma.	an Arag	Widgeon(11), Mallard(6), Hoddy(4), Ebevoler(5), C. Geosg(3), Pintail(1)	29	10	lec es d d immter	Loo 33 .	104
10/23-29 10/30-11/5 11/6-12			resentative data. Aseds ged off	ion to a	aken to col total numbe	Md be t	75 75 75	2. . 3061
11/1319	18 (10) brs.	69	Widgeon(14), Mallard(4), Shoveler(4), Baddy(2), Boffleheed(2), Fistail(1)	1n dec	owl species	18 b waterf	45 aki (d)	114
11/20-26 11/27-12/3 12/4-10 18/11-17 12/18-24 12/25-31 1/1-6	-2692	(() 8000	owl reported knocked down but not receveration		al e fai	bel Teal ged Teal and tota	90 60 40 60 80 20 20	
TOPALS	30 _{ja ibal}	180	Widgeen(27), Mallard(17), Ceot(0), Sheveler(8), Enddy(6), GW-Feal(6), Canada geoe(6), Fintail(4), Bafflehead(2), Canvasback(1), Wood dack(1), Cinn. Teal(1)	ber 89 : 0, 2), to 100	e t fs al mm tked (Golum projected		des 748) auni LEX (?)	2,260
Average Per Hunter		8.0	0,17 geose 2,27 Ducks	2.44	0.58	3.02		
	03-8420		(over)	lepor te d		r Sekore data by		

(1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.

moon(2), Widgeon(2), Fintall(2), Shorele

50 52.5

- (2) The goal is to survey a minimum of 25 percent of refuge hunters each, week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.
- (3) Record the total number of hours the hunters spent hunting on the refuge.
- (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Greenwinged Teal (1).
- (5) Record total numbers of waterfowl bagged.
- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.

\$2.0

Year 1963

023.3

- (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
- (9) Kill sample projected to 100 percent. Column 9 = Column 8 Column 7.

24.25

lejerted by: Bhlise Selerat

88.0

80348-60

0.8

Speer Electrich

-

93-35 VG

Margar Vi

11/27-12/21 78/6-30

EL-1 1481

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27.00

AND ESPERATE

3-1752

Form 1 2 (April 1946)

6			п

Refuge UPPER REALITY

Months of JANUARY to APRIL , 19 65

(l) Species	(2) Density		(3 You Produ		(4) Sex Ratio	R	(5) emova	ls	(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Blue Grouse	Pine Forest 30 acres	nne bei Teneg Anni e L beis	NO	DESE		lava 12: di 13: di 13: di	as. Mito a linare	typ 101 nalq	50	
Ruffed Groupe	end ed fireds bed	tindura u			Id Zupog start	r be	ti ed	biro	90	
Ht. Quall	Pairagent Ter	the etc			Licita asses	10.3	16.9	quiss	30	
Percupins admos	vetions and sotnal	n obse			beogloriq gau ding babitar	ng D	iner i	d nu	10	(3) YOUNG PRODUCE
	ate, include	pheas	urfeey.	r insti	inarily to a phase	iq ai Linv	21[qq 11 ;	nima ecter	This ou other a	(4) SEX RATION
	g the report parts	.tub b	women	visor	in éach cabe	100	um C	tad	Indicato	(S) RELAVONER (S)
	eport period. This		daris Etne		inting their	nedan abta	n in ent i	tod b	Estination .	(6) TOTALI
	a covered in survey	na bas Listi	no.138 coeqe	lungos basi i	deternine i informable	ed t	ur ha pert	(Jen tadijo	indfort bolind	(7) REMARKS
								* (s) **		
			.be		bluoda berte	703	20138	i ero	oð síðarki	enno enla columna api
O'Heill										

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use a

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 Nc. 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.

***** 3-1752

Form NF

UPLAND GAME BIRDS

(1) Species	(2) Density		(3 You Produ	ng	Sex Remot		(5) Removals		(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat		Number broods obs'v'd.	California da	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
as Grouse	intering interingenter	10.	NO OB	arta.	bandard type			not not Balq File	50	
fed Grouse , Quail	terice and all and a solution of the solution of the solution of the solution of the solution and solution an	pie ar pie ar bed to			nare poasibl s on represe areas shoul un produced			anoi anoi Igmaa min b	30 10	(3) YOUNS PRODUCED
	nts, stc. Include				dayidad gulf		ev.ld alfqq	sínos s ceui	to repre	(4) SEX RATIO
	s the report period	irwb b	evotred	(10)	in each oath	ted	nun 1	tota	stanibal.	(3) REMOVALEY
	sport paried. Ind. refuge during cer	g bha i stic bha	atrud 1 gald	iruge Egre	using the r		al nu ent h	d tot	Setimate include	(6) IQTALI -
	a covered in aurvay requested.		noide Roogs						Indicate include	(7) RELARES
			.be	ati ei	bivois beu		botu	d eug	os eldeori	* Only columns and

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 heed 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 Nc. 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.

Strang I stand

- (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.

pd 3-1752 Form NP (April __46)

UPLAND GAME BIRDS

1613

Refuge Upper Klameth

Months of September to December , 1965

Form MR-2 - UPLAND GAME BIRDS. *

(1) Species	(2) Density	ar at h	(3 You Produ	ng	(4) Sex Ratio	R	(5) emova		(6) Total	(1)	
Common Name	Har partit moves in	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent inform specifically re List introductio	ation not quested.
Blue Grouse Ruffed Grouse	Pine forest 30 ac.	encuel aneral Land, b ed in W ubmitte s ereas Lunder	i list res s sampl	ricul mbol Fig tive	pes should t ch as to obs reverting ag dard type sy e possible. a representa eas should b	sear when	l cour	nd h te, d be	25 10		
	stons and actual co		noqu	beas	produced, b g habitat,	oung ntiper	Nor	-			(٤)
	e, etc. Include da				•0	[dal	ava	1 29.	This colum other spec		(4)
W seasons,	the report period. ort period. This m ofuge during certai	the rep	ring	rb eg	ing the refu	ar na	daura	otal	Estimated	REMOVALS : TOTAL :	(5)
	aovered in survey. equested,				etermine pop nformation n					REMARKS :	

· Only columns applicable to the period onvered should be

Reported by: Edward J. O'Neill

Refuge Veper Klainth

Form NR-2 - UPLAND GAME BIRDS.*

Banou food by: Banners J. O'Balli

to Boosuber , 1966

(1) SPECIES:	Use correct common name.	(2) .(3 Density You	(1) pecies
(2) DENSITY:	Applies particularly to those species con hunts, etc.). Detailed data may be omitt numbers. Density to be expressed in acres information is to be prefaced by a statem number of acres in each cover type found information need not be repeated except a	ed for species occurring in limite per animal by cover types. This ent from the refuge manager as to on the refuge; once submitted, thi s significant changes occur in the	ed the .s area
	of cover types. Cover types should be de information but not so much as to obscure swamp, upland hardwoods, reverting agricu grass prairie, etc. Standard type symbol No. 7 should be used where possible. Fig observations and counts on representative size of sample area or areas should be in	the general picture. Examples: s lture land, bottomland hardwoods, s listed in Wildlife Management Se ures submitted should be based on sample areas. Survey method used	spruce short eries actual
(3) YOUNG PRODUCED:	Estimated number of young produced, based in representative breeding habitat.	upon observations and actual coun	its
(4) SEX RATIO:	This column applies primarily to wild tur other species if available.	key, pheasants, etc. Include data	. on
(5) REMOVALS:	Indicate total number in each category re	noved during the report period.	
(6) TOTAL:	Estimated total number using the refuge d include resident birds plus those migrati		
(7) REMARKS:	Indicate method used to determine population include other pertinent information not s		130

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

Est.

amilit

1000

(1) Species	(2) Density	(3) Young Produced	ang Bemovals		(5) Losses		(6) Introductions		(7) Estimated Total Befuge Population		(g) Sei Rati		
Common Name	Cover types, total Acreage of Habitat	Bunber	Hunting For Re-	801d	Jor Reservoh	Predation -	Disease	Minter Loss	Number		At period of Createst use	As of Dec. 31	1 1 1
Black-tailed decr	Pine-Aspin-20 ecres	Bot. 5			2 1 2 2			ntorn nd ha 53 53 53 53 53 53 53 53 53 53 53 53 53	bet Lep te te get	an the deal the summp, her prairie huld be use 1 wounts on	Est. 20	10	
llack Bear	• • •	. 23. 101 - 10 Da		in all	19.63 7 10 150 <i>d</i>	20		int inte	0 A.	mitel indus mitel indice	l report	d (c) 1 (a) ²	
	assest into stabilor	dis estimates	12.1 - 1		econ 9 399			to s rá ys	obde Sections	On the cash o	:6525:	(s) - 1	
	.botimes any foots				1.65		19	and e	6 D	anghal 18	PERCENCE TO	E (0)	
	s refuge at partod of 19	<u>species</u> es là <u>ji.</u> essies di esc			123 A.L. Age 1.A		8 S B	ranta nation nation		a selo sineig acthal	TOTTAE 20	s (8)	

Seaarics:

Beported by

Edward J. 0'Neill

Street Congo I

Form NR-3 - BIG GAME

(1) SFECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisians white-tailed deer.

- Combrand

- (2) DENSITY: 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 total number of young produced on refuge.

Reported by Conducto C. O'Felli

- (4) REMCVALS: Indicate total number in each category removed during the year.
- (5) LCSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIC: Indicate the percentage of males and females of each species as determined from field observations or through removals.

17060

3-1754 SMALL MAMMALS Form NR (June 1945) Refuge Office RLAWATE Year ending April 30, 1965														
(1) Species	(2) Density	at been	62a		(3) ovals		10 20	D		(4) tion of				(5)
of North	the second		10 10 10 10	in	irre in c	ige V bosti	, 624 1 000	Share Trapping		ping	uge	ted		Total Popula-
	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Fredator Control	For Re- stocking	For Re-	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Fure Destroyed	tion
Muskrat -assoint	Hardsten bulrush marsh 11.960 acres	Lasias : (t. from	N	erros late	inf. a vi	logas Bacal	ingtina i Instati	15 60 73 10 50 61	ilener banki					2000
Beaver bedd	etc. along 5 ni. bound 10.000 acres marsh	ary Inter)		0	N			na 10 1 Iesto le l 10 101 Isto les	n jafa n jafa n jafa n jafa n jafa n jafa					10 10 50 10 5 5 50
Bobcat Raccoon Percupine Snowshoe Rabbit	30 acres pine forest		35			E								50 eeestland 20
	y rearved since April d'age by Service Preis under bestingelisted.	n she r	255		100 - 2		bota a Ini	ste thé ste poi	izheŭ versg danti		-	LIATO	een (2
en by Service a of unprime- er sgootas	Predator Animal Hunte	to pari osch q donabel od.		ide i ide i lag bai bai g m		l ensi to u edatan tilba edit	l bog slave Loto io bi tž sv	ate-tra ate the sect. I read or damp de eh	Ca el Statt Perre Rese Bool		9 202	1209		
REMARKS:	Muskrets suffered los	ises due			(a) 20	ditem 1			othal	: 607		PE JA	ROF (Q	7

Reported by _____Edward J. 0' Heill

TISTEDCTIONS

Form NR-4 - SMALL MANNALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

> Use correct common name. Example: Striped skunk, spotted skunk, shorttailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Manuals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

Applies particularly to those species considered in removal programs. Detailed data may be emitted 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 is 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, bottom land 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) REMOVALS:

REMARKS:

DESCRIPTION OF STREET,
(1) SPECIES:

(2) DEISITT:

Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Huater. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF NUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

32715

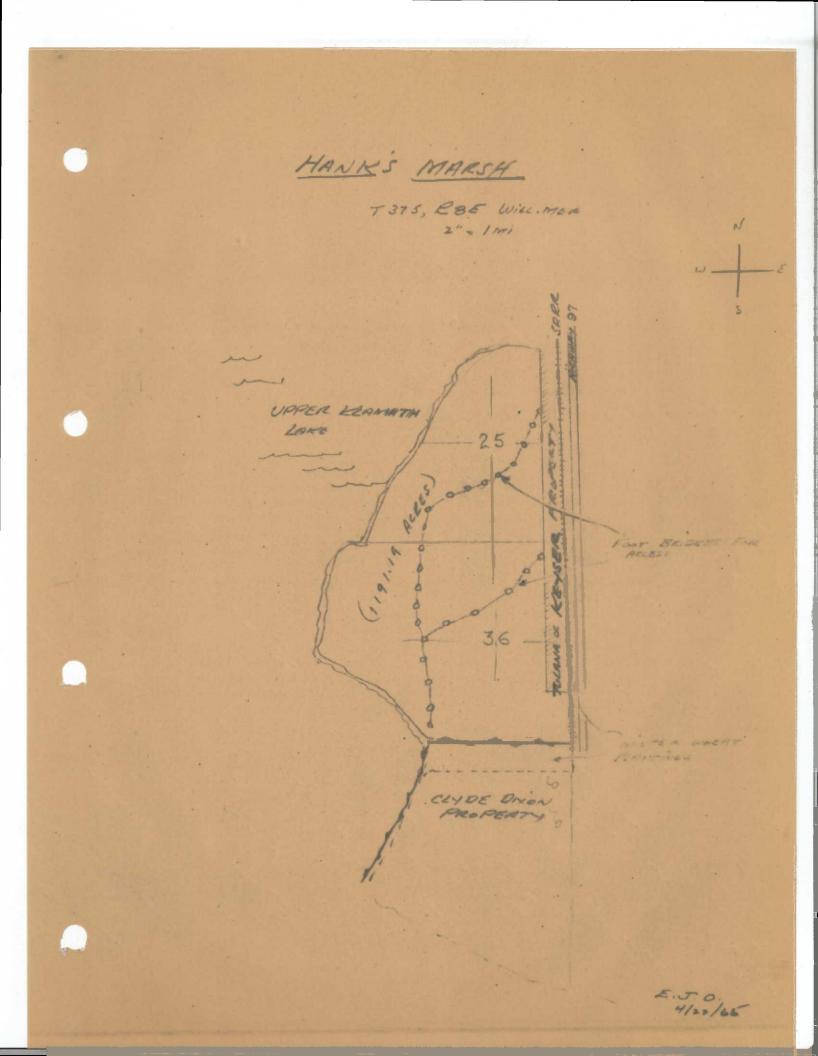
3.1755 Form NR-, DISEASE	Fear 19.65
Refuge Upper Klameth Botulism	Lead Poisoning or other Disease
Period of outbreak Image: Material content of the second content	Kind of disease Load Peisoning Species affected Duebs Number Affected Actual Count Species Actual Count Mallard 100 Number Recovered No information Number lost • Source of infection Shallow establies as straits,
Areas affected (location and approximate acreage) Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.	Water conditions Good
Condition of vegetation and invertebrate life	Remarks Probably a comparable annual loss is involved but area too wast for detailed coverage
	Reported by: Edward J. O'Neill, Wildlife Biologist DNTDUP., D.C 53818-5

NR-6		Bur	eau of Sp	ort Fishe	eries and Wildlife				
			See Instr	uctions o	LATIONS on Reverse Side)				
Refuge Upper X	lease th	uge employee	Items lc s actually	and 1. y partici	In "Off Refuge" column pate. EXCLUDE these fr	Calenda	Year	1965	
l. Visits a. Hunting	710	b. Fishing	7000	c. N	fiscellaneous 4850	d. TC	TAL VISITS_	12560	
la. Hunting (on refug	TE TEMPERATE	In the owner of the table	DOSCLATUS	OFFICIANI	. Refuge Participation (gro Refer to Tule 1		ion	VISIC	33.
Waterfowl	HUNTERS 710	ACRES 3364	MANAGED BY	**	TYPE OF ORGANIZATION	NO. OF GROUPS	NUMBER IN	NO. Of GROUPS	NUMBER IN GROUPS
Upland Game	N Chene open	ONE	17 Tracti		Sportsmen Clubs	Inform	stion on "s	porce	
Big Game	toest to rN'	O.XNE	ly conside	arel with	Bird and Garden Clubs	undary, e may be	unless estel greater.	blished	r e
Other	CPIDE GLON	Daylar et	nilar hunt	·2uto	Schools				
Number of per	manent blinds	check 110 and	d out of h	unters,	Service Clubs	a.astem	mt of blin	ga • .	
Man-days of b	ow hunting inc	luded above	vpe of h0	sting	Youth Groups				
	-days of huntin	r usage. O			Professional-Scientific	d or fra	ction there	o£*	
	2020				Religious Groups	assenger odnversi	s per car)	18	
lb. Fishing (area ope		n refuge lands		imprict1	State or Federal Govt.	1419 mil	treek and w		
observe vi	OF AREA			rivers o	Other	l mles	s they stor	.to	
	statise of an	the refund	THE PRESENCE	3	. Other Activities				
Streams and S	hores	ng, fishing Tucu	10	cching, r	TYPE NUMBER	aco loste	USP. OPPIC	191	NUMBER
lc. Miscellaneous Vis	its	Any person	Who is or	1 ref ge	Press Releases	Radi	o Presentatic	ons	
Recreation	4750	Official	100	_	Newspapers . (P.R.'s sent to)	Exhi	bits		
Economic Us	e 0	Industrial	0	TERTRICTL	TV Presentations	Est.	Exhibit View	vers	
3-1756					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				

(Rev. 4/63)

	6 Seported by: J.T. Annear	
	INSTRUCTIONS DESCRIPTIONS	
tem 1:	: Total of a, b, and c, equal d.	
Elshi	"Visit" - definition. Any person who is on refuge lands or waters during a day the purpose of: hunting, fishing, bird-watching, recreation, business or econom visit, or similar interest. INCLUDE - those who stop within the refuge while tr highway because of an interest in the area. EXCLUDE - persons engaged in oil or not directly related to the refuge, persons using refuge as most direct route or of traffic, and those boating on navigable rivers or the Intercoastal Canal, unl observe wildlife on the refuge. <u>Computing visits</u> . Where actual counts are impractical, "sampling" is used with end samples varied by season or weather. A conversion factor of 3.5 (of passeng used when accurate figures are not available. Each refuge will develop a conver boats based on range of usage. Count a camper once for each 24-hour period or f	dic use, official eaveling on a public other industry principal avenue ess they stop to midweek and week- gers per car) is sion factor for
	Managed hunts require check in and out of hunters, issuance of permits, or assigned the second state of th	mment of blinds.
tem lb:	Lands adjacent to refuge. Normally considered within 1 mile or less of boundary sampling procedures cover a wider area. For big game hunting, the distance may b: Acres of streams open to fishing, if practical; otherwise just miles open. Info is primarily for coastal fishing.	be greater.
tem lc:	c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boat center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits und	
Visit a,	Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factorie from Item 1.	s. EXCLUDE these
	2: INCLUDE the "On Refuge" groups in Items lc and l. In "Off Refuge" column includ meetings in which refuge employees actually participate. EXCLUDE these from Ite	
	: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUD	





Hank's Marsh 1965

I GENERAL*

Hank's Marsh, acquired under Public Law 88-567 (Kuchel Bill) was under Bureau jurisdiction this summer for the first time.

In past years, hunting has been available to the public and muskrat trapping permits have been issued by Bureau of Reclamation, the holding agency.

II WILDLIFE*

NR Forms attached illustrate the waterfowl use involved during the year at hand. Very little field investigation has been possible due to innumerable other biological activities this year. A total of 151,480 waterfowl use days was estimated for the year. Peak number was 25,000 ducks in November.

Of interest is the note that a Klamath Falls hunter shot one of two Egyptian geese which were flying with white-fronted geese over the marsh in November. The specimen was mounted for display and has been identified by U. S. Game Management Agent William Rush.

The black-crowned night heron colony, which formerly nested north of Upper Klamath Refuge, apparently shifted sites and we found some 200 nests on Hank's Marsh in June and July.

HM

3-1750 Form NR-1 (Rev. March 1953)

BC

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WATERFOWL

REFUGE	s mansh					MONTHS OF	JANUARY	TO	APRIL	_, 19 ⁶⁵
(1)	: : : 1/3-0	. 1/10-10	Weeks	of r	(2) e por t : 1/31-2/5	ing p	eriod	/21-29 2	/28-3/6	8/7-18
	: 1	: 2	: 3	: 4 :	: 5	: 6 :	7 :	8 :	and the second sec	: 10
Swans:	: 1 (A) 1/8	1	1	1	Contra Area	· · · · · ·		1200		1
Whistling							Contraction of the	04		
Trumpeter				and the second second						
Geese:			1							
Canada	1	C. Salari	1. 1842 12		ale trans	A States of the	A Same			
Cackling										
Brant										
White-fronted										
Snow							and the second			
Blue										50
Other TOTAL GERSE	1								00	00
Ducks:										
Mallard Black Unident.	1000									500
						4				
Gadwall								- 2		
Baldpate										
Pintail										
Green-winged teal						9				
Blue-winged teal	2						1			
Cinnamon teal	1					-				
Shoveler										
Wood										
Redhead						the second second				
Ring-necked										
Canvasback										
Scaup Goldeneye		+								
Bufflehead										
Ruddy		+								+
Other TOTAL DUCKS:			800	800						500
	a states					1				
			They a							A Frank State
TOTAL, CRAND	-	200	500	RIA	500	Contraction Pro-	800	EUS)	1960	500
										1. 1. 1. 1.

3 -1750a

(4)

RC

Cont. 1 (Rev. March 1953)

WATERFOWL (Continuation Sheet)

REFUCE MANKS M	ARSH		116			MON	THS OF	ANUARY	TO APRIL	,	19
Species :	71-0 11		3/28-4/3 : 13	4/4-10 : 山	ting		i o d 17 - 7 : 17 :	- 0	Estimated waterfowl	: (1 : Produc : Broods: : seen :	tion Estimate
Swans: Whistling Trumpeter	Y	armano <u>r.).</u>	(A) 3/82		ider (3)						
Geese: Canada Cackling	100	100	70	oq 60	100	100	100	No and ac nore are onld be	8,839	102 OL	otattya cho
Brant White-fronted Snow Blue	et out) ja		erjit lodin	ationa T	anno por s	of days p	neent fo	, 990p 40 	0168.		
Otherroral GERSE:	100	100	10	Cherry Colo	100	100	10		5,810		
Ducks: Mallard	500	300	160	200					8,120		
Gadwall		BOTLING		mjq 50 s	3,000	3,000		506079	70,830	10 08	CTARK!
Baldpate	1.	additio	a to the	30	ad on f	our other	r species	000000170	au 1 210 a gan	100.000	
Pintail				100							
Green-winged teal Blue-winged teal	10 10		10		ush 7534.	MATATA	a Refuses	Field Na			
Cinnamon teal		12.13		10					70		
Shoveler	3,000		60	2.000					17,920		
Wood Redhead Ring-necked	10	10	10	10 30	Bern	and he		6	70 420		
Canvasback	50	300	160	50					2,020	1.	
Scaup			20	500	547	allpal net	arjuž -szar	a Coloran		199	
Goldeneye	2								350		
Bufflehead *	300		260	100					UAL		
Ruddy	200	300	520	200							
maner Con. Merganse	and the owner water w	00	40	TA	LLTI	и трат тес	errus erres	2	State Street Barrier	- 1. m.	
TOPAL BUCKS:	2,620	2,020	1,540	2,390	3,000	3,000	2,000	SUMMUSI	139,790		
Coot:	150	200	200	200					5,080		
CHAID TOTALS:	8,578	2,380	1,900	8,600 (or	100 100	3,100	2,100		182,480	1	

	and the second second second second	Production and the second s	
(5) Total Days Use :	(6) (7)	ion	SUMMARY
Swans 0	0 1 10	Principal feeding area	adjacent agricultural fields
Geese 5,810	100		
Ducks 120,700	3,000	Principal nesting area	⁶
Coots 5,889 :	290		
AL 151,480	000 500 000 3,000 20 10 10 10 10 20 10 10 10	Reported by	0026433
"not simultaneous			
(1) Species:	In addition to the birds l reporting period should be		Field Manual) occurring on refuge during the Special attention should be given
(2) Weeks of Reporting Period:	Estimated average refuge p	opulations.	C 39
(3) Estimated Waterfowl Days Use:		x number of days present for	each species.
(4) Production:	breeding areas. Brood cou		s and actual counts on representative more areas aggregating 10% of the build be omitted.
(5) Total Days Use:	A summary of data recorded	under (3).	
(6) Peak Number:	Maximum number of waterfow	l present on refuge during any	census of reporting period.
(7) Total Production:	A summary of data recorded	under (4).	a Estimated a Froduction
A			

Interior Duplicating Section, Washington, D. C. 1953

3 -175504

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3-1750 Form NR-(Rev. March 1953) (A) - Aerial Survey

WATERFOWL

REFUCE

Hank's Marsh

MONTHS OF May TO August , 19 65

: 1	(2) Weeks of reporting period										
(1) : Species :	: :	2 :	3 1	і Ц :	5 :	6 :	7 :	8 :	9 :	10	
Swans:								1			
Whistling										198.64	
Trumpeter											
Geese:				10.516.01.02						5	
Canada	100	200	200	200	100	60	50	50	50		
Cackling		100							and particular		
Brant											
White-fronted											
Snow Blue											
Citrar Total Geese	100	200	200	800	100		E0.	50	70		
Ducks:								19,11		60	
Mallard	800	850	400	500	000	000	006	360	850	400	
Exer Unidentified	8,000	2,000	8,000	4,000	8.000	8.000	8.000				
Gadwall	200							808	200		
Baldpate				ASS. STOR						1.1.1.1.1.1.1	
Pintail	Contraction of the								14.1		
Green-winged teal										1.1.1.5	
Blue-winged teal											
Cinnamon teal									30	30	
Shoveler						English Frank					
Wood								1		1.1	
Redhead	109										
Ring-necked											
Canvasback											
Scaup	30	80	80	80	30		80	30		30	
Goldeneye Bufflehead	100	100	100	50	80						
Ruddy	800	800	400	440	300	300	200	200	160		
Other									100		
Total Dacks	0.000										
KOVAL DUCKS	3,280	2,990	8,980	4,100	3,800	8,090	3,890	900	860	710	
Cost:	2,000	2,000	1,000	1,000	1,800	1,000	800	800	800	500	
Grand Totals	6.300	5,180	4.160	6,180	6,530	4,980	41.000	1,450	1.410	1.260	

3 -1750a

Cont. NR-1 (Rev. March 1953)

(A) = Aerial Census

WATERFOWL (Continuation Sheet)

REFUGE	Hank's M	arsh				MON	THS OF	May	TO Augu	st_,	19 65
(7) Total Produ	: :	Week		repo	2) rting	per	iod		(3) Estimated	: () : Produc	ction
(1) Species			: 13 :					18			Estimate
Swans:	: 11	: 12	13 (A) 7/87		: 15	: 16	: 17	: 18 :	days use	: seen	total
Whistling	-		A) 1/01								
Trumpeter		ol ase THE	0907292*	PRIME	a to Victoria y colo	no osere	2002 03	eq prace	0407.0100407		
Geese:		DLOBO, FILS	BLOWN .	1,000 000	Sea Alloas	Die teorope	00 000 0		an antronation	S 208 96	000
Canada	50	80	40	50	10	100 DOS	80	40	9,810	o coletos	80
Cackling			10 A		1.4.1			The state of the second		1. 1. 1. 1. 1.	
Brant		1.4.8 6.8 6.9	100112 00	CTV FTORE	· LONDA ·	0.480	1000000	C. 9200 B.	STATEMENTS AND INC.		
White-fronted	a particular			1. 1. March							
Snow	A CONTRACTOR								and the second		
Blue selectoris	La La Gale de		C · ELECTRON	101,000,0	e estadores						
statur Total Geose	80	60	40	50	10	80	80	40	0,810	5	
Ducks:		1. 1. 18 1. 1.		ter and the	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	a salar	1.1.1	and the			
Mallard	200	200	800	250	300	590	1,500	4,000	79,100	4	30 1
Elmi Unidentified		CARDOLLE 11	Contraction 1	Novila: pa	- Sectors Cars		a te anana	Select St	193,000		and the second
Gadwall		80	85	25	200	200	200	008	16,709		20
Baldpate							1.				
Pintail	19153	at JUAN GIGA	(See Section	3233 49	Contraction 75.3		The Party and	71.01.6	ourse)		
Green-winged teal	-					-			and the second provides		
Blue-winged teal									1.170		
Cinnamon teal Shoveler	30	30	50	50	50	109	100	150	4,480		
Wood				11 A.		50	150	200	2,800		
Redhead			-			1			700	-	
Ring-necked									100		<u> </u>
Canvasback		-		No. 10		and the second second					
Scaup	20	30	25	85	80	40	50	80	4,000		
Goldeneye							00				10
Bufflehead									8,000		+
Ruddy	80	50	80	100	100	800	200	300	29,050		
Other						2					- 80
Total Backs	360	280	850	450	680	1,090	8.300	5.000	270.090	17	130
Coot:	400	800	100	250	360	500	1,000	2,500	110,850	3	30
Grand Totals	810	710	490	780	990	1.610	3.320	7.549	390,950	91	180
					1.5157				And the second sec	No. of Concession, Name	a state where

571 QR	ere lutale sectore				A Second	and Press	n Grogeniere V	TEN .
10	(5) Total Days Use :	(6) * Peak Number : Total	(7) Production	the process of the second	SUMMARY		1	
Swan	8	<u>/ 10 10 </u>	T. MAL	Principal feeding an	reas Throughout	st chamels	, lake i	front
Gees	• •,830 :	40 :	20	and adjacent agrical	itarel grein f	toldo.1		
Duck	s 219,000 :	8,000 :	150	Principal nesting an	reas Islands	and berns	ad jacon	t to
Coot	s <u>110,950</u> :	8,800 :	05	maruh.		2009	R	(90)
TOPA	L 300,900	"Not simulteneously	100	Reported by	J. 0'Heill, T	Aldite Ble	legist	
(2)	Weeks of Reporting Period:	to those species of Estimated average r		tional significance.	4°.V60-	40, 100	2. Al	30
(3)	Estimated Waterfowl Days Use:			ber of days present f				
(4)	Production:	Estimated number of breeding areas. Br	young production	ed based on observati could be made on two of fing no basis in fact	ions and actual or more areas a	counts on aggregating		
(5)	Total Days Use:	A summary of data n	ecorded under	• (3).				
(6)	Peak Number:	Maximum number of w	aterfowl pres	ent on refuge during	any census of	reporting p	period.	
(7)	Total Production:	A summary of data n	ecorded under	• (4).				

Interior Duplicating Section, Washington, D. C. 1953

111-12-19-08 1 × 5,00-09

to strategie

Pd 3-1750 Form NR-(Rev. March 1953)

WATERFOWL

REFUGE Hank's Marsh

MONTHS OF September TO December , 1985

:	(A) Aerial Census (2) Weeks of reporting period											
(1) : Species :	0/5-11		9/10-25	of r 9/29-19/2					10/31-11/6	11/7-13		
Swans:				(A) 9/27	(A) 10/0	(A) 10/18	(A)10/19		1 1			
Whistling												
Trumpeter					See 2					1.1		
Geese:		1				1						
Canada	80	60	100		1.8	110			80	100		
Cackling												
Brant												
White-fronted												
Snow										_		
Blue												
fither Total Geese .		80	100	150		110				100		
Ducks:		-		ALC: NO SERVICE				and the second second				
Mallard	4,000	800	400	200	40	80	and the second se	20				
ther Unidentified							2,100		8,000	5,000		
Gadwall	500	300	200	280	70				100			
Baldpate	50	08	00	100	90							
Pintail	800	0.08	8,000	1,800	810		the local division of	180	300	1.0		
Green-winged teal	180	800	100	0	70		480	0	80	10		
Blue-winged teal				· · · · · · · · · · · · · · · · · · ·								
Cinnamon teal	200	08	10					- Marine				
Shoveler	169	100	1.50		450	70		20 0	500			
Wood												
Redhead		60	40	(0.8	80		709	<u> </u>	20			
Ring-necked												
Canvasback		Contraction of the					A Contraction of the second			1000		
Scaup		50	100	190		10	200		80	10.8		
Goldeneye			-		1		States States	and the second second		1000		
Bufflehead	and the second second							100	100	100		
Ruddy	400	500	20.P	300	130		3,000	ARO	1,200			
Sther C. Merganser						1						
Total Ducks	5,900	2,130	8,510	8,700	1,110	350	15,050	1,060	7,750	8,830		
Coot:	2,560	2,000	1,500	1,000	680	10	1,300	900	800	800		
Grand Totals	8,450	4,180	5,110	3,930	1,940	010	16,300	1,390	8,839	9,430		

3 -1750a

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Cont. 1 1 (Rev. March 1953)

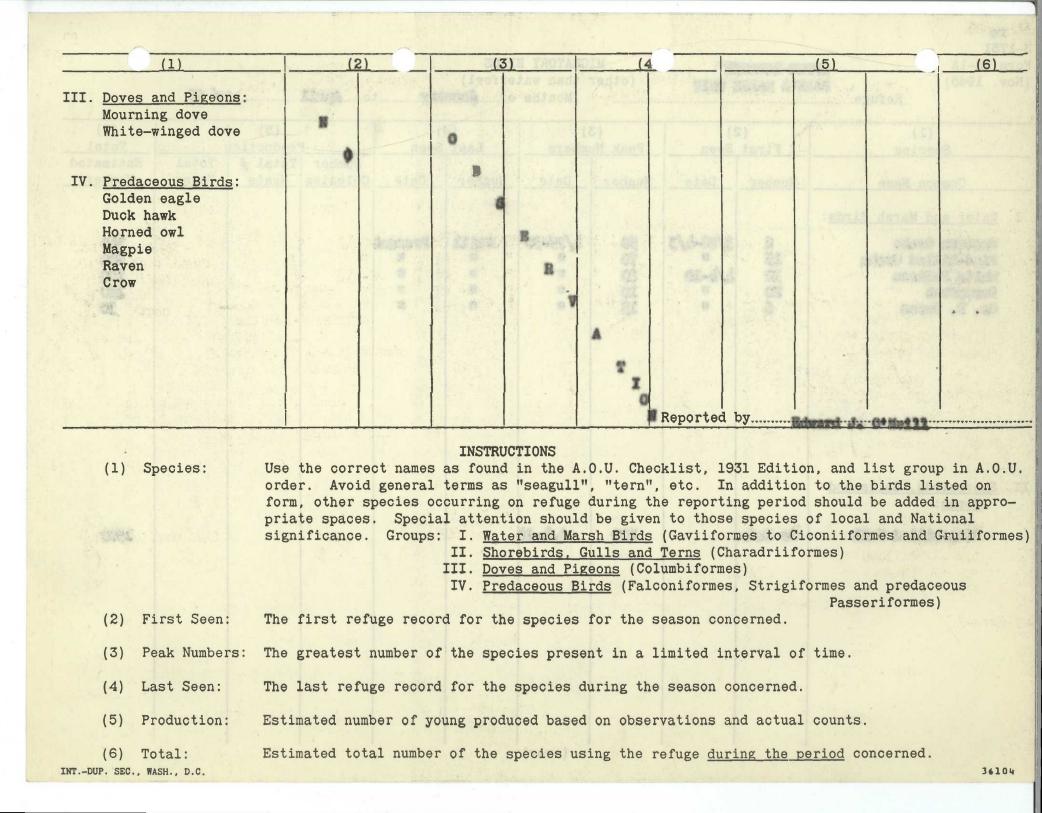
WATERFOWL (Continuation Sheet)

	:(A) Aerie	l Consta Veek	s of 1	(2 ерот) ting	per	i o d		: Estimated	: () : Production: Broods:	
Species	: 11 :	12	13 :	14 :	15 :	16		: 18			total
Swans:			13 : (A)11/30		(A)11/11		1	1	1	1	
Whistling			1.	and and	an (3)		1.000				
Trumpeter		1 /									
Geese:		and the second	HR PLOK	00.00	eucorra p		DAG OL	HOLE TLEY	A ACRIANCE AND A	1 20. 20	-
Canada	100	08			all a second as the				7,140	1	
Cackling				_		1		1	al accurate de s		a a de disea a
Brant						with the		In sector sector			
White-fronted	oto and										
Snow											
Blue	100			20	a Fri CDR				7.10		
Ducks:	300										
Mallard	800	600	700	200		14			66.430		
Blacknidentifie		3,000			netional	1100010	INC.		189,700		
Gadwall	100	50	Hud shar	rg pa ada	ed in an		0.000	Special	11.600	g pe s	CA.610
Baldpate			BD		d on for	other	Decies.	COCHTTINE	8.900	16 200	
Pintail	B.D.C	008	250	200		1. m	-	T	08.000		
Green-winged tea		100	200	50	h 753h. 1			Fisid Man	10,200		
Blue-winged teal											
Cinnamon teal				See Section		-	-		1,809		
Shoveler	500	450	400	209			-	a har bak	87.449		
Wood					Report	99 JT 88		1			
Redhead	20	10							1,250		100
Ring-necked											
Canvasback											
Scaup Goldeneye	100	50			Balan Arris	Del rest	DE PLES		7,850		
Bufflehead	109	80			10		-		70		
Ruddy	3,000	3,500	4,000	1,000	20			+	8,150 130,100		
Other	0,000	0,000	1,000	1,000		her room	TTOR ANT OF		Lev. Lev		
Total Ducks	0.020	6.140	5,000	1.700	30			1	500.070		
			Col 22	- Collar					Control (
Coot:	500	400	1					and a second state	78,120	-	1 1 1 1 1 1 1
Grand Total	9,490	8,620	5,000	1,728	30				804,880		

	(5) Total Days Us	(6) . Se : <u>Peak Number</u> :	(7) Total Production	SUMMARY
wans	r r Sefet Daela	: : : :	N	Principal feeding areas Adjacent harvested private agri.
Jee se	7,140	: 100 :		croplands and marsh proper
Ducks	<u> </u>	8,830	N	Principal nesting areas Entire marsh
oots	78,180	- : = :		
POPALS	504,980 * Not simultar	neously	-790 - 509	Reported by Edward J. O'Neill (Oct. census by Sekora and Clahn)
BING	and need to all			
		INSTRUCTIONS (See	Secs. 7531 through	h 7534, Wildlife Refuges Field Manual)
	pecies:	In addition	to the birds lister	d an farm abhan anasian sacurating an nafura' duadan tha
	Entreptitied -	reporting pe	riod should be adde	d on form, other species occurring on refuge during the ed in appropriate spaces. Special attention should be given national significance.
2) W	eeks of	reporting pe to those spe	cies of local and n	ed in appropriate spaces. Special attention should be given national significance.
2) W	ard Childentified All	reporting pe to those spe	riod should be adde	ed in appropriate spaces. Special attention should be given national significance.
2) Wa Ra 3) Ea	eeks of	reporting pe to those spe : Estimated av	eriod should be adde cies of local and r verage refuge popula	ed in appropriate spaces. Special attention should be given national significance.
2) Wa Ra 3) E: Da	eeks of eporting Period stim ate d Waterf	reporting pe to those spe : Estimated av owl Average week Estimated nu breeding are	riod should be adde cies of local and n verage refuge popula cly populations x nu mber of young produces. Brood counts of	ed in appropriate spaces. Special attention should be given national significance. ations. umber of days present for each species.
2) Wa Ra 3) E: Da 4) P:	eeks of eporting Period stimated Waterf ays Use:	reporting pe to those spe : Estimated av Cowl Average week Estimated nu breeding are breeding hab	riod should be adde cies of local and n verage refuge popula cly populations x nu mber of young produces. Brood counts of	ed in appropriate spaces. Special attention should be given national significance. ations. umber of days present for each species. uced based on observations and actual counts on representative should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.
 2) Wa Ra 3) E: Da 4) P: 5) To 	eeks of eporting Period stimated Waterf ays Use: roduction:	reporting pe to those spe : Estimated av Yowl Average week Estimated nu breeding are breeding hab A summary of	riod should be added recies of local and n rerage refuge popula cly populations x nu mber of young produces. Brood counts a bitat. Estimates has data recorded under	ed in appropriate spaces. Special attention should be given national significance. ations. umber of days present for each species. uced based on observations and actual counts on representativ should be made on two or more areas aggregating 10% of the aving no basis in fact should be omitted.

Interior Duplicating Section, Washington, D. C. 1953 WATERFOWL (Continuation Sheet)

-1751						TEEG					~
orm NR-1A Nov. 1945)	where the line was and the second second				IGRATORY E						
	Refuge					of	0.77 t	toaprell	L19	95/65	
	(1)		2)		3)	(4			(5)	voli liogati	(6)
Sp	Decies	<u> </u>	Seen	Peak Numbers		Last Seen		Productic Number Total #		n Total	Total Estimated
Comm	ion Name	Number	Date	Number	Date	Number	Date	Colonies		Young	Number
Western	lled Grebe Llean 6	2 15 30 20 6	3/28-4/3 4/4-10	50 70 80 10 15	4/25-30	81111 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Present			elgae Siva Leo	100 100 100 150 30
	entry , to		(sported	2	ENOT	OURTERI					
I. <u>Shorebir</u> <u>Terns</u> :		i Edition eddition g period species	eto: In e reportin to those	.U. Check "tern", luring th be given	n the A: seagulit n should n should	ta found lerms as aurring o stianti	it haces general rectes co Specia	he corre Avoid Cher 2 Spaces	t Use orde form pria	(199109)	8. (L)
2 × 11 8006	diled Gull (1996) 1999)	No Info	do) <u>serie</u> indiforae entformes		0	II. Shor III. Dave IV. Fred	Croops :	eonsoil.	nglê		1500
			noo noon ni beiin			and the second	a state of the second			icet Seen ak Norber	
		berned	о поезбе	ent gath	i orioda	for the	biosot by		The	st Seen:	4 (14)
		Leutos b	ie unoliny	antida do	besad bei	uperg sa	60 10 TH		iline .	dal tanbo	4 (3)
		an the res	tint entit	n eat an	(over)	of the s	Todmun 12	and bedr	storia	a site a	r (e)



pd 1751				X						
orm NR-1A	a service of the	2	And the second sec	IGRATORY		A-4	(18)		HA! (1)	1
Nov. 1945)	The late a			r than wa			man there are		+ ==	
Refuge		IRT.BIA		Months	of		toAuguet	۶۲۶	0.9.	
(1)	1 12		1	77.)	1 /	4	1 0	(5)	entolo su	(0)
(1)	(2			3)		4)		(5)	(6)	
Species	First	Seen	Peak N	lumbers	Last	Seen		Production		Total
				DI	N	Dete	Number	Total #	Total	Estimated
Common Name	Number	Date	Number	Date	Number	Date	<u>Colonies</u>	Nests	Young	Number
T Water and Manch Dinda.									Bigge	
I. Water and Marsh Birds:					1 1	1111				Duck n
Barod grobe	60	5/80	1.4	-	Still	Present		let. 80		800
Westarn grobe	Previoes	period	80	5/30	1122-201		1	80	50	800
Pied-billed grobe			10		1 10 200			list. 30		100
White pelican		- /00	100	7/25						180
Double-erected cormore Great-blue heren		5/30	100	5/80		14-13-2	Colored States			150
	Protina 340	period 5/80	840	0/80			1	880	800	600
Black-crowned Matheren American bittern					1.10	1.13.19				20
			Street,							
	10 m			1					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
ist und , inter	Treese Styc	berrogel		5						
and the second		State of a	1.1.1.1			along the second				
	a la constration			1 0183	INSTRUCT		123 18 7 9 2 1	1. 1. 1. 1.		
	altiba fl	(11st) 19	oedq	C.A odd a	bauet e	eegan t	smos edi	SAU 2	:seiber	
I. Shorebirds, Gulls and	additton.	ato In	"toros"	. IIdaaan	GA BATO	Latenal	blovA .	obto		
Terns:	poyred at	dirogen (di yaira	retage	a gainn	00 20100	other a	rorm		
Ring-billed gall	Previous	period	100	6/30	Still	Present	adraga o	alig (1,000
California mil	150	8/80	80				o tott.	asla		800
Forestar's term	10	dol antes	10	D. e stals	TPC . Date		D			100
Caepian term		engendda	1001	and more	A REAL PROVIDENT	•				80
Bleck tern	80	ale a de la de	80	a states	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					800
	Section Sugar	1.1.1.1.1.1.1	and the second s				1. N. M. M. M.	Survive of the	1.15 2 m al	
	ernou.	वावेव ववकड	0.003120	- Herboda	000 000 1	100001 030	The quart	842	tet Soch	
			1000		and the second	the parts of	103 1 3	Ang shall		
	TO TRAIN	ni perin	2 2 32.3	nesera se	the spice	To Tachy	e spenioard	CONT SE	Indenti All	
							i de	a contra	Mar and	
	.09010300	Besson P	ent gain	P Bilosq	a out doi	proper #	3191 JSB	entr	10005-20	
	1				1 to and					
		E SECTAR	TOPERO IIO	Destro pa	unpose 24	19X. 34. 32	ada keta		oduota qu.	
	1.									

				Tarte 1						
(1)	(2)	(3) (4	(5)	(6)						
III. <u>Doves and Pigeons</u> : Mourning dove White-winged dove		(a)	Refut o	(OPVL . 79H)						
IV. <u>Predaceous Birds</u> : Golden eagle Duck hawk Horned owl Magpie Raven Crow	Residents		Name Contract Onte Contract On	B B C C C C C C C C C C C C C						
			Reported by Rdward J. O'Neill, B	State Stat						
(1) Species:	(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 appro- priate spaces. Special attention should be given to those species of local and National significance. Groups: I. <u>Water and Marsh Birds</u> (Gaviiformes to Ciconiiformes and Gruiiformes) II. <u>Shorebirds, Gulls and Terns</u> (Charadriiformes)									
(2) First Seen:	The first refuge rec	ord for the species for the s	Passeriform season concerned.							
(3) Peak Numbers:	The greatest number	of the species present in a 3	limited interval of time.	1. 4. 1. 1.						
(4) Last Seen:	The last refuge reco	rd for the species during the	e season concerned.	Y. K. Pres						
(5) Production:	Estimated number of	young produced based on obset	rvations and actual counts.							
(6) Total: INTDUP. SEC., WASH., D.C.	Estimated total numb	er of the species using the :	refuge <u>during the period</u> concerne	d. 36104						

				IGRATORY	and the second				(1)		
ov. 1945)	Hank's Marsh		(othe	r than wa	terfowl) of Septem	her	to Decembe		6 65		
Refuge				MONTHS	01		ιο				
(1)	(2	:)	(3)	(4	4)		(5)	vinged dov	(6)	
Species	First	Seen	Peak N	umbers	Last	Seen	Production			Total	
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimate Number	
		Date	Number	Date		Date	00101105	10505			
. Water and Marsh Bir	ds:						1		at yo		
Eared grebe	Previous	Period	No	Becord	No. Res	1			Swo	300	
Western grebe	H									500	
Pied-billed grobe										100	
White policam			20	Sept.		. Area id ar	the different		0.5%	100	
Demble-created Co	rmorant "		10	Record		12/5-18				50 30	
Great-blue Horon Black-erowned Ht.					In Ba	12/0-18				100	
American Bittern						n				10	
TEX-	by Editated a.										
					1						
				ETOMS -	INSTRUC						
LO A ni quorg Jail 6		ei tati	U. Cheo	noms	INSTRUC	aoman to	arrab eiti	-sell	sectes:		
. Shorebirds, Gulls a		alist. 19 atc. 10).U. Chec "tern".	to the A.	INSTRUC as found being as	ot cames general	the during	obtó	:eeloe;		
. <u>Shorebirds</u> , <u>Gulls a</u> <u>Terns</u> :		alist, 19 stc. In toporti topores).U. Cheo "ters" hring th	inges between between terment between	INSTRUC as found bergs as bergs as	CO Esios	the darra e. Avoid other a		;eotes;	20	
. <u>Shorebirds, Gulls a</u> <u>Terns</u> : Common spipe		etc. 19 etc. 10 to report to choose	1.1. Cheo "tern". hring th bo sayes		Ro Rec.	benno to Longago December	the dorm a Avoid othes a te epaces (floance	obró arol	;eotes:	20	
. <u>Shorebirds, Gulls a</u> <u>Terns</u> : Common snipe Ring-billed gall		etc. 19 etc. 16 fo. bose fo. bose fo. bose fo. 160	b.U. Cheo "tern". bo se to bo se to bla se to	inges in the A record record an a bit a bit a bit a bit a bit a bit a bit a bit a bit bit bit bit bit bit bit bit bit bit	No Rec.	CO Esios	the dorne a. Avoid other a te spaces (floance.	ordo fora pria		20 1,000 400	
. <u>Shorebirds, Gulls a</u> <u>Terns</u> : Common spipe			1.U Cheo "tern". bering th be se sa biels so biels sol			CO Esios	the dorm of Avoid of Avoid the spaces (flicance)	ordo fora pria	restos	1,000	
. <u>Shorebirds, Gulls a</u> <u>Terns</u> : Common snipe Ring-billed gall Californin gall Borester's Tern Caspion Tern			A.U. Cheo "tern". hering th h.D.e. his et his br>his his et his et his et h			December "	the dorna co Avoid co Ather a co apaces (floance	ordo fora pria	:eotos:	1,000 400 209 80	
. <u>Shorebirds, Gulls a</u> <u>Terns</u> : Common snipe Ring-billed sll California sall Forester's Tern			but Cheo terrar be terrar be terrar terrar be terrar			December "	the dorna co Avoid other a thespaces (flespace)	ordo fora pria		1,000 400 209	
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III. Doves and Pigeons:	to Terroriter	in a start of the start of the	Months			densil at	Ration Barn	(ores reen)
Mourning dove	No Observation							10
White-winged dove	(5)	(4)	(8)			(2)	1 1 1)
	touhen9 01	Dast, Sp	Tine and	Peek	191	First S	peto	M 8.
betantia Lator	Istal Istal							
IV. <u>Predaceous Birds</u> : Golden eagle	No Observations			1 SCHON	03.00	100000	emsli n	1
Duck hawk	NO ODSELAS CTOR		1.200		1.4.1	1336	Nareh Strebt -	L Mater and
Horned owl		. Prometer						a strange in
Magpie		4 . 0	1220091	1 1 AL	Jettel	Burg Street	9.29%	and the second s
Raven		and the second of the	1.00	25-	13			
Crow Bald Eagle	No Observations	35 M 1		08	1.0.1	- 19	istrait (+	11.3
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100			10	-			ittee liegam	
		9		50	10		and the second	
					1.20			
					Reported	by Edward	J. 0'Mill	
						L.		and a starting
(1) Chainer	Mar the servest new	INSTRUCT		U Chaol	hligt l	OZI Editio	n and ligt and	un in A O U
(1) Species:	Use the correct nam order. Avoid genera							
	form, other species							
	priate spaces. Spe	cial attentio	n should b	e given	to thos	e species	of local and Na	tional
200,5	significance. Group							l Gruiiformes)
2000,1 0000 2000 2000 2000		II. <u>Shore</u> III. <u>Doves</u>				haradriifo	rmes)	
CTAG	1920	IV. Preda	ceous Bird	s (Falco	oniforme	s. Strigif	ormes and preda	ceous
000		10.000	<u></u>				Passeriforme	
(2) First Seen:	The first refuge real	cord for the	species fo	r the se	eason com	ncerned.	and a second	
	m						4.5	
(3) Peak Numbers:	The greatest number	of the speci	es present	in a 1:	imited i	nterval of	time.	
(4) Last Seen:	The last refuge reco	ord for the s	pecies dur	ing the	season	concerned.		
(5) Production:	Estimated number of	young produc	ed based o	n observ	vations :	and actual	counts.	
(6) Total:	Estimated total num	per of the sp	ecies usin	g the re	efuge <u>du</u> :	ring the p	eriod concerned	INTERIORPORTLAND, OREGON

UNITED STATES

FORM NR-18 DEPARTMENT OF THE INTERIOR

3-1750b

(Rev. Nov. 1957) FISH AND WILDLIFE SERVICE BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Reported by E	J. O'Net	n	Title	Wildlife R	igt. Biologist	
(1) Area or Unit Designation	(2 Habi	tat	practic	(3) Use-days	(4) Breeding Population	(5) Production
Designation	Туре	Acreage		Continue recommendation of the Continue of the	Constantion of the Constant of the Constant South State	Constanting of the local data and the local data an
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itat typer of	Upland	o co bia a	Geese	15,120	10	20
Finger Laks	Marsh	900	Swans	116,830	1089	
be submitted	Water	1.050	Coots	542,430	50 260	30 180
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	Crops		Ducks	410,480	200	130
	Upland	Canadiana (San Canadiana Canadiana Canadiana Canadiana Canadiana Canadiana Canadiana Canadiana Canadiana Canadi	Geese	15,120	10	20
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	Water	entre a Boo	Coots	die ffeld of	oltrea	
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	Upland Marsh		Geese	000000000000000000000000000000000000000		
	Water	-	Swans Coots		Cathorne and a second and a second and a second	Contraction of the second second
	Total	(active production descent)	Total			
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	Crops		Ducks	but lo vro		
	Upland	CELECTRONO CHINGING HONO	Geese	Had to the second second second second	d admanasademandeman	Conference on the Conference on the
light age.		r voune r	Swans	Ladot beta	MATER ENG.	5) Product
	Water		Coots			
	Total	Cardina Cardin	Total			Contrast of the Armonia Section Contrast

* January-August only (First Report)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat:

Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3)	Use-days:	Use-days is computed by multiplying weekly waterfowl
		population figures by seven, and should agree with
		information reported on Form NR-1.

- (4) Breeding Population: An estimate of the total b
 - An estimate of the total breeding population of each category of birds for each area or unit.

* January-Auguah anly (First Haport)

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

WATERFOWL HUNTER KILL SURV

pd 3-1750c Form NR-10 (Sept. 1>...)

Year 196 5

(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	Waterfowl	(4 Species and		of Each	Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8 Est. of Hu	No.	(9) Est. Total Kill
	uld be on to ar care ard (61),	ry: Mal	Prodomine Groom- Shovel	tely vinged Teal or observed or observed observe	of re day's each a sent go a spent	percent and in 25 perc tive dat munters	m of 25 complete he week resented resented resented	a minim ho have day of heet. lect re r of how	nring each affort ange iken to col total numbe owl species	goal is a only f lected d hunter ild be t ord the	col the g sho Rec	50 (E)	509
				down but not		,bəg	gsd Lwo'	reter f vater:	(1). 1 nombers o	ged Teal and tota	vin Rec Rec	(6)	
	lott ng	wek, in		the refuge o olumn 8 x Co olumn 2 x Co				a 2).	cked (Colum	edo siej	auri .		
	03-8450					(over)		Report	ni by: Pal Pie Uot	aor C. M 1d obsor 20 Willi	watie	ne by ah	

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INSTRUCTIONS

- (1) The first week of hunting begins with opening day and ends at the close of hunting 6 days later. Successive weeks follow the same pattern.
- (2) The goal is to survey a minimum of 25 percent of refuge hunters each week and to record data only from those who have completed their day's hunting. This information should be collected during each day of the week and in each area hunted in relative proportion to the hunter effort expended. When the 25 percent goal cannot be achieved, particular care should be taken to collect representative data.
- (3) Record the total number of hours the hunters spent hunting on the refuge.
- (4) List waterfowl species in decreasing order of numbers bagged. Sample entry: Mallard (61), Pintail (36), Redhead (16), Gadwall (11), Widgeon (6), Coot (4), Canada Goose (3), Greenwinged Teal (1).
- (5) Record total numbers of waterfowl bagged.
- (6) Record total numbers of waterfowl reported knocked down but not recovered.
- (7) Total of Columns 5 and 6.
- (8) Estimate the total number of hunters who hunted on the refuge during the week, including hunters checked (Column 2).
- (9) Kill sample projected to 100 percent. Column 9 = $\frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$.

Rearbed by: Italian C. Follors analdervesto blan.

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Form NP ? (April 946)	Refuge	unk's Marel	0		UPLA	ND GAME BIRD		Septe	mber	to De	camber, 19 6	5
	and her party											
(1) (2) Species Density Common Name Cover types, total acreage of habitat Bird		H	(3 Your Produc	ng	(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks		
		total pe	res er	Number broods obs'v'd. Estimated Total		Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.	
g-necked Pheasan	marsh & t (levee)	res	land bed hmdrs la are	sampl	lodm gl¥ evij	pes should t ch as to obs reverting ag dard type sy e possible. eas should t	da Star where the c	used used	E	of cover c in or mation swang, upli grass prain No. 7 shou observation size of sa		
eđru	nd actual co	rvationa a	obset	noqu	beas					Estimated a in represen	YOUNG PRODUCED:	(2)
110 <i>B</i> -	Include da	ants, etc.	0 16833	tey, I	tur					This colum other speci	SEX RATIO:	(\$)
	ort period.	ng the rep	durts	bevor	y rea	eách categor	nt :	ledmu	: Lođ	Indicate t	REMOVALS:	(5)
	lod. This m wing certai										IJATOT	(9)
	in survey.					stermine pop nformation n					REMARKS :	(7)

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

Reported by: Edward J. O'Neill

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INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

. 19 08

(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	
Pertinent information not	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	

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.

lagarded by: Essand J. O'Netll

denni e mail

(1) Spec ies	(2) Density	(3) Young Froduced	ung Removals			(5) Losses			Int	(6) troductions	(7) Estim Total B Fogula	(8) Sex Fatio		
	Cover types, total Acreage of Habitat	Humber	Bunting	For Re- stocking	Sold	Jor Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
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	and the second	ber ao be		izini ng pera	A D A	reder 7 To 10 B	10 1 10 10 10 10 10 10 10 10 10 10 10 10	3.A. 631	liel Dies	6 b) 2 b) 8 6)	ttens aker D: Estime Indica	io BOORY DIROG	са) (* 16) (* 16)	
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Reported by Edward J. O'Meill

INSTRUCTIONS

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Service of the service of the service of

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisians white-tailed deer.
- (2) DENSITY: 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 total number of young produced on refuge.

Seconted by Libraria ad batrough

- (4) REMCVALS: Indicate total number in each category removed during the year.
- (5) LCSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of <u>Dec. 31</u>.
- (8) SEX RATIC: Indicate the percentage of males and females of each species as determined from field observations or through removals.

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(June	3-1754 (UPPER F'AMATE Form NR- (June 1945) Refuge HATE'S MARSH UN (1) (2) Species Density				to of to on	ester Pole	11 ep icto ep	1 20	no in allo	i (Incl More Marene Marene	HANNAH 191 - Doc	SKALL STALL STALLS		-84 210	(5)	
	to store to store to Morth to Animals	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	2.1	Fredator Control	upe V	For Re- search	Shar	e Trap e Trap subers		Total Refuge Furs Shipped	Furs Donated	Fure Destroyed	Total Popula- tion	
Musicret	informer o the tted.	1191 scres catteil	Examples of	pe 9me 9me	iotei late ct ti	tt by a cov	be on essed sced esci	vas ozpi bzg tat	No inf			None	P4		Est. 1000	
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otter	stistics sob- solution should be add lo Of the	tandard type symbols and where possible. a and counts on repre- f sample ares or area y removed since April fuge by Service Frada- under headingslisted.	t of blut offavres sate bi ogetas i r eit a	de de s b oes te	laut: veu i tebi lat v	tes on a stho etho er u g an	s sed vey s marks mak lodir	total	ons year	hIIV JJIm Qana Jhal Jhal Verq			JAYO	ar (10	
	an by Servic e 65 usprine er agencies	Predator Animal Hunte	t numbe to mari equit s donated be	ara ppei	y edi	Jal	I eru	ped 1 daun lato sd ci		On si Indi pere	RUE 1	D HOI	P031	10 -1		
	REMARKS:	# Trapping permit und	er U.S. B	brea	au of	Rec	lanati									

INSTRUCTIONS

lear ending April 30, 1965

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STRATT A DREEDER

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES:

(2) DENSITY:

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Use correct common name. Example: Striped skunk, spotted skunk, shorttailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

Applies particularly to those species considered in removal programs. 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, bottom land 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) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.
- (4) DISPOSITION OF TUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

32715

K+40000B

STUGE

3.1755 Form NR-, DISEASI	E
Refuge March	Tear <u>19.65</u>
Botulism	Lead Poisoning or other Disease
Period of outbreak Min	Kind of disease None motod
Period of heaviest losses	Species affected
Losses: (a) Waterfowl (b) Shorebirds (c) Other Actual Count Estimated 	Number Affected Actual Count Estimated
Number Hospitalized No. Recovered % Recovered	Number Recovered
(a) Waterfowl (b) Shorebirds (c) Other	Number lost Source of infection
Areas affected (location and approximate acreage)	Water conditions
Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.	Food conditions
Condition of vegetation and invertebrate life	Remarks
Remarks	Reported by: Edward J. O'Heill, Wildlife Biologist
	INTDUP., D.C 53818-

PUBLIC RELATIONS

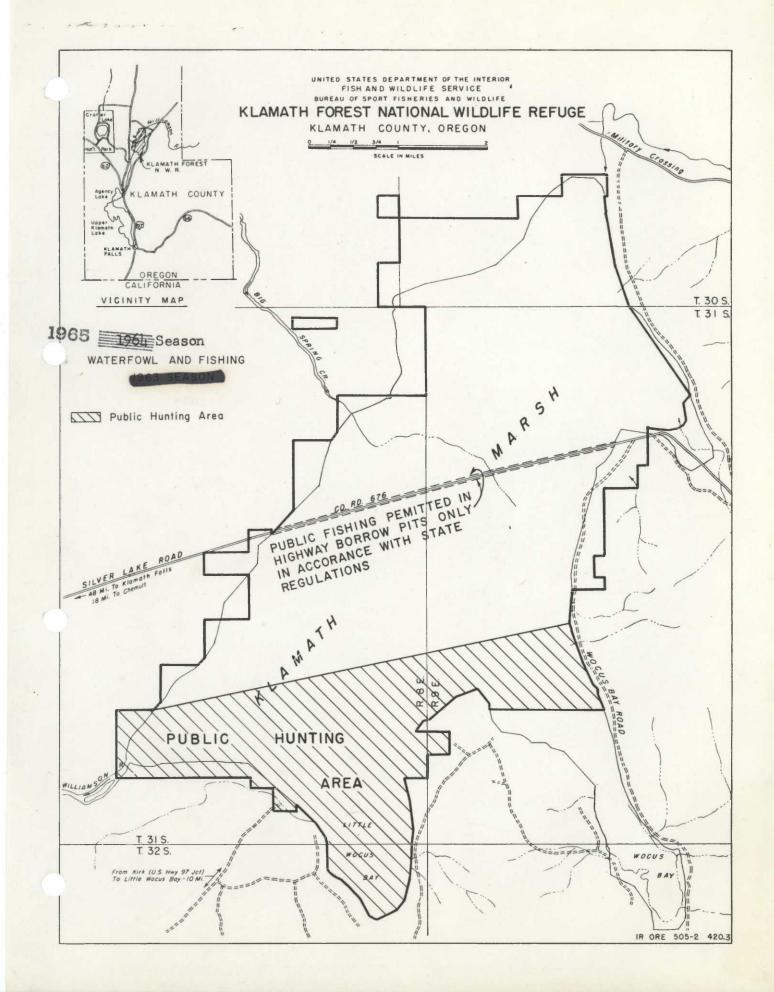
1000 3 Exuption - Incompare provide Instructions on Reverse Side) - Deserverse Side

Refuge Kank's Marsh Calendar Year 1965									
1. Visits a. Hunting 250 b. Fishing 50	c. Miscellaneous 50 d. TOTAL VISITS 350								
la. Hunting (on refuge lands)	2. Refuge Participation (groups)								
TYPEHUNTERSACRESMANAGED BYWaterfowl2501,050U57WS	Refer to Tule Leke Section TYPE OF ORGANIZATION NO. OF NUMBER IN GROUPS NO. Of GROUPS NUMBER IN GROUPS								
Upland Game	Sportsmen Clubs								
Big Game	Bird and Garden Clubs								
Otherst - INCLUDE CLON' OX' and stallar parents	Schools								
Number of permanent blinds	Service Clubs surger of restandie of pringer								
Man-days of bow hunting included above	Youth Groups								
Estimated man-days of hunting on lands adjacent to	Professional-Scientific								
refuge	eler Religious Groups) (or ber seuRer ber car) ra								
lb. Fishing (area open to fishing on refuge lands)	State or Federal Govt.								
TYPE OF AREA ACRES MILES	o Other Designed Const miles and so to								
Ponds or Lakes	3. Other Activities								
Streams and Shores	TYPE NUMBER TYPE NUMBER Press Releases Radio Presentations Releases								
lc. Miscellaneous Visits Recreation 40 Official 10	Newspapers . (P.R.'s sent to) Exhibits								
Economic Use Industrial	TV Presentations Est. Exhibit Viewers								

3-1756 (Rev. 4/63)

	Economic Use Industrial	INSTRUCTIONS	Bat, Exhibit Viewers	
rtam l.	HART AND THE OWNER AND ADDRESS OF THE OWNER	(P.R. 15 gent to)		
			Exhibits	
b. Fish	"Visit" - definition. Any person who is o the purpose of: hunting, fishing, bird-wa visit, or similar interest. INCLUDE - tho highway because of an interest in the area not directly related to the refuge, person of traffic, and those boating on navigable observe wildlife on the refuge. <u>Computing visits</u> . Where actual counts are end samples varied by season or weather. used when accurate figures are not availab boats based on range of usage. Count a car <u>Acres</u> - of refuge open for each type of hun <u>Managed hunts</u> require check in and out of 1 <u>Other</u> - INCLUDE crow, fox, and similar hun	tching, recreation, business or se who stop within the refuge wh . EXCLUDE - persons engaged in s using refuge as most direct ro rivers or the Intercoastal Cana impractical, "sampling" is used A conversion factor of 3.5 (of p le. Each refuge will develop a mper once for each 24-hour perio nting. hunters, issuance of permits, or	economic use, official ile traveling on a public oil or other industry ute or principal avenue 1, unless they stop to with midweek and week- assengers per car) is conversion factor for d or fraction thereof.	BER
	Lands adjacent to refuge. Normally consid			
	Lands adjacent to refuge. Normally consid sampling procedures cover a wider area. F	or big game hunting, the distanc		
tem lb:		or big game hunting, the distanc	e may be greater. Information on "shores"	ROUPS
tem lc:	sampling procedures cover a wider area. F Acres of streams open to fishing, if pract	or big game hunting, the distanc ical; otherwise just miles open. g wildlife, picnicking, swimming	e may be greater. Information on "shores" boating, camping, visitor	
tem lc:	sampling procedures cover a wider area.Acres of streams open to fishing, if practis primarily for coastal fishing.Recreation.INCLUDE photography, observincenter use, tours, etc.TOTAL Recreation,Industrial.INCLUDE persons engaged in infrom Item 1.	or big game hunting, the distanc ical; otherwise just miles open. g wildlife, picnicking, swimming Official, and Economic Use visi	e may be greater. Information on "shores" , boating, camping, visitor ts under Item 1.	





Klamath Forest Refuge

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Klamath Forest National Wildlife Refuge 1965

I GENERAL *

A. Weather Conditions

Weather records were obtained from the U.S. Weather Bureau Station located at Chemult, 20 miles north of the refuge.

		Precipitation		Tempe	rature	
	<u>Snowfall</u>	Month	Normal ^{1/}	Maximum	<u>Minimum</u>	
January	49	6.06	3.69	50	2	
February	6	. 64	3.88	56	7	
March	Trace	.10	2.46	61	14	
April	11	2.58	1.35	72	19	
May	1	.21	1.54	78	15	
June	0	.93	1.56	83	23	
July	0	.36	.61	93	27	
August	0	1.50	.49	90	25	
September	: 0	.00	.65	82	14	
October	1	.71	2.14	82	14	
November	21	4.70	3.81	65	2	
December	44	3.40	5.20	51	-7	
			·····			
TOTALS	122	21.19	27.38 Ex	tremes 93	-7	

1/ Sixteen year average, "Climatic Summary of the United States -Supplement for 1931 through 1952"

Monthly precipitation averages during 1965 varied greatly from the normal. Total precipitation was far below normal; however, aboveaverage periods were sufficiently spaced for maintaining high water levels throughout the year.

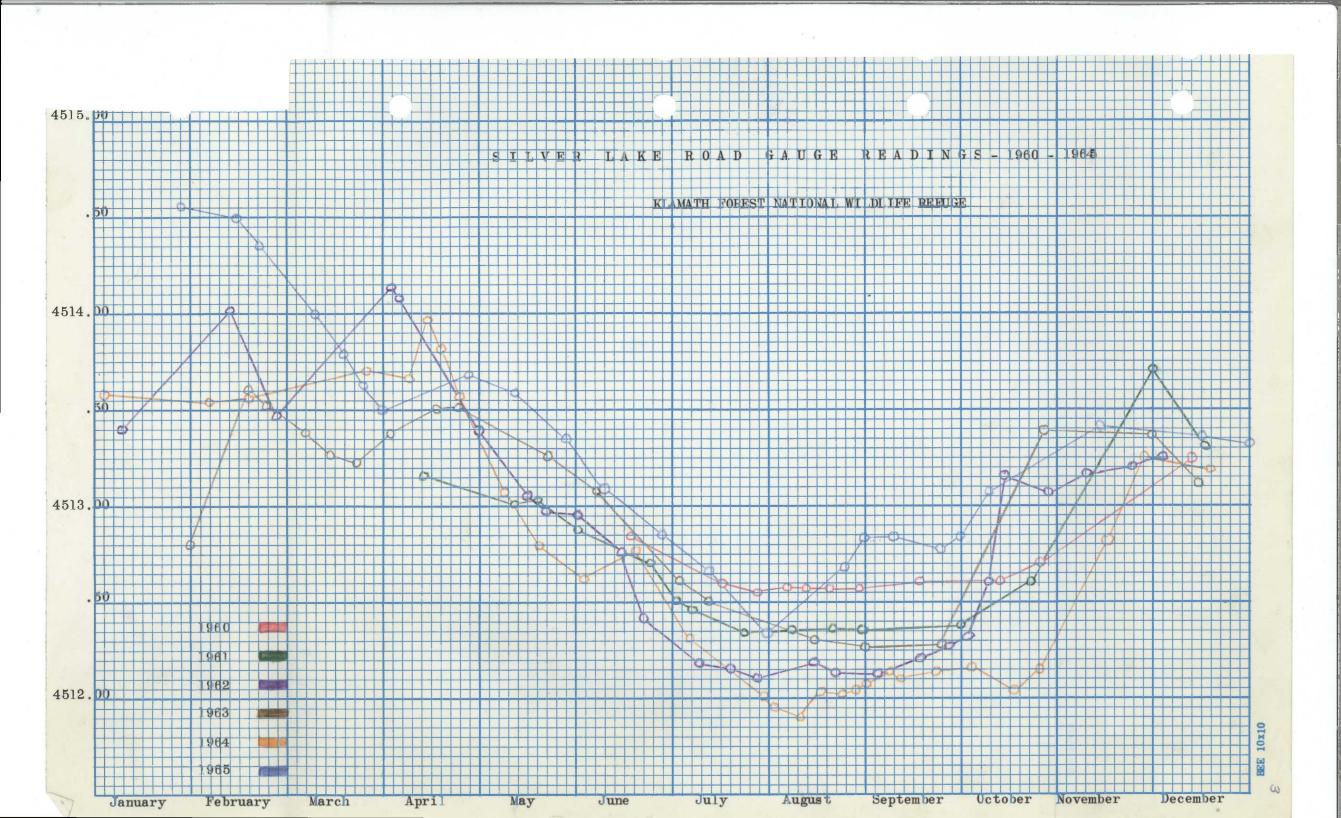
*Sekora

Year/Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Normal <u>2</u> /	3.69	3.88	2.46	1.35	1.54	1.56	.61	.49	.65	2.14	3.81	5.20	27.38
1965	6.06	.64	.10	2,58	.21	.93	.36	1.50	.00	.71	4.70	3.40	21.19
1964	6.27	.33	1.64	.33	.14	1.59	. 58	.13	.11	.48	3.99	14.71	30.30
1963	1.60	3.52	2.13	2.92	2.11	.79	.36	.35	.67	1.75	3,42	2.05	22.67
1962	1.09	3.27	2,91	.84	.74	.06	.07	1.43	1.16	4.96	2.88	2.81	22.22
1961	1.51	4.88	3.91	. 57	1.19	1.36	.00	1.00	.34	2.02	4.58	3.32	24.38
1960	3.30	4.27	4.67	.81	2.56	Trace	.95	.12	.44	1.15	4.98	2.52	25.77
1959	4.50	2.73	1.39	.24	.40	.62	.45	.86	.86	1.10	.56	1.22	14.93
1958	6.01	5,93	1.53	1.49	.76	4.41	.51	.60	.70	.76	2.37	2.64	27.71
1957	3.61	3.09	4.01	.83	1.30	.26	.23	.06	3.93	1.45	2.11	5.34	26.22
1956	8.18	3.77	1.33	.77	1.87	1.35	2.26	.31	. 57	3.90	.90	2.68	27.89

TEN YEAR PRECIPITATION SUMMARY 1956 - 1965 1/

1/ All data is from the United States Weather Bureau in Chemult, Oregon, 20 miles north of the refuge.

2/ Sixteen-year average, "Climatic Summary of the United States - Supplement for 1931 through 1952".



B. Habitat Conditions

1. Water

There is no control of water entering, within, or leaving the refuge confines. This results in either a feast or famine, or more appropriately, a flood or drought. The past two years are prime examples of this (see graph). The year 1964 experienced the lowest water levels since refuge establishment with all but 110 acres completely dry at one time. Due to the storms of December 1964 and January 1965, record high water levels were experienced throughout much of 1965. These same storms resulted in substantial damage to the Silver Lake, Military, and Kirk Roads. These same high levels, combined with wind and ice, removed nearly six miles of refuge boundary fence and damaged another four and one-half and substantially reduced the muskrat population by either drowning or eliminating their shelter.

These record high water levels continued throughout 1965 except for two short periods, latter March and early April, latter July and early August. Above-average precipitation during January, April, August and November helped to maintain the record highs.

With an abundant water supply throughout the Williamson River watershed there was minimum upstream diversions. In 1964 this river, the refuge's main water source, was completely diverted for pasture irrigation.

2. Food and Cover

Widespread waterfowl use was made of the marsh throughout the year due to high water levels. This use extended off the refuge particularly in the remnant marsh north of the Military Crossing.

By March 17 the marsh was free of ice. The abundant moisture and warm early spring temperatures stimulated an unusual early growth of Nebraska sedge (<u>Carex nebraskensis</u>). By March 24 this sedge averaged four inches in height and provided much forage for Canada geese on the refuge's eastern and western edges. Much of the wocus (<u>Nuphar</u> <u>polysepalum</u>) had leafed out by April 27. By May 27 a blue-green algae (<u>microcystis sp</u>.) was present in the northern section and off Wilson Point. Because of the constant fresh water inflow and the resultant circulation, algae growth was at a minimum throughout the summer. By mid-July buttercup (<u>Ranunculus aquatilis</u>) encouraged by the high water levels, was abundant in the southwest corner (Wildlife Unit 4) and was greatly utilized by duck broods. Duckweed (<u>Lemna minor</u>) experienced a good production year in the northwest corner. The fluctuation of water in early spring and mid-summer stimulated heavy, dense growths of emergents, particularly cattail. The amount of vegetative matter grown on the refuge was the greatest for the past three summers. 5

The high water levels held grazing to a minimum in the sedge community. This resulted in the overgrazing of some of the uplands. To get desired grazing use in the sedge meadows, it appears that we have to sacrifice our few upland areas. Fencing these areas is not presently feasible. Most of this year's sedge growth remains.

II WILDLIFE *

A. Migratory Birds

Waterfowl use reflected improved marsh conditions with total use up 61 percent from 1964, but down 6 percent from the five-year average.

Canada goose, duck and coot production increased over 1964 figures by 50 percent, 30 percent, and 200 percent respectively, and differed from a five-year average by +20 percent, -14 percent, and +30 percent respectively. Most notable among the ducks was redhead, up 125 percent from 1964, up 79 percent from the five-year average.

Production on adjacent lands (Big Wocus Bay and the northwest refuge boundary) is estimated to be 150 Canada geese, 650 ducks (mostly redhead, ruddy ducks and cinnamon teal), and 350 coots.

Waterfowl Production**

		Geese	Ducks	Coots	Total
	1961	200	1,670	300	2,170
	1962	250	1,870	600	2,720
	1963	300	2,490	600	3,390
	1964	200	1,150	200	1,550
	1965	300	1,485	600	2,385
Five-year					
Average		250	1,733	460	2,443

**These figures do not include production on the Big Wocus Bay and lands adjacent to the northwest boundary.

The red-necked grebe again nested on the marsh but in greater numbers. Production is estimated to be six young from three nests. It is hoped this is the start of a permanent nesting population. The long-billed curlew was notably absent this year. Normally, curlew observations are quite common in the pastures and hay meadows.

6

Waterfowl use extended well into November until colder temperatures covered the area with ice. Canada geese, toughing the weather, remained through the year's end staying mostly near the Silver Lake Road bridge and Skellock Draw.

C. Big Game Animals

Mule deer use of the refuge was substantially down from last year because of abundant water throughout the watershed, and reduction of marsh habitat by high water levels. First observations were of fifteen on the east boundary March 18, unusually early. Sightings were common by mid-April.

A tagging program by the Oregon State Game Commission has established that the greater percentage of the population summering in the marsh area are from the Silver Lake winter range. Other herds using the area are from the Fort Rock herd and the interstate deer herd. A significant 1964-65 winter loss was experienced in the Silver Lake winter range and was reflected in a reduced yearling kill in 1965. Hunter numbers were slightly down this year even with the first antlerless season since 1960. Fawn production was down this past spring. Even with a normal carry over of adults, a low carry over of yearlings and young of the year forecast a poor year for 1966.

D. Fur Animals, Predators, Rodents and other Mammals

The muskrat population has suffered greatly from the water fluctuations of the past two years. Most of their nests were inundated by the December 1964 and January 1965 water levels resulting in their drowning or having to move from this area. Recovery was slow on the north half and non-existent on the south half of the marsh.

Beaver activity was noted in the northwest corner of Big Wocus Bay where several aspens had been cut down.

Mink sign was evident in February and March.

Raccoon appeared to be more abundant this year. Three were seen while making muskrat transects. All three were suspiciously close to Canada goose nests. William Nuess, Assistant Refuge Manager, reports a long-tailed weasel observation on the east boundary of the refuge. This is a first report.

Coyote use was substantially down because of high water levels. The period of greatest use was January-February when an ice cover was present and muskrat lodges were accessible. During the summer months, most observations were made on Lenz Creek, the hay unit, and the northwest corner. Their harmonizing was heard frequently this year on the ridge behind headquarter's cabin.

Very little use is made of the marsh by bobcat, although one was seen in the Little Wocus Bay area May 27.

John Annear, Refuge Manager Trainee, observed a mountain lion at the junction of the Kirk Road and the Williamson River August 30.

E. Hawks, Eagles, Owls, Crows, Ravens and Magpies

Bald and golden eagle observations were common through March reaching peak numbers of 33 and 10 respectively the week of March 1 - 6. This concentration is probably due to the abundance of muskrats (dead and alive) on the ice surface.

Bald eagles were present throughout the spring and summer months, notably absent in the fall months. A summer peak of four was noted July 14. Golden eagle were unusually absent in the spring and summer months.

No unusual hawk concentrations were noted this period. Swainson's hawk, frequently observed in the spring and fall months, was notably absent with only one observation recorded.

Horned owls, magpies, ravens were present throughout the year.

F. Other Birds

New additions to the refuge birdlist include: one Townsend warbler, observed April 27-29; and a white-headed woodpecker, June 6.

G. Fish

Fishing use increased 50 percent over last year with the improved water levels. Success was high with the bullhead averaging five to nine inches in length.

H. Reptiles

<u>Rana pipens</u> were quite common through the spring, summer, and fall months. Garter snakes were also common this period.

I. Disease

No loss from disease noted.

III REFUGE DEVELOPMENT AND MAINTENANCE *

A. Physical Development

Continuation of fence damage from 1964 resulted in removal of nearly six miles of fence and damage to four and one-half miles. This damage is concentrated on the south and north boundaries, and on the hay unit. Invitations to Bid on replacing and repairing of fence were circulated in August but received no response.

Two new fishing regulation signs were constructed, and installed on the western boundary and at the Silver Lake Road bridge.

IV RESOURCE MANAGEMENT *

A. Grazing

Forage conditions were again excellent as in 1964. Sufficient moisture plus warm spring and summer temperatures produced abundant vegetative growth.

Four permittees grazed cattle for a total of 1,093 AUM's on approximately 5,500 acres. This is a reduction of 31 percent from 1964 and is due to reduced grazing programs by the permittees. It is hoped to increase this program next year. Grazing is a valuable management tool in an entrophic area such as this.

Difficulty was experienced in the control of cattle due to fence damage by the winter's storms. This paucity of control existed mostly on the refuge's southern boundary, specifically in the Little Wocus Bay area. Trespass was almost entirely by refuge permittees' cattle grazing on adjacent lands.

B. Haying

Four permittees harvested a total of 490 tons of hay during 1965. High water levels, equipment breakdowns, and problems on their home areas combined to prevent harvest by the remaining three permittees. 9

	1961	1962	1963	1964	1965
Tons of Hay	544	503	385	769	490
Tons per Acre	1.07	0.84	1.18	1.10	0.96
Acres Hayed	510	600	325	700	510

Fence damage included the hay unit fence that separates it from Grazing Unit 6. Cattle managed to get into the hay unit only after harvest.

C. Fur Harvest

The combined effects of 1964's drought and the high water levels in early 1965 have seriously depleted the muskrat population. The high water levels inundated the greater percentage of muskrat houses resulting in high mortality. This high mortality caused closure of the refuge to further spring trapping but only after 148 pelts were taken in February under two permits.

Transects were run through both Units I and II in February, May, and October. The only existing population is in Unit I or north of the Silver Lake Road. Recovery from last winter's mortality has been slow in Unit I and non-existent in Unit II. The estimated population is 1,500 to 2,500.

No removals are recommended for the 1965-66 trapping season because of the low breeding population and possible further population reduction due to even higher water levels than present with anticipated fall and winter moisture. With 100 percent survival of the present population the brood stock would not be excessive. The present low population for such a large area is not efficient in thinning and opening the marsh for the benefit of waterfowl. The forementioned transects also indicated that over 95 percent of observed Canada goose nests (45) were located on muskrat houses. Stimulation of a higher muskrat population might also stimulate increased goose nesting, especially in Unit II where there is a lack of nesting platforms.

One of the arguments for trapping is to alleviate denning pressure on the Silver Lake Road. It appears this is a static pressure at the maximum denning density. The removal of road denning rats only induces this space to be filled by marsh rats. The only accomplishment is that this lowers the marsh population and does not necessarily alleviate road damage. To eliminate this damage to any degree, the marsh rat population would have to be eliminated. This would be contrary to refuge objectives and needless to say, would be virtually impossible. Trapping effects on the present population would be only a reduction in badly needed brood stock and little if any damage reduction on the Silver Lake Road.

V FIELD INVESTIGATION OR APPLIED RESEARCH *

A. Progress Report

Twenty wood duck boxes were constructed and installed on the marsh. Results were as follows: Three used by wood ducks; eight by blackbirds; three not checked due to high water; and the remainder were unused. Those used by wood ducks were in the Big Wocus Bay area.

No Canada goose banding was conducted this year.

VI PUBLIC RELATIONS *

A. Recreational Use

Improved water conditions account for most of the public use increase on the refuge. Overall use was up 86 percent over 1964 and down two percent from 1963 (peak use year). Waterfowl hunting was up 555 percent over last year, the poorest year on record due to low water levels. Fence and road inspections, increased visits by haying and grazing permittees account for the increase in official and economic uses respectively.

Hunting	Fishing	Other Re- creation	Economic	Official	Total	Hunting on Adja- cent lands
950	300	400	650	180	2,480	2,250
145	200	400	530	60	1,335	1,900
1,437	400	400	200	100	2,537	2,100
1,220	300	300	200	200	2,220	2,000
660	300	100	250	200	1,510	500
	950 145 1,437 1,220	950 300 145 200 1,437 400 1,220 300	HuntingFishingcreation9503004001452004001,4374004001,220300300	HuntingFishingcreationEconomic9503004006501452004005301,4374004002001,220300300200	HuntingFishingcreationEconomicOfficial950300400650180145200400530601,4374004002001001,220300300200200	HuntingFishingcreationEconomicOfficialTotal9503004006501802,480145200400530601,3351,4374004002001002,5371,2203003002002002,220

B. Refuge Visitors

May 12, Biologist Edward J. O'Neill talked to the Society of American Foresters concerning the history and present management of the Klamath Forest Refuge.

October 20, Refuge Manager Watson and Assistant Refuge Manager Sekora met with Mr. Warren Drake, District Ranger, Winema National Forest, concerning proposed logging road crossing the refuge's east boundary.

December 16, Assistant Refuge Manager Sekora met with Mr. Drake concerning subject of October 20 meeting.

C. Refuge Participation - See Tule Lake section.

D. Hunting

Ideal water levels and hunting weather combined and resulted in an increase of 555 percent in waterfowl hunting use over 1964. These ideal hunting conditions lasted through the latter part of November to provide the nimrods with an excellent season. The only lack this year was of hunters rather than of waterfowl. Birds remained throughout the open hunting area even with moderate to heavy hunting pressure at times.

Latter November, December, and early January provided little or no hunting due to low temperatures and much snow.' The only remaining birds, mostly Canada geese, remained in the closed area.

Year	Total Hunter Days	Goose Bag	Duck Bag	Total Bag	Geese Per Hunter	Ducks Per Hunter	Total Birds per Hunter
1965	950	124	1,758	1,882	.13	1.85	1.98
1964	145	25	96	121	.17	.66	.83
1963	1,437	215	2,684	2,899	.14	1.74	1.88
1962	657	59	1,038	1,097	.09	1.58	1.67

PERCENTAGE SPECIES IN BAG

Species	1961	<u>1962</u>	1963	1964	1965	
Mallard	15	7	30	45	25	
Pintail	22	40	14	15	15	
Baldpate	16	15	15		16	
Gadwall	6	4	9		13	
Green-winged						
Teal	34	21	14	20	9	

E. Violations

No violations found during the hunting season. During February and March, eagles and hawks concentrated along the Silver Lake Road. These made inviting targets for various great white hunters. One golden eagle, having been shot, was found swimming in the barrow pit paralleling the Silver Lake Road. It died upon being retrieved. Mr. Negus, muskrat trapping permittee, reported finding two bald eagles that had been shot.

F. Safety - Refer to Tule Lake section.

VII OTHER ITEMS *

A. Items of Interest

The Klamath Forest cabin was broken into twice this year. The first was between July 14 and August 2, 1965. Taken were 10-15 Army wool blankets, one defective gas lantern, and six hand tools. Other tools, lantern, extinguishers were passed by. The only damage was a broken window. The Klamath County Sheriff and FBI were notified but did not respond. The second time was on or about December 25. This forced entry was for the purpose of gaining food and shelter. A note of apology was left by hunters whose car had been stuck in the Big Wocus Bay area for three days. Damage amounted to two broken windows.

As noted in the following newspaper article, the Silver Lake Road bisecting the refuge has been suffering from muskrat damage, probably since the road's establishment. The engineering consultant firm of Cornell, Howland, Hayes and Merryfield of Corvallis, Oregon, were employed to study the feasibility of road relocation. The firm's recommendations were to retain and pave the present road without any muskrat control. Possible controls considered were: riprap, the most promising method as to cost; asbestos-cement sheeting, the best but the most costly; and wire mesh, not expected to last long due to the acidic marsh waters. They considered the paving would eliminate most damage by reducing road vibrations, better distribution of weight, and acting as a vapor barrier to capillary water action and thereby keeping muskrats at a low level in the road bed.

Muskrats Score Victory Over Highway Builders

In e century where wildlife problem still persists, Kessler has been forced to retreat from stated.

the advance of civilization, a col- The engineer's department ony of muskrats has chalked up was unable to speculate on an at least one score for its side alternate route through the against the onrushing encroach-marshland if the feasibility stument of man and his machines. dy established that the current

That was the situation today strip was too expensive to main-as County Engineer Winston tain. Kurth was seeking a firm to Annual restoration costs are conduct a study relating to the not available, but the county possible relocation of a portion commissioners reported that of Silver Lake Road in the vi- costs for maintaining the entire:

against the muskrats each than \$35,000 was expended to spring, with the result that the repair damage caused by the county has been the continual Christmas boliday rainstorms loser. Earl Kessler, county road and ensuing floods, they endepartment, remarked that each larged. Nearly 100 logging spring muskrats tunnel under a trucks use the road daily, it section of Silver Lake Road, was said. near the marsh, ur dermining it.

As a result, parts of the road fall into the tunneling, causing deep potholes which make driving hazardous and highway maintenance expensive. In the past, trappers have experienced occasional success in reducing the muskrat population, but despite their degree of success the

cinity of Klamath Marsh. The county engineer's office way 97 last year amounted to has waged a perennial battle \$43,288.97. Of that figure, more

Looking south (Exp. 497 above) and north (Exp. 496 below) along the east boundary at Little Wocus Bay. This is typical of fence damage sustained from the combined effects of wind, ice, and high water levels occurring during January-March 1965.

Exposures 496 and 497 4/65 0'Meill

14

Looking south (Exp. 497 above) and north (Exp. 496 below) along the east boundary at Little Wocus Bay. This is typical of fence damage sustained from the combined effects of wind, ice, and high water levels occurring during January-March 1965.

Exposures 496 and 497 4/65 O'Neill

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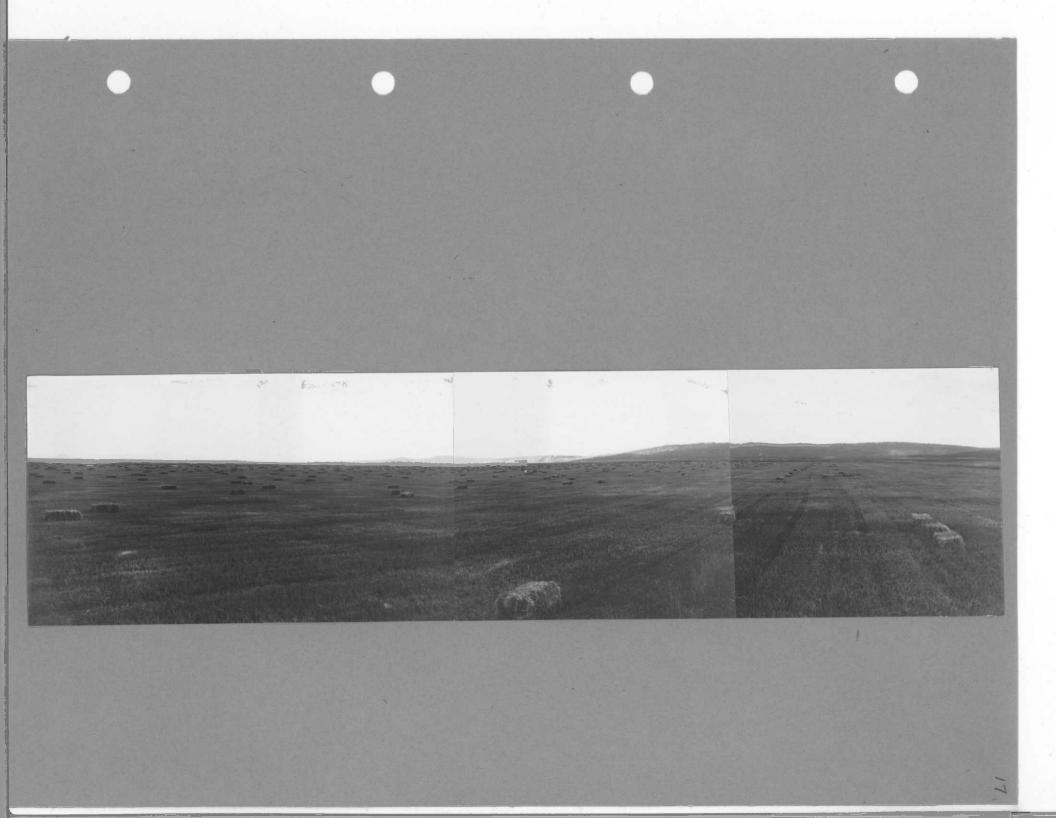
the hay unit were not hayed. Hervestining 190 acres of the have the remaining 190 acres of the 200 ton/acre. Due to high water of the new the remaining 190 acres of the second th

Harvesting hay during the 1965 season. Harvested were 490 tons off of 510 acres for 0.96 ton/acre. Due to high water levels and equipment breakdowns the remaining 190 acres of the hay unit were not hayed.

Exposures 492-494 8/65 O' Neill

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The fluctuation of water in early spring and mid-summer stimulated heavy, dense growths of emergents, particularly cattail. Typical cattail invasion of a previous openwater area is illustrated in this photo.

Exposure 191 8/65 0' Met 11

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17

The fluctuation of water in early spring and mid-summer stimulated heavy, dense growths of emergents, particularly cattail. Typical cattail invasion of a previous openwater area is illustrated in this photo.

Exposure 491 8/65 O'Neill

KF

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Ruddy

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Form NR (Rev. March 1953) BC

WATERFOWL

)-derial Survey			Weeks	ofr	(2) e por f	ting p	eriod	1	
(1) : Species :	1/3-9	1/10-16	1/12-23				2/14-20	2/21,27	2/28-3/6
Swans:	(4) 1/1	1	(4) 1/21	(6) 1/11	(A) 2/3	1	44	1	(A) 3/3
Whistling							- Leisenschut		
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Geese:					An and the				
Canada			45	100	836	680	405	430	500
Cackling	1.Er						1. AV74 100		
Brant				Constant of the			A CONTRACTOR		
White-fronted									1 A A
Snow							Constant of		
Blue									
sider TOTAL GEESE:		1.		Vt.v	804	400	486	430	
Ducks:									
Mallard						320	000	1.200	8,178
Rhads Unident.			10						EGB
Gadwall									
Baldpate				and the second					
Pintail							(00)	8.000	6.663
Green-winged teal					(1)				
Blue-winged teal									
Cinnamon teal									
Shoveler									
Wood			The second second						
Redhead									
Ring-necked					2.4				
Canvasback	1.				1				1
Scaup									
Goldeneye				10	80		6		100
Bufflehead				10					100

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78

1,000

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Other Herrows Goldereye TCTAL DUCKS: Coot: GRAND TCTALE: **11**, 19 65

3/7-13

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CAT.

100 100 100

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9,800

0,500

D.C.S.

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Cont. ' 1 (Rev. March 1953)

Interior Duplicating Section, Washington, D. C.

WATERFOWL (Continuation Sheet)

Aerial Survey	and the second se	veeks	and the second	(2 repor	ting	peri	od		: (3) : Estimated	: (L : Produc	tion
(1) Species	3/11-20	12	3/28-1/3	1/4-10	1/11-17	16 :	4/25-5/1	18	: waterfowl : days use	: Seen :	Estimate total
Swans: Whistling Trumpeter	¥.8	10 £5998	(A) 3/33	brded und	ez (3).				60		
Geese: Canada Cackling	550	850	220	0 - 200 -	947.05 DO	000 000 000 000 000 000 000 000 000 00	250	te sres re sres	37,100	THE OL A	10 11/11/0
Brant White-fronted	550	3,670	600	500	300	250	200	ecp ebe	28,490		
Snow Blue	1,100	2,520	820	700	500	550	450		65,590		
Ducks: Mallard	3,150	3,010	2,290	2,000	2,000	3,000	3,000		174,790		
Black Unident. Gadwall Baldpate	SO	100	150 150 150	200	200	100	100	Special	4,620 6,090 9,940		1.99
Pintail Green-winged teal	5,700	5,550	1,980	5,000	3,000	2,500	1,500	erc seu	303,650		
Blue-winged teal Cinnamon teal				<u>șn</u>	100	200	300		42550		
Sho veler Wood Redhead		70 10 100	90 20	200 20 300	200	200	100 20 300		6,020 770 11,200	MATT	
Ring-necked Canvasback			300	10	300	300	300	•	280		
Scaup Goldeneye	200	560	2,160	2,000	3,000	1,000	3,000		56.110		
Bufflehead Ruddre Barrow's Gol		250	670	200	200	100	100		11,830		
Other Come Horganse TOPAL DUCKS	9,390	10,030	30 11,060	20 10,550	<u>30</u> 7,890	8,660	7,040		420 612,090		
Coot:	100	400	480	500	1,000	2,000	2,000	STRONATRY	47,530		
GRAID TOTALS	10,590	12,950	12,360	11,750	er) 9,390	11,220	9,190		725,270		

		\$*209 25*260 25*260 22*20	, 3° 123 23° 123 2° 103
	(5) Total Days Use :	(6) (7) Peak Number : Total Production	SUMMARY
Swans	. 60	12.8 000 23000 2200	Principal feeding areas Doland ereas, gradier mater
Geese	65.590	2,520	her units.
Ducks	612,090	12.00	Principal nesting areas <u>Geose - ruskrat houses and tule</u>
Coots	47.530	2,000	clumps throughout marsh.
totals	725,270	whot simultaneously	Reported by Palmer C. Selere & Edward J. O'Neill
	INS	TRUCTIONS (See Secs. 7531 through	7534, Wildlife Refuges Field Manual)
(1) S _F	TT		on form, other species occurring on refuge during the d in appropriate spaces. Special attention should be given ational significance.
(A)		and and and the	a the second s
	eks of porting Period:	Estimated average refuge popula	tions.
Re	eporting Period:	and the second second of the second	tions.
Re (3) Es			mber of days present for each species.
Re (3) Es Da	eporting Period: stimated Waterfowl	Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s	
Re (3) Es Da L) Pr	eporting Period: stimated Waterfowl ws Use:	Average weekly populations x nu Estimated number of young produ breeding areas. Brood counts s	mber of days present for each species. ced based on observations and actual counts on representative hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.
Re (3) Es Da (4) Pr (5) To	eporting Period: stimated Waterfowl ws Use: roduction:	Average weekly populations x nu Estimated number of young produ- breeding areas. Brood counts s breeding habitat. Estimates ha A summary of data recorded unde	mber of days present for each species. ced based on observations and actual counts on representative hould be made on two or more areas aggregating 10% of the ving no basis in fact should be omitted.

Interior Duplicating Section, Washington, D. C. 1953

ADDRESS ADDRESS

Cont.

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3-1750 Form NR-1 (Rev. March 1953) (A) Aerial Commo

WATERFOWL

REFUGE	auth Fores	16		1		MONTHS OF	May	TO	August	_, 19
	:				(2)					
(1)	5/8-8	5/9-15	Weeks : 5/16-22	of r	e port	ing p : 6/6-12 :	eriod 6/13-19	6/20-96 :	8/97-7/9	7/4-10
Species	: 1	2	: 3	: 4	5	: 6 :		8		: 10
Swans:	1	1	1	1	1	(A) 6/8		1.00		1
Whistling	1.	al and a second			an grant market					and the second second
Trumpeter										
Geese:		New York Contraction								- Antereste
Canada	800	559	600	500	660	660	660	600	550	800
Cackling		Second Second	Contract of the		1.				Contraction of the second	
Brant									1.	
White-fronted	470	900								
Snow										
Blue	1.	and a series of the	a start in					100 C 100 C		
Stinx Total Gooss	970	850	500	500	660	660	660	000	150	
Ducks:										
Mallard	290	500	380	320	450	400	450	480	600	800
Rinsk Unidentified		and the second				140				and the second
Gadwall	480	400	250	400	250	160	180	150	180	150
Baldpate	2.000	1.275	78		1 1 1					
Pintail	275	200	150	08	70	70	60	55	85	50
Green-winged teal	675	8,330	1,500	8,000	8,130	1,800	560			
Blue-winged teal										
Cinnamon teal	25	and the other Designation of the local division of the local divis	450	450	008	250	250	250	250	250
Shoveler	55	40	40	40	40	40	40	40	40	40
Wood					- 11	10	10	10	10	10
Redhead		600	600	080	600	380	550	550	550	686
Ring-necked						10				
Canvasback							10	10	10	10
Scaup	120	00	70	80	10	10		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		
Goldeneye		-								
Bufflehead	80	45								
Ruddy	80	45	80	70	99	120	160	180	250	800
tiker Total Dacks	4,470	5,775	3,572	3,980	3,040	2,910	2,210	1,005	1,915	1,800
Costa:	10	10	75	125	125	150	200	250	380	350
Grand Totals	5,460		4.161	4.605	4.120	0.785	AUD	THE DE		
	and the second s	and the second sec		and the second sec		A MARCAN A & A . A MARCA	A LA L'ANN	A Description of the A S. Annes		

		Washing	con D. C.	(Conti	nuation S	sheet)					
(A) Aerial Commu										1000	
EFUGE	ath Fores	*				MONT	THS OF	May	TO Aug	uet_,	19 65
() Total Productio	•	Week		(2 repor	ting				(3) Estimated	: (1 : Produc	tion
(1) Species	7/11-17	7/18-24	7/25-31	8/17	8/8-14	8/15-21	8/22-28 8	/29-9/4	waterfowl days use	: seen :	Estimate
wans: Whistling	Y	a userà o	(A) 7/27	orded und	er (3).						
Trumpeter eese: Canada	450	400	18. 900 00 1945 - 84	d countes) timetes)	BIOLES DO	200	280	380	56,710	TRE 30 4	800
Cackling	-00	Canada Conda and	sper of 3	OUTHE DIGO	nced bye	10 00 004	179831.001	- Brid - Brida	al consist on	LA DARINE N	01146
Brant White-fronted Snow	JONJ YA	el 980 xeo)	era bobara	tions x 1	nuper of	daya pre	ent for	each stee	5,390		
Blue Other Total Geese	\$50	400				800	800	360	06,100	89	300
Mallard	580	500	800	000	780	800	880	1,180	00,370	12	320
Black unidentified Gadwall Baldpate	180	100	to the bi	TO PE SOO	d on for ad in ap	alobarere	1.040	1,300	30,410 20,089	0	60
Pintail Green-winged teal	- 40	40	100	200	008	710	1,040	1,700	40,425 78,005	1	20
Blue-winged teal Cinnamon teal Shoveler	200-		830		600	000	200	300	49,325	10	350
Wood Redhead		10	250	10 425	10	10	8 400	10	C100	80	
Ring-necked Canvasback	18	3	20	16	20	25	25	35	1,868		23
Scaup Goldeneye Bufflehead				-	LLTDO		175 91.95	009803	8,840		
Ruddy Other Total Ducks	-1.055	1.048	3.000	180	2,290	200 8.735	880 4,463	200	10,045 386,175	18	1,480
									51,300	50	000
Coot:	350		325	470	700	1,000	1,200	1,300	601,685		
Grand Totals	2,855	2,800	9,745	Cold Star	8,890	4,005	1 Course	0,000			

10 miles

(5)	(6)	(7)	. internet a bank	- Young			North State	11-12-14
Total Days Use :	Peak Number : 1	Total Production			SUMMARY	1. In 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	-	
wans 0	- 0		Principal feed	ing areas	. Upland	areas, gras	unit	8, 1
eese <u>65,109</u>	970 -	900	hay units. e	tream cha	mels	11	1-12-	6.12
ucks 305.175		1.495	Principal nest	ing areas	Geese: 1	tream banks, Diving da	hankte	
oots <u>61,390</u> :	1.200	000	chamels, Si Babblers & C		Boad berry	w ditch, Lit		
	30 30	10	Reported by	Contraction of the second s	A Designed and the second state of the second	- Refuge Mar	ager	10.00 1 100
giena pas.	and the second	14-1		1				
Pintail	In addition to	Secs. 7531 through the birds listed of should be add	d on form, other	species o	ecurring of	n refuge dur:		iven
Pintall'	In addition to reporting peri	100 010	d on form, other ed in appropriate	species of spaces.	occurring of Special a	n refuge dur: ttention show		iven
 Species: Weeks of 	In addition to reporting peri to those speci	o the birds listed iod should be add ies of local and n	d on form, other ed in appropriate national signific	species of spaces.	ecurring of	n refuge dur:		iven
1) Species:	In addition to reporting peri to those speci	o the birds listed iod should be add	d on form, other ed in appropriate national signific	species of spaces.	occurring of Special a	n refuge dur: ttention show		iven
 Species: Weeks of Reporting Period: 	In addition to reporting peri to those speci Estimated aver	o the birds listed iod should be add ies of local and n	d on form, other ed in appropriate national signific	species of spaces.	occurring of Special a	n refuge dur: ttention show		iven
 Species: Weeks of Reporting Period: 	In addition to reporting peri to those speci Estimated aver	o the birds listed iod should be add ies of local and n	d on form, other ed in appropriate national signific ations.	species of spaces. ance.	occurring of Special a	n refuge dur: ttention show		iven
 Species: Weeks of Reporting Period: Estimated Waterfowl 	In addition to reporting peri to those speci Estimated aver Average weekly Estimated numb breeding areas	o the birds listed iod should be add ies of local and r rage refuge popula	d on form, other ed in appropriate national signific ations. umber of days pre uced based on obs should be made on	species of spaces. ance. sent for ervations two or m	each species and actual tore areas	n refuge dur: ttention show	uld be g	tative
 Species: Weeks of Reporting Period: Estimated Waterfowl Days Use: Production: 	In addition to reporting peri to those speci Estimated aver Average weekly Estimated numb breeding areas breeding habit	o the birds listed iod should be adde ies of local and r rage refuge popula y populations x nu- ber of young produ- s. Brood counts a	d on form, other ed in appropriate national signific ations. umber of days pre uced based on obs should be made on aving no basis in	species of spaces. ance. sent for ervations two or m	each species and actual tore areas	n refuge dur: ttention show	uld be g	tative
 Species: Weeks of Reporting Period: Estimated Waterfowl Days Use: Production: 	In addition to reporting peri to those speci Estimated aver Average weekly Estimated numb breeding areas breeding habit A summary of d	o the birds listed iod should be add ies of local and r rage refuge popula y populations x nu- ber of young produ- s. Brood counts a tat. Estimates ha	d on form, other ed in appropriate national signific ations. umber of days pre uced based on obs should be made on aving no basis in er (3).	species of spaces. ance. sent for ervations two or m fact sho	each species and actual ore areas a build be omit	n refuge dur: ttention show es. l counts on r aggregating : tted.	uld be g represen 10% of t	tative

Interior Duplicating Section, Washington, D. C. 1953

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pd 3-1750 Form NR. (Rev. March 1953)

WATERFOWL

	: (A) Aeri	1 Census			(2)					
(l) Species	9/5-11	2	Week: : 9/19-25 : 3	: 9/28-10/2		:10/10-16	10/17-83	:10/ 34-30	: 10/31-11/4	11/7-1
Swans:	In glassies		I States	(A)0/11	(A)10/8	A)10/18	(1)10/19	(1)10/25	1	(4)11/8
Whistling										
Trumpeter								+		
canada	1 300	375	375	305	360	330	800	405		
Cackling				300			809		400	885
Brant		f	+							1000
White-fronted			-		310	205	05	400	980	980
Snow							1	400 50	100	100
Blue	Sector States									
ither Total Geese	210	ETB	375	395	550	1.0.0	396		1	735
acks:										
Mallard	1,100	000	850	755	88	200	008	370	250	175
stury Unidentified	010	576	800	38		850	400	008	008	800
Gadwall		210	2.0,0	170	180	180	100		189	1.780
Baldpate Pintail	1,100	1,700	1,800	1,900	830	016	100	350	400	600
Green-winged teal		1000	300	620			300	8,700	1,700	1,000
Blue-winged teal										
Cinnamon teal	125			30						
Shoveler					100	100 × 200 00	80	50	180	200
Wood	10	20	80		Same States	20	a dreating and			
Redhead	610	360	800		189	180	139	160	100	
Ring-necked									Charles and	Sec. 1
Canvasback	30	30	and the second sec			10		a second a la		-
Scaup				10.1216.12	50		_			63
Goldeneye Bufflehead					A Second Second		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Ruddy	180	180				45		008	9.02	
Other	100	100								
Total Ducks	4.665	8.000	0.15.6	9.530	200	8.005	1,010	4,080	4,180	4,015
oot:	1,000	980	900	10	480	770	650	TTO	000	900
Grand Total							2,055	0,835	5,700	5,710
LETOE ENERE	6,015	4,975	4,065	3,915	1,005	3,400	3,000	0,000	0,700	0,110

3 -1750a

pd

Cont. N 1 (Rev. March 1953)

WATERFOWL (Continuation Sheet)

REFUGE Klemath Fo						MON	THS OF Se	heenner.	TO Mece	mber ,	19 00
	(A) AGE	Week	s of	(2 repoint 12/0-14 14	ting			18	(3) Estimated waterfowl days use	: (l : Produc :Broods: : seen :	Estimate
Swans:	V S	manary of	13 : (A)11/30	orded un	er (3) .						
Whistling				_							
Trumpeter Geese:	DIS	CTUR UN			STATUS NO	babis is	feed on	177 po e	The second second		
Canada Cackling	008	850	200	480	688	350	275	OLE SLEE	44,840	1 % of t	
Brant	50	50	A bohoge	10000 N		gale bis		and also	11,600	_	
White-fronted	ONT ON	00					7		1,750		
Blue									A1800		
Total geese	400	400	220	450	620	350	275		67,680		
Ducks:											
Mallard	809	200	810	150	80	80	08		40,985		
Fuck Unidentified	Pak	and he	50	160					LUAU		
Gadwall						A CIDOL	increase .	CC III III	37,656		
Baldpate	1,100	850		-	=				34,720		
Pintail Green-winged teal	4100	800 850	78	75		1011111	totugo i	feld Nam	<u>10.170</u>		
Blue-winged teal	0.00										
Cinnamon teal									1,086		
Shoveler	100	50							5,680		
Wood					Beron.	and but	The large 1	Contra perio	400		
Redhead	-								13,570		
Ring-necked		8999 A									
Canvasback									400 010	_	
Scaup		124	66		Dertwer	mal ment	no sreet			_	
Goldeneye Bufflehead		-	10				+		70 455		
Ruddy	50		80		Street of a	BUTTON AL ME	1		0,016		
Other					ELTDO:	Dal 1000	118 31.68				
Total Docks	8,400	1,075	418	395	80		80		201,495		
Coot:	750	250	50	50	50	25	15	STRAFT	89,720		
Grand Total		Links		223	100				Litter		and the second second

(0102)

(5) Total Days Use :	(6) (7) Peak Number : Total Production	SUMMARY	200
wans 0 :		Principal feeding areas Stream graned shorelines, have and h	
eese 57,600 :	965		
ucks 261,405	4,930	Principal nesting areas	610
oots	1,000		
WAL 377,895	New	Reported by Palmer C. Seker	600
Battard	to those species of local and	led in appropriate spaces. Specia national significance.	a account of mound of Bright
2) Weeks of Reporting Period:	to those species of local and Estimated average refuge popul	national significance.	
A CONTRACT OF A	to those species of local and Estimated average refuge popul	national significance.	
Reporting Period: 3) Estimated Waterfowl	to those species of local and Estimated average refuge popul Average weekly populations x r Estimated number of young prod breeding areas. Brood counts	national significance.	ecies. tual counts on representativ as aggregating 10% of the
Reporting Period: 3) Estimated Waterfowl Days Use:	to those species of local and Estimated average refuge popul Average weekly populations x r Estimated number of young prod breeding areas. Brood counts	national significance. Lations. number of days present for each sp luced based on observations and ac should be made on two or more are having no basis in fact should be	ecies. tual counts on representativ as aggregating 10% of the omitted.
Reporting Period: 3) Estimated Waterfowl Days Use: 4) Production:	to those species of local and Estimated average refuge popul Average weekly populations x r Estimated number of young prod breeding areas. Brood counts breeding habitat. Estimates h A summary of data recorded und	national significance. Lations. number of days present for each sp luced based on observations and ac should be made on two or more are having no basis in fact should be	ecies. tual counts on representativ as aggregating 10% of the omitted.

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HOMINE OF BELLEVINGE

Interior Duplicating Section, Washington, D. C. 1953

Elementa sorest

- Juni

3-1751 Form NR-1A (Nov. 1945) Refuge	FC Lamath. Fo	REAT	(other	GRATORY E than wat Months	cerfowl)	17	to April 196.65				
(1) Species	(2 First	2) Seen	(3 Peak Nu		(4) Last Seen			(6) Total			
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	<u>roduction</u> Total # Nests	Total Young	Estimated Number	
I. Water and Marsh Birds: Pied-billed Grobe Red-mocked Grobe Eered Grote Groat Bine Horon American Bittern Sandhill Crome	1 1 2 4 1 3	1/11 1/12 1/28 1/28 1/28 1/28 1/2 1/28 1/21							orgas swi Lyo Lyo Select Selec	50 4 120 10 60	
I. Shorebirds, Gulls and Terns: Killdeer Camon Bnipe Long-tilled Curler Willet Orester & Lesser Telloriege Ring-tilled Oull Capies Tern Black Tern	30 2 2 10 1 210 20 1	3/24 3/24 1/27 1/27 1/27 1/27 1/27 1/27	1.0. Cheo "tern", "tern", be given th Sirde "di Sirde "di (Felo "di (Felo "te in a 1 "te in a 1	HIONS La the A. Lessgall' Lessgall' Lessda Lessda Lessda Lessda Lessda Lessda Lessda Lessda Lessda Lessda Lessda Lessda Lessda Lessda Lessda	INSTRUC INSTRUC INTINE OF INTINE OF INTINE OF INTERNE INTERNE INTERNE INTERNE INTERNE INTERNE INTERNE INTERNE		be dotte dot dotte a tadio a tadio a tadio dot dotte dot dotte bate dotte a tadi mut	use ords forb sing sing sing sing sing sing sing sing	eolodi ini Seon ak Nasia in Dien	500 150 20 100 50 250 50 10	

				a water of the state of	
(1)	(2)	(3)	(4	(5)	(6)
III. <u>Doves and Pigeons</u> : Mourning dove White-winged dove	1 4/27	Months o	(6) (6) (1)	Reini e Rin Reini (21)	(10 v . 1945) 01 (1)
IV. <u>Predaceous Birds</u> : Golden eagle Duck hawk Horned owl	Resident	10 March	Data Greber	Name Comper Comper	12
Magpie Raven Crow	Resident	15 15 33 Hareh			20 50 75
Rough-Logged Henk Red-teiled Henk Harah Hank Turkey Vulture	1 1/27 1 2/22 8 3/31 7 1/27				45 20 10 15 19
			Reporte	d by Palmer C. Seker	
(1) Species:	order. Avoid genera form, other species priate spaces. Spec	l terms as "seagul] occurring on refuge ial attention shoul s: I. <u>Water and Ma</u> II. <u>Shorebirds</u> ,	A.O.U. Checklist, L", "tern", etc. e during the repor Ld be given to tho	1931 Edition, and list g In addition to the birds ting period should be add se species of local and b ormes to Ciconiiformes an Charadriiformes)	listed on ded in appro- National
		IV. <u>Predaceous E</u>	<u>Birds</u> (Falconiform	es, Strigiformes and pred Passeriforn	
(2) First Seen:	The first refuge rec	ord for the species	s for the season c		er bergen and
(3) Peak Numbers:	The greatest number	of the species pres	sent in a limited	interval of time.	1013 Cold.
(4) Last Seen:	The last refuge reco	rd for the species	during the season	concerned.	
(5) Production:	Estimated number of	young produced base	ed on observations	and actual counts.	
(6) Total: INTDUP. SEC., WASH., D.C.	Estimated total numb	er of the species u	sing the refuge <u>d</u>	aring the period concerne	əd. 36104

orm NR-1A Nov. 1945)	and an a		and all the second s	GRATORY E			IN STREET		: (f) (D)	0
Refuge	Clanath Fo	r.eat.Refi	lge	Months	of]	lay	toAuguat		7.65	envil 11
(1) Species	(2 First		(3 Peak Nu			4) Seen		(5) Production		(6) <u>Total</u>
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # <u>Nests</u>	Total Young	Estimated Number
I. Mater and Marsh Birds: Rered grobe Vestern grobe Pied-billed grobe White pelicen Double-crosted Concornant Great blue Loren Black-crowned night here American bittern Sandhill cross Kirginis reil	Provious 1 Provious	5/27 7/12 Report	400 180 100 8 45 10 18 15 5 15 5	7/12 7/13 6/8 July 8/23 July 7/27 " August 5/27 July	Summer 1			40 88 8 5 5	100 50 5 18 19 2	600 300 10 150 85 85 15 80 35
I. <u>Shorebirds</u> , <u>Gulls</u> and <u>Terns</u> : Killdeer Commen emips Long-billed emrley Willet	Provice n n	Report	200 80 8 20	6/7 7/12 July 7/12	INSTRUC (babol a as care as care o care o care at a line in line line	Loneoeg Loneoeg oo seloe electro i endo i br>e endo i endo i endo i endo i	the corre Avoid other s other s other s other s	100 40 40	880 120 80	600 150 15 200
Lossor & Greater Tellovlegs Devitcher American Avecet Vilcen's phalarope Califernia gall Ring-billed gall Forester's tern Caspian tern Black tern	7 5 10 00 10 Provious 10 Provious	* */11 8/15 8/11 8/11 8/7 Report 8/11 Report	50 50 50 50 55 50 55 50 55 50 56 50 56 50 50 56 50 50 50 50 50 50 50 50 50 50 50 50 50	5/11 May August 6/7 August 6/7 August 5/27 5/11 7/27			lei teil tastist filet tei ma bete	65 75 180	180 150 800	100 85 76 1,100 100 150 400 80 1,800

1.5	(1)	(2)	(3)	(4	(5)	(6)
III.	Doves and Pigeons: Mourning dove White-winged dove	Frevious Beriod	40 August	Sumer Josident	(0)	100
IV.	Predaceous Birds: Golden eagle Duck hawk Horned owl Magpie Raven Crow Bid Bgle Reugh-lugged howk Red-tailed hawk Turkey valture Moreh howk	Rosident	T T/18 5 " 15 June 20 8/23 4 7/18 2 " 10 June 2 " 18 s/25 10 T/18			10 18 28 100 20 10 20 4 50 3 40 50 70 50 70 50 70 50
00 00 00 00 00 00	or fo pr si	der. Avoid general rm, other species o iate spaces. Spec	l terms as "seagul: occurring on refug- ial attention shou s: I. <u>Water and Ma</u> II. <u>Shorebirds.</u> III. <u>Doves and P</u> IV. <u>Predaceous I</u>	A.O.U. Checklist, 1", "tern", etc. e during the repo Id be given to th <u>arsh Birds</u> (Gavii <u>Gulls and Terns</u> <u>igeons</u> (Columbifo <u>Birds</u> (Falconifor)	1931 Edition, and In addition to the rting period should ose species of local formes to Ciconiifo (Charadriiformes) rmes) nes, Strigiformes an Passe	list group in A.O.U. birds listed on be added in appro- l and National rmes and Gruiiformes and predaceous priformes)
000000	(3) Peak Numbers: The	e greatest number o e last refuge recor	of the species pres	sent in a limited	interval of time.	Line a statistic Line a statistic Line at statistic Line at the statistic Line at the statistic
		timated number of y timated total number			s and actual counts	

INT.-DUP. SEC., WASH., D.C.

36104

3-1751 Form NR-1A			M	IGRATORY	BIRDS	TO				0
(Nov. 1945)		1.5 24	(othe	r than wa	terfowl)	_			1	
Refuge	Causth Ru	rest		Months	of Septem	der	to December	9 F 1	9605	
(1)	(2	1	1 1	3)	(4	1)		(5)	10 gove	.(6)
(1) Species	First		Peak N		Last			Productio	n	Total
							Number	Total #	Total	Estimate
Common Name	Number	Date	Number	Date	Number	Date	Colonies	Nests	Young	Number
			IS NEWLY	22/22			Start Start		eagle .	
I. <u>Water and Marsh Birds</u> :		Bendert		0.000		-			SSW2	d south
Eared Grebe Pied-billed Grebe	Previous	FOFICE	8	9/27 Sept	3	•/23 10/2				75
Red-necked Grebe			1		1	10/16				10
White Polican			No	Data	5	10/2				80
Double-crested Cosmore	10 1						anonizees?		oind	15
Great-blue Herun				9/27	4	12/17	. kendyard		North IN	25
Black-erowned Nt. Nero American Bittern			No	10/2		10/2			and a state	10
Sendhill Grape				9/27			1. St. 1.			25
				-/		1. 2			- 11 98 A	aller (77
	A Carto		-	silver.		- 25			Conf.	dayan '
i. Salard	eygalina			Calma Mile						
	SPEEDS IN		marth 12 m	Chief a	Duruchi -	Panen te	annon add	eet	:zelped	
II. Shorebirds, Gulls and	addition		"azet"	"Ilugaos"	as amisi	general.	blovA	ebto -		
Terns:	boissed at		dt gatrof	eguler :	purring o		e ther s	form		
Killdeer	isein edel	beedin-of	78	Sept.	16	10/16	te spaces	pria		100
Counce Saipe	10-08-200	101.0	abr 🔒 🖄	9/23	aton all	9/23	.eonsol'i	aste		15
Willet			50	Sopt.	No	Data				75
Lesser & Greater Yellowlegs	52-10-52		10	18 10 1000						15
American Avocet			125							1.
Wilcon's Phalarope		200 0028	8 01 8 0	9/23	8	9/23	first ref	The	rst Seen	25
California Call			78	Sept.	No	Bata				100
Ring-billed Gall	10		150	-	6	18/17	r testest	odT in	sak Nuche	250
Perester's Tern			10 25	9/23	No "	Bota	inter teal	edT		15
Caspian Tern Bluck Tern			25	Sept				Carb .		30
	Lineiten ubi	0 800 100		beingert store			The second second second second	the later	no 24 million	00

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	<u></u>	5				0		
	(1)	(2)	. 2(:	3)		4,	(5)	(6)
III. I	Doves and Pigeons:	an formall on the		Months o	(other	3 82	Refuse Blender Terr	(\$P81
-	Mourning dove	Provious Period	44	0/23	44	9/23		00
1	White-winged dove	(ā)	(A)ester	0.5	(8)		(2)	1 de la star parte
		Page 1 Page 1	ibaat 5	L PIER	freak Non	aa	iss	AND ADDRESSING
TU	Dandanana Dindat	Lord Tedann		0.2	12.00	1 Stand		
	Predaceous Birds: Golden eagle	Besidept	1	12/17	Venz	around		
	Duck hawk						Wareh Birefile	A PRIMA THE THE THE THE
	Horned owl	• •	No	Data		· ·····	i ano brond	80
s 1	Magpie	•		· 20.9	1.		a dealer a	
	Raven	10/10	11 1 2		1		alesi Be	25
	Crow	10/10	15	10/20	Still		1 cost	- 25
	Bald Engle Sparrow Hawk	Resident Provide Foriod	3	12/17	Tour .	round	The second secon	20
	Rough-logged Hauk		15	10/17			the second of herein	40
	Smineen's But		15	10/20	54111	Freesit	" a strill	
	Red-tailed Book		8	10/2		• *	Contra de la contr	10
	Turkey Wilture							50
	Marsh Monk	•		10/8				40
						Reported	d by Palmor C. Sekora	
601 31 31 31 45	(1) Species:	order. Avoid general form, other species of priate spaces. Speci	as foun terms a ccurring al atten : I. <u>Wa</u> II. <u>Sh</u> III. <u>Do</u>	s "seagul on refug tion shou ter and M orebirds, ves and P	l", "tern e during ld be giv arsh Bird Gulls and igeons (C	", etc. the reportent to those the to those the to those the the term of term	1931 Edition, and list gr In addition to the birds ting period should be add se species of local and N ormes to Ciconiiformes an Charadriiformes) nes) es, Strigiformes and pred Passeriform	listed on ed in appro- ational d Gruiiformes) aceous
	(2) First Seen:	The first refuge reco						
024	(3) Peak Numbers:	The greatest number o	f the sp	ecies pres	sent in a	limited i	interval of time.	fillen Magazia Maresta
00 00	(4) Last Seen:	The last refuge recor		e species	during th	he season	concerned.	Caspino 1
	(5) Production:	Estimated number of y	oung prod	duced base	ed on obse	ervations		
and ((6) Total:	Estimated total numbe	r of the	species (using the	refuge <u>du</u>	aring the period concerne	d . INTERIOR PORTLAND, DREGON

3-1750b

UNITED STATES Form NR-1B DEPARTMENT OF THE INTERIOR (Rev. Nov. 1957) FISH AND WILDLIFE SERVICE BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Reported by P	almer C. Sel	tora_	Title	Refuge)	lena ger	
(1)	(2)			(3)	(4)	(5)
Area or Unit	Habita	A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWNE	predence	management	Breeding	
Designation	Туре А	creage	the state	Use-days	Population	Productio
bris gam ball	Crops	e auris	Ducks	KA7 630	Looda 320	735
	Upland	150	Geese	37.793	00 00	250
Hal report	Marsh	5.K98	Swans	0	each	
bedatindas ed	Water	310	Coots	42,595	80	180
-dirosectip-	Total		Total	477,418	490	1,105
	Crops		Ducks	514.125	30	100
alsamo as	Upland	at bets	Geese	90.517	scord :	dadidaH (
Carrier to break	Marsh	700	Swans	enerot 60 en	a bris	
its lying at	Water	d.Cupau	Coots	63,910	o wor	
mel sub-	Total	7.00	Total	668,618	30	100
	Crops		Ducks	51.780	300	650
isbool en	Upland	1,120	Geese	15.680	40	50
III dud	Marsh	6.708	Swans	All games and	darram	
the rela-	Water	610	Coots	an edd cas to	200	420
mergent	Total	8,528	Total	68,676	Lev.10 840	1,120
	Crops		Ducks	1,162,885	650	1.485
EBSIS IS	Upland -	1.270	Geese	148.990	130	300
TOTALS	Marsh	13,036	Swans	60		
ere for wo	Water	920	Coots	107.170	280	600
ib and tree	Total	15,226	Total	1,414,105	1,080	8, 285
	Crops	toniton	Ducks			
aldreson	Upland		Geese	stuamos ed b	Euona	Contraction Contraction Contraction
wi hatma	Marsh	aldelt	Swans	rh reference		
-Litze esti	Water	ons, TI	Coots	do bleft ob	perto	
othin	Total		Total	strong birrons		Contrast in Contrast on Contraston
water fowl	Crops		Ducks	~~~~		
dilt as	and the sectors	Man And	Geese	Sector Pit and the	Lucioa	dalifandin yn offiniae o offiniae
	Marsh		Swans	ation repor	infor	
	Water		Coots			
	Total		Total		Callowersenseling and an owner an owner and an own	Breedin
	Crops	Beres de	Ducks	abrid to yr		
	Upland		Geese	Marked and an an and an and have		Contraction of the Contraction
	Marsh	Same a	Swans	CONCRECT-NO. (1999) The Research and the Market Concrete	untra East	Product
	Water		Coots			
	Total	Canadiana and Canadiana Canadi	Total			

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal sub-40, 50. mergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the rela-1,120 tively stable marginal or shallow-growing emergent logi mat vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas 385.1 inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree (NOW), L swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.
- (5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

-1750c Form NR-?

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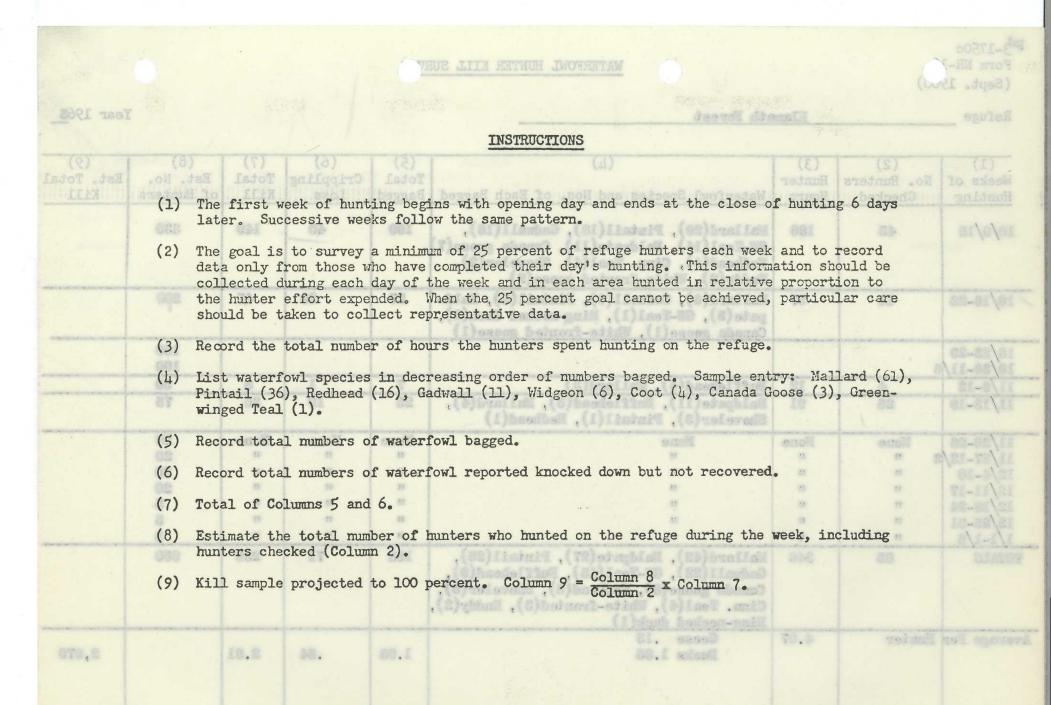
(Sept. 1900)

WATERFOWL HUNTER KILL SURV

Year 1965

Refuge Klassik Forest

			INSTRUCTIONS					
(1) Weeks of Hunting	(2) No. Hunters Checked	(3) Hunter Hours	(4) Waterfowl Species and Nos. of Each Bagged	(5) Total Bagged	(6) Crippling Loss	(7) Total Kill	(8) Est. No. of Hunters	(9) Est. Total Kill
10/0/15	45 broos ed bLo	196 of has	Mallard(29), Fintail(18), Gadwall(16), GW-Feal(14), Daldyste(11), Canada gosse(7) Redhead(4), Cinn. Teal(4), Shoveler(2), Eaddy(2), White-fronted goose(2)	100	to survey	149 149 1 Leon	088 lat	
/ 10/16-22	01 00 11 0 18	57	<pre>Baddy(2), White-fronted geome(2) Mallard(0), Endmall(0), Pintail(0), Bald- pate(5), GW-Tesl(1), Ring-mocked dask(1), Canada geome(1), White-fronted geome(1)</pre>	27 bo	uring each ef 02 t expe sken to col	t sd bin	ed 200	
1 0/23-2 9 10/ 30- 11/	and some state of the local division of the second state of the se		rs the hinters spent hunting on the relate.	od to	sotal numbe	add bro	100 100	
11/6-12 11/13-19	25	18	Bufflehand(4), Hallard(8) Baldpate(11), Bufflehand(5), Hallard(4), Shoveler(3), Pintail(1), Hadbeud(1)	7 25	1	8 35	50 75	
11/20-26 11/27-12/ 12/4-10 12/11-17 12/18-34 12/25-31 1/1-1/6	None	None	owl bagged. enony owl reported knocked down but not recovered anters who hunted on the reluge during the	None	o sa None 1 a o sa Simm 1 a bms commission a mm 1 totot a		02 Rec 02 Rec 02 Rec 02 Rec 02 Rec 03 Rec 04 Rec 04 Rec 04 Rec 04 Rec 05 Rec	
TOTALS	85	346	Mallard(42), Haldpate(27), Pintail(25), Gadwall(22), GW-Teal(15), Dufflehead(0), Camada geose(8), RedLead(5), Shoveler(5), Cimn. Teal(4), White-fronted(3), Raddy(2), Ming-mecked duck(1)	168 000	projected	239	000 hun (9) Kil	
Average Fer	Hunter	4.07	Geese .18 Ducks 1.85	1.98	.84	2.81		2,670
	03-8460		Roperte (over)	d by:	Nalmer C. S	okora		



ATTO 9 .) "9 8. 17 9730 9.

80348-60

80	3-1752 Form NI (April 1946)	Refuge Manager	OMEST	UPLA	ND GAME BIRD		January	to _	1613
	(1) Species	(2) Density	y Pro	(3) oung duced	(4) Sex Ratio	R	(5) emovals	(6) Total	(7) Remarks
	Common Name	Cover types, total	cres Lego per gen Bird N.	obs'v'd. Estimated Total	Percentage	Hunting	For Re- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
	saruss crions , technol Lautos au bas bei	NO UPLAND CANE BIR	ine tener bus land,		HE PERIOD,	sò's ioda Sta Sta mta mta	ton not und landward ta, etc. dbi use ta ald co alas area	informati. swang, up grass pra Wo, 7 shoi observatis sise of se	
	atum	e farios bus suctors	pon obeez	a losso	g produced, ng habitat,	you theat	nmber of tative o	and the product of the second s	(3) YOUNG PRODUCED :
		ma, etc. Include d	y, hease	a taka	liv of vilue	prin Liai	selligs se 1 sv	Titts dolma other spec	(4) BEX RAIXON
		store report pertod.	abuib bev	00 m X1	each catego	ut w	daun Let	Indicate	(5) REMOVALS:
		elar period, This secret during carts				i abi	iotal numi isdart bij	Estimated include in	(6) TOTALI
		a covered in survey.	ents bis a citicatily	02 PaLon 091-000	determine po informațion-	ad. i date	bhod vae	Indicate a	(7) REMERIES
		and the second							
				- 006.0	sd tifuoda be	savo	bolteq (ooble to the	iggs annuloo yino *
									1 And Anna Start

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES:

(2)

Use correct common name.

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) Species	(2) Density	r ai k	(3) Young Produc ed	(4) Sex Ratio	(Rem	5) novals	(6) Total	(7) Remarks
ommon Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd. Estimated Total	Percentage	Hunting	ror ke- stocking For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
	NO UPLAND CANE DI Donnel of Looks II Donnel Of Look			RIE PRRIOD	o da sta sta u vha vha sta	t but not md igram d be use d be use he and co ple area	informatio swamp, upl grass prod No. 7 abou observatio size of as	
	stone and entrols or		nogy bean	produced, i g habitat.		lo . scimu d estitet	Satimated is represe	(3) YOUNG PRODUCED:
	, etc. Inolude da		burgy, p	eily to wild	nin Milas	99) (99) 95-11-89	This column	(4) BEX ENTED:
	be report period.		Develor y	esch catego:	at 's	dian Ist	d efacilari	
	nt period. Ikis n Rugo during cartai	ins rep ble r	yairad ay dal yaidar	ing the rein as these mig	ia nd g nia	obal min idens bi	Retinated include re	
	overed in survey.	i area ally r	as contáin Riteop do	stanine poj nformation r		nai bodi Integrati	indicitate do statiant	
			beni	ad blucks be	170710	ho. neg	d) of elde	* Only columns applit

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

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

		_								1 NR-2 - UPLAND GA	
(1) Species	(2) Density	at h	(3 Your Produc	ng	(4) Sex Ratio	R	(5) emoval		(6) Total	(7) Remarks	(1)
ommon Name	Cover types, total p	eres er Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent inform specifically re List introductio	quested.
	bittomland hardwoods MINU OM fe Management te should be based o as Survey method us		a soli a soli a soli a soli logica s a soli logica s	gri evid	NTED DURING	when the q	used t cou	d be an an	of cover a information grass prai No. 7 shou observation size of sa		
	valions and actual co	reedo	noqu	bess	produced, t g habitat,				Estimated in represen		
	nte, stc. Include da	BBBBB	ey, p	turi	rily to wild e.		Les :		This colum other spec		(4)
	g the report period.	ntuk	bevol	y rea	each categor	nl ·	nube	Lat	Indicate t	REMOVALS:	(5)
	apart period. This m rofuge during certai	she r the	ering 10 int	ib eg itter	ing the refu us those mig	au m Eg el	numbe bir	otal iiden			
		l are tally	as 10.	dat:	etermine pop nformation n	to d mt 1	used atta	boda g nai	Indicate m		

Reported by: Palmer C. Sekora

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Ess.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

Reported by: Release C. Roberts

(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.

Alara th rones

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- (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.

3-1754 Form NR- (June 1945)	Refuge <u>klanath</u>	00075572		LL M	OITO		Year	ending Ay	pril 3	0, <u>1965</u>	A A A A A A A A A A A A A A A A A A A			
(1) Species	(2) Density	nt bere	bie.	Rem	(3) ovals	ich sp	10 20	D	isposi	(4) tion of	f Fure	297.7.75	1 sp	(5)
i, etc. of North	ddarsbat, bellat-stifte od bisits adt at baut	.leveluj 2 ora os	11.3 17 J	i. fu	errl n a	uge ų some	178-1-	Shar	e Trap	ping	bed	ted		Total Popula-
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Re- search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Fure Destroyed	tion
-senolai Muskrat edi , bei s occur in	Cattail-bulrush-sodge marsh 13,036 acres	r animal strom cound on broop	pe eac pe eat	735	ia by a cov ot b	bezae bezae beca sose sose	exp pre es 1 ton 1	7-8831 7-8830	28 560	7	147		<u> </u>	Pro-sesson 6,000 Post-sesson 3,500+
	Channels and marsh and near aspen groves- appron. 1000 acres	auch a ch twoda, twoda, etc.	ao har har	not end pze	du , an , an ,		ntoln aour aour la ',a	lestred f Mee: e Dardwood	the Exam land					26
Cotton Tall	Bitter brush, busk br ponderose, lodgepole pine edges, Approz. 360 acros	alle bi	do a b	tuei isu i	on a etho	boe# 1 797 1 2180	be Su Bu	id should a areas ated uni	estan gasa 12a2					
ory Antesi Main	Cattail-bulrush-sedge marsh 13,036 acres		sa sa no¢	ias : ale	na 3 reac	lodin any	enos	ous year r. Alec	a nug	i de contringen de stat en	u mara un anternagen	1		20
Coyote and salar	On ent off "segard .	odmun 1	276	y adi	103	L ars	ped 1	are-tra	On al	:EUR 9	D NOT	1203) 11	0 15
Boboet	on and off	esch s	10 -38	pels	20 3	adaeu a a a	Indo	I .Ienn	azeq					occasional
Recoon List removals by	Predator Animal Hunter		ite	zd un	wies	eili	tt ne	de 66 b	laoge					20

Whigh water levels in December, 1964 and January, 1965 substantially reduced population.

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

> Use correct common name. Example: Striped skunk, spotted skunk, shorttailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

SH BITOT MR

Applies particularly to those species considered in removal programs. 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, bottom land 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) REMOVALS:

REMARKS:

BUSAL STRUCTURE

(1) SPECIES:

(2) DENSITY:

The

State of the second
B. A.

13 M. E.

RE

Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

Da	
3.1755 Form NR-, DISEASH	E
Refuge Klamath Forest	Year 195
Botulism	Lead Poisoning or other Disease
Period of outbreak b loss moted in refuge due to high mater levels and continuents frach Period of heaviest losses wher inflow during summer fail menths Losses: (a) Waterfowl Actual Count Estimated (b) Shorebirds	Kind of disease Imp Species affected
Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.	Food conditions
Condition of vegetation and invertebrate life	Remarks
	Beparted by: Palmer C. Sakera INTDUP., D.C 5381

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PUBLIC I - INCOME GIBLES E (See Instructio	
Refuge Klamath Porent 1. Visits a. Hunting 950 b. Fishing 300	Calendar Year 1965 c. Miscellaneous 1,230 d. TOTAL VISITS 2,480
la. Hunting (on refuge lands)	2. Refuge Participation (groups)
TYPEHUNTERSACRESMANAGED BYWaterfowl9803.700FTB	TYPE OF ORGANIZATION NO. OF NUMBER IN NO. OF NUMBER IN
Upland Game	GROUPS GROUPS GROUPS GROUPS Sportsmen Clubs
Big Game	Bird and Garden Clubs
Other - INCLUDE crow, ox, and similar hunting.	Schools
Number of permanent blinds	e. Service Clubs surres or sesten sur of pringe
Man-days of bow hunting included above	Youth Groups
Estimated man-days of hunting on lands adjacent to	Professional-Scientific 2 110
refuge 2,250 place action of heatpel	
lb. Fishing (area open to fishing on refuge lands)	State or Federal Govt.
TYPE OF AREA ACRES MILES	e of Other The Covered Canal and a feet a foil to
Ponds or Lakes	3. Other Activities TYPE NUMBER TYPE NUMBER
Streams and Shores	TYPE NUMBER TYPE NUMBER Press Releases Radio Presentations Redio Presentations
Ic. Miscellaneous Visits	Newspapers (P.R.'s sent to) Exhibits
Recreation 400 Official 180 Economic Use 650 Industrial 0	TV Presentations Est. Exhibit Viewers
3-1756	Reported by: Faimer C. Bekere

(Rev. 4/63)

						leaved by: Te	gamme	COLUMN COLUMN	
		620	Industrial	IN	NSTRUCTIONS	Presentations		Est. Exhibit Views	12.2
	Total of a,			190		wspapers "R.1s sent to)		Exhibits	
tem la:	the purpose visit, or si highway beca not directly of traffic, observe wild <u>Computing vi</u> end samples used when ac boats based <u>Acres</u> - of n	of: huntin milar inter use of an i related to and those b life on the <u>sits</u> . Wher varied by s curate figu on range of refuge open	g, fishing, est. INCLUI nterest in t the refuge, oating on na refuge. e actual cou eason or wea res are not usage. Cou for each typ	bird-watc DE - those The area. persons wigable r unts are i ther. A available unt a camp be of hunt	ching, recr who stop EXCLUDE - using refu rivers or t impractical conversion e. Each re per once fo ting.	eation, busine within the rep persons engag ge as most di he Intercoasta , "sampling" : factor of 3.9 fuge will deve r each 24-hour	ess or ec fuge whil ged in oi rect rout al Canal, is used w 5 (of pas elop a co r period	day or part thereo onomic use, offici e traveling on a p l or other industr e or principal ave unless they stop ith midweek and we sengers per car) i nversion factor fo or fraction thereo ssignment of blind	al ublic nue to ek- s r f.
	sampling pro	ent to refug ocedures cov reams open t	e. Normally er a wider a o fishing, i	consider rea. For	red within r big game	hunting, the of the state of th	listance	dary, unless estab may be greater. Information on "sh	
tem lc:	Recreation. center use,	INCLUDE ph	otography, c				wimming,	boating, camping, under Item 1.	o. or NUM
tem 2:	Industrial. from Item 1. INCLUDE the	"On Refuge"	groups in]	items lc a	and 1. In	"Off Refuge"	column in	ories. EXCLUDE th clude only those g Items lc and l.	,
tem 3:				parades,		oits OFF the re		CLUDE those ON.	

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3-1758 Form NR-8 (Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Keiuge		ADDA TO	1. 1. 1.	_ County	Klama	th	344	- State	Oregon	
Cultivated Crops Grown	Permittee's Share Harvested		Government's Sl Harvested		hare or Return Unharvested		Total	Green Manure, Cover and Water-		
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons	Acreage Planted	fowl Br Type an	owsing Crops Id Kind	Total Acreage
abose a grarus cue Asar.	worignt to shuld add yledstages between the relation betroquer ad on	a ere and a set of the start of the set of t	- Rebert all screeks hlanted	and more person in the second and th	roda daždw "vad bas "oosadod "no	a tilibu serse lo redaun add ting a add rebut anode ed biosta di balastrate egons anal to sing o beta the Bashels Harvested o	orus ton reborting burbones" den brunge på mone tper ome be de nje reborting berrog negengje de njertes berrog versegje	Fallow	Ag. Land	A LOU MEESTING FORM ME-8
o. of Permittees: Agricultural Operations Haying Operations Grazing Operations										
Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revent		GRAZING	Num Anix	ber mals	AUM'S	Cash Revenue	ACREAGE
2	d ta		out to	1.	Cattle		a ha a	1,009	\$1639,95	5,000
The second se	- I and		an in	2.	Other				A	
	38		2.8	1.	Total Refuge Acreage Under Cultivation			.on	None	
Hay - Wild	490.1	510	\$1470.3	0 2.	2. Acreage Cultivated as Service Operation					

"Due to fence damage, cattle moved between refuge and private lands at will throughout the grazing period

pa

DIRECTIONS FOR PREPARING FORM NR-8 CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

<u>Cultivated Crops Grown</u> - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

<u>Permittee's Share</u> - Only the number of acres utilized by the permittee for his own benefit should be shown under the <u>Acres</u> column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the <u>Bushels Harvested</u> column. Report all crops harvested in <u>bushels</u> or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. <u>Unharvested</u> - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

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Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under <u>Cultivated Crops</u>, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

SIGNATURE PAGE

Submitted by:

uess M (Signature

William Nuess Acting Refuge Manager

(Title)

Date: February 4, 1966

Approved, Regional Office: RFR

moreh 2 Date:_ 1966

20 a (Signature)

Associate Regional Director

(Title)