



COVER PHOTOGRAPH

Willie Stevens, of Reno, shows the evidence that fishing was excellent in the marsh this year. He caught this 14-pound channel catfish in the Stillwater Point Reservoir Canal on May 19th.

Photo by Jim Curran, Nevada Fish and Game

STILLWATER WILDLIFE MANAGEMENT AREA
*ANAHO ISLAND NWR
FALLON NWR

REFUGE NARRATIVE REPORT

CALENDAR YEAR

1971

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
UNITED STATES DEPARTMENT OF THE INTERIOR
FALLON, NEVADA

NARRATIVE REPORT

STILLWATER WILDLIFE MANAGEMENT AREA

Calendar Year

1971

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I GENERAL

A. Weather Conditions

January weather was rather severe. On January 3rd a temperature of minus 9 degrees was recorded, which is very cold for this area. Weather varied through April. Temperatures alternated from warm periods of 60-75 degrees to sudden drops below freezing. Precipitation was about 43% below normal.

May was a cool, wet month. About twice the normal precipitation fell. This, coupled with cool nighttime temperatures, adversely affected nesting waterfowl. On May 28 a severe hail storm broke 13 window panes at the shop. Rain showers slacked off in June. The last freezing temperature came on the second of June.

The second half of July and early August was the hottest period. Most days were in the high 90's, but only two days reached 100 degrees. Nighttime temperatures generally remained in the 60's which kept both soil and water extremely warm.

September 18 had the first freezing temperature, giving Fallon 108 days between recordings of 32 degrees. Autumn continued warm with 80-degree readings to mid-October. Precipitation was about normal for the rest of the year.

Temperatures dropped early in December. On December 9, after two nights of 6 and 9 degrees, most impoundments were frozen. Temperatures remained cold, dropping to a low of 3 degrees at the close of the year.

The following chart summarizes weather data obtained from U.S. Weather Bureau Station operated by the Nevada State Experiment Farm at Fallon.

	Precipitation		Temperatures	
	<u>1971</u>	<u>Normal</u>	<u>Max.</u>	<u>Min.</u>
January	0.34	0.54	69	- 9
February	.11	.62	69	8
March	.33	.48	73	1
April	.42	.47	75	18
May	1.14	.59	83	28
June	.59	.41	91	32
July	.25	.18	100	41
August	.44	.14	96	46
September		.22	93	28
October	.56	.45	84	13
November	.14	.34	70	14
December	.55	.57	59	3
Total	4.87	5.01	100	- 9 Extremes

B. Habitat Conditions

Water. Snowpack conditions early in the year were excellent over most of Nevada. Reservoir storage also was higher than normal. Forecasts proved to be accurate. For the summer months, the Carson River flow was 130% of normal. On October 1 Lahontan Reservoir storage was 109% of average. This was the third consecutive year for good water conditions. It appears that next year will continue this trend. Soil Conservation Service's Water Supply Outlook on January 1, 1972, stated that current snowpack conditions on the Carson River drainage equalled those usually present by March 1.

Large streamflows were also experienced on the Humboldt River drainage. By early summer all reservoirs and the Humboldt Sink near Lovelock were full. For the first time in many years water entered the Carson Sink from the Humboldt Sink. Most of the Carson Sink is covered with water coming south against the Pelican Island perimeter dike. With all storage facilities full and forecasts for another good water year, it appears much more water will be dumped into the Carson Sink. We anticipate this with some concern for similar water conditions created the massive outbreak of botulism at Pelican Island in 1952.

The table on the following page summarizes water receipts to Stillwater in 1971. The Management Area received about 25% of the water released from Lahontan Reservoir. Of the water sent down the Carson River through the Management Area, 5,788 acre feet could not be contained at Pelican Island and flowed on to the Carson Sink.

Lead Lake received about 61% of the inflows to Canvasback Gun Club. In years of abundant water such as 1971, Lead Lake receives a large percentage of the Stillwater Slough water entering the Canvasback Club. However, Canvasback Club can physically hold as much water as they desire. In 1967 Lead Lake received about 38% of the inflows to the Club.

A total of 4,130 acre feet of water was delivered to private water rights within the Management Area--3,700 acre feet to Canvasback Club and 430 acre feet to Joe Serpa. *From Still. Pt. Reservoir*

After all water not accountable to Stillwater was removed, the annual net receipt was 92,020 acre feet. This amount about equals the stated requirement of 91,400 acre feet.

Because the water requirement was received this year, a brief summary of water conditions will be presented. Early in the year all units and reservoirs were filled. In April water had to be dumped into the brush at Indian Lakes because of insufficient storage facilities. By June the levels of Willow-Millen were dropping nearly a foot below operational level. At the same time it was difficult to hold Stillwater Point Reservoir down to its maximum level. The problem is that water from Stillwater Point Reservoir cannot be transported to the west side of

STILLWATER WILDLIFE MANAGEMENT AREA WATER SUPPLY - CALENDAR YEAR 1971

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEPT</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>TOTAL</u>
CARSON RIVER BELOW LAHONTAN	178	1100	14610	45170	45580	53370	64960	59560	48420	22420	6880	293	362,541
<u>WATER STAGE RECORDERS</u>													30
Stillwater Diversion Canal	722	546	2280	2940	4670	5170	8220	6250	4380	4320	2730	884	43,112
Stillwater Slough Drain	336	287	749	2210	2590	1740	2550	2600	2860	2400	1300	356	19,978
Palute Diversion Drain	40	28	217	975	858	868	708	597	558	329	37	19	5,234
Indian Lakes Canal	1410	1040	1560	1650	1560	1070	1440	1390	1650	2070	1500	1480	17,820
Carson River Below Fallon	202	140	100	647	857	936	497	333	4890	1460	1220	195	11,477
TOTAL ACRE FEET	2710	2041	4906	8422	10535	9784	13415	11170	14338	10579	6787	2934	97,621
<u>STILLWATER W.M.A. RECEIPTS</u>													+10%
Stillwater Diversion Canal	722	546	2280	2940	4670	5170	8220	6250	4380	4320	2730	884	43,112
Canvasback Gun Club ¹	1200	35	290	1064	3720	2015	1950	1183	575	1000	1810	710	15,552
Palute Diversion Drain	40	28	217	975	858	868	708	597	558	329	37	19	5,234
Indian Lakes Canal	1410	1040	1560	1650	1560	1070	1440	1390	1650	2070	1500	1480	17,820
Lower Carson River ²	95	140	100	647	857	936	497	333	1137	568	284	95	5,689
Subtotal	3467	1789	4447	7276	11665	10059	12815	9753	8300	8287	6361	3188	87,407
10% - Unmeasured Inflows	347	179	445	728	1167	1006	1282	975	830	829	636	319	8,743
Subtotal	3814	1968	4892	8004	12832	11065	14097	10728	9130	9116	6997	3507	96,150
Less Private WR Deliveries													
Canvasback Gun Club	210	170	90			430	380	515	545	510	510	340	3,700
Joe Serpa Ranch						150		180	100				430
TOTAL NET RECEIPTS	3604	1798	4802	8004	12832	10485	13717	10033	8485	8606	6487	3167	92,020
TOTAL REQUIREMENTS	863	1726	4314	7968	11981	13911	15790	14824	11067	5482	2588	863	91,377
SURPLUS OR DEFICIENCY	2741	72	488	36	851	3426	2073	4791	2582	3124	3899	2304	643

1 Stillwater Slough water released from Canvasback Gun Club

2 Includes only water used at Pelican Island, does not include flows to Carson Sink

Recorder data are provisional records of USGS, subject to change

the marsh. Pelican Island was dry most of the summer and provided little wildlife habitat. In November Upper Foxtail Lake was drained for management purposes. The year ended with most units full.

The table shows monthly deficiencies from June through September. Surpluses in other months, which were held in the units, compensated for the deficiencies so the total annual receipt did equal total requirements. This does point out how water receipts are out of phase with water needs in the marsh. When water levels should be lowered in the winter months, they must be raised to store water to be used later in the summer. Levels still drop during summer months when they should remain high for maximum plant production.

Water Negotiations. The Department of Interior's Operating Criteria Committee still meets to regulate flows in the Truckee and Carson Rivers to maximize receipts to Pyramid Lake.

At the end of the year the Pyramid Lake Task Force finally concluded its study and report to the Secretary of Interior and the Governors of Nevada and California. The purpose was to attempt to locate enough water to stabilize Pyramid Lake's level.

The main contribution of Stillwater's personnel was in the Betterment Committee. Mr. Robert McVein, Division of Engineering, and refuge personnel completed the principal document relating to wildlife values, entitled: Evaluation of the Effect of Loss of Water For Use By Waterfowl and Other Wildlife In The Lahontan Valley. Refuge personnel also attended many of the Task Force meetings.

Some of the basic recommendations in the Task Force Report include automation of the irrigation project; abandonment of some storage reservoirs in the valley; lining certain canals and changing parts of the project from flood irrigation to sprinkler irrigation. These practices would salvage an estimated 95,150 acre feet of water to be delivered to Pyramid Lake. Costs of these practices would exceed \$1,500,000. Of course, this water savings would drastically affect Stillwater Marsh. The recommendations recognize this, and state that "...action be taken by the appropriate agencies and authorities concerned to reduce the size of the managed portions of these areas, and to make such modifications and improvements as may be necessary to effect maximum utilization of the water which will reach these areas." Rough estimates for improvements or modifications on Stillwater Wildlife Management Area, alone, may reach \$3,900,000. It also recognizes that direct water allocations may be necessary if wildlife areas are not receiving enough water "...to maintain viable, but reduced, wildlife and waterfowl functions."

The salvaged water--95,150 acre feet--does not meet the requirement of 135,000 acre feet to hold Pyramid Lake at its present level. With the salvaged inflow, the average lake elevation would drop about 20 feet in

the next 100 years and stabilize about 40 feet below the current level in the year 2580.

Other possible out-of-basin water sources for Pyramid Lake include importation of water from the Pacific Northwest, groundwater pumping, importation of water from Honey Lake, California, weather modification to increase snowfall in mountains, and snowpack evaporation suppression.

The Task Force Report has been submitted, and already voices are heard--some in support and some opposing it. Nevada's Governor O'Callaghan urges support of the report. Paiute Indians, who own Pyramid Lake, vehemently are against it, and want the lake stabilized at its present level. On January 6, 1972, Senator Edward Kennedy, Chairman of Senate Subcommittee for Administrative Problems, and Senator John Tunney conducted a hearing in regards to the Indians' water rights. Senator Kennedy expressed his feelings that "The Pyramid Lake Task Force Report did little except express a wish for more rain."

Food and Cover. Marsh conditions deteriorated considerably below last year's level. With good water conditions, only East Alkali Flat #2 was dry during summer months; Willow-Millen and Swan Lakes were low part of the year.

Salinity did not appear to be a problem, for adequate water was available to keep it within the plants' tolerance level.

This year it was not possible to conduct an aquatic plant survey in the marsh. Food production and distribution were judged by ocular reconnaissance from aerial waterfowl censuses and also waterfowl use relative to habitat units.

Sago pondweed (Potamogeton pectinatus), muskgrass (Chara sp.) and widgeongrass (Ruppia maritima) were the principal aquatic plants. No data are available in regards to their relative abundance. Sago pondweed should have remained the most abundant because of good water conditions with low salinity.

On the basis of experience over the previous five years, aquatic plant production dropped below last year's level and possibly less than 1969. Gross changes were noted in several units. A steady decline of Foxtail Lake has occurred for the past three years. Production decreased in Dry Lake also. These units normally support the bulk of the birds in the refuge. Waterfowl use dropped significantly. East Alkali Flat #1 evidently produced good beds of aquatics for it received excellent bird use.

Goose Lake, normally an important unit for food, produced very few aquatic plants. Few waterfowl used the unit this fall. Tule Lake, again, produced practically no food.

The best food producing units were Pintail Bay and Nutgrass Unit as judged by high waterfowl use.

The decline of marsh conditions is becoming very serious. Swans and diving ducks require the natural foods produced in the waters. Production in the most important units has dropped steadily in recent years. We believe we know the problem, but are not able to correct it. Most units have stable water levels all year, year after year. For proper management, they should be dewatered during winter months--at least on a rotational basis. This practice would reduce the high carp population and allow decomposition and aeration of impoundments' bottoms. We realize that this should be done, but we cannot physically do it. Stillwater Marsh has limited outflow capacity to the Carson Sink. Therefore, units cannot be drained as they should be, because there is no place to put the water. At the other end of the system, water storage facilities are insufficient. If Stillwater Point Reservoir and Indian Lakes are full, the water receipts must be passed on to the habitat units. With water receipts coming in that cannot be stored, and outlets from the marsh already filled, the only alternative is our usual procedure--fill the habitat units.

As a test of the benefit in draining a unit, Upper Foxtail Lake was selected. This unit has had low production of sago pondweed. It was drained in November and will be kept dewatered until late spring. Next year's plant production will be compared to previous years' records. Thus far, a large number of carp have been killed, which by itself should improve conditions.

Emergent aquatic vegetation grew well this year. Most stands were robust and produced excellent seed crops. Alkali bulrush (Scirpus robustus) was best in the Nutgrass Unit, Pintail Bay and East Alkali Flat #1. Hardstem bulrush (Scirpus acutus) was most dense in Lead Lake near South Lead Lake Landing and across the road in adjacent Millen Lake. The expansion of emergents was most notable in Willow-Millen Lakes where new clumps of hardstem bulrush and strips of alkali bulrush appeared along the shorelines.

II WILDLIFE

A. Migratory Birds

Swans. Spring use by whistling swans was very low. The 22,526 use days was only 18% of the previous five-year average. No peak in numbers occurred; use remained around 200-400 from January until April 3rd, the normal departure date.

The first fall sighting occurred October 28, which is about normal. Use was 44% of the five-year average--only 49,315 use days. Swans peaked at 1,600 early in December prior to freezing of all impoundments.

Several factors are associated with the low swan use. The food supply was less than normal because of poor aquatic plant growth. Swan production appeared to be down, for very few juvenile birds were observed. Weather conditions were not conducive for extended use. Ice covered the ponds about December 8 and remained frozen through the rest of the month.

Geese. Snow geese were present in small numbers during most of the spring period. The last birds departed the week of April 4-10, about two weeks later than last year. The largest number using the refuge during the spring migration was 350 from late February through mid-March.

White geese returned in the week of October 3-9. They peaked at 3,350 the first week of December. Total use of 108,080 use days was 42% below last year. Most use occurred on East Alkali Flat #1, Pelican Island, Pintail Bay and Nutgrass Unit.

Canada geese peaked at 1,645 in early February. Spring use was 9% higher than the previous year. By early April the population had stabilized at the breeding season level.

The breeding population of 22 pairs was similar to the 20 pairs recorded last year. The hatching peak was about two weeks later than normal, occurring the first week in May. Apparently the cold spring did not delay nesting significantly, but it did affect nesting success. Computed nesting success was 57%, compared to the normal 75%. Brood size was 3.7 which is much less than the usual 4.5 to 4.8, indicating high brood mortality. Total production was 48 goslings--33% less than last year.

Geese began increasing in July. Numbers reached 1,000 by September 1 and peaked at 1,655 late in December. Total use was 147,959 use days, highest ever recorded on the Management Area.

Ducks. Spring Migration. The first week of January had the lowest population, only 1,500. Ducks peaked at 63,200 during mid-March. The total recorded 3,322,270 use days was the highest since 1966. Principal species in order of abundance were: green-winged teal, pintail, ruddy duck and shoveler. Canvasback use was 194% above last year.

Production. Spring weather conditions were generally adverse to duck nesting. Rain showers and occasional hail storms prevailed into June.

A ground survey for mallard and pintail pairs was conducted April 19 and 20. An aerial survey with Nevada Department of Fish and Game on May 18 covered the remaining species, aided by additional ground checks.

A summary of the breeding population appears on the following page. The population decreased 5% from last year. Of the dabblers, widgeon and pintail increased 17% and 10%, while other species decreased up to 32%.

WATERFOWL BREEDING PAIR SURVEY

SPECIES	YEARS				% CHANGE FROM 1970
	1968	1969	1970	1971	
CANADA GOOSE	18	27	20	22	+ 10%
DUCKS					
<u>Dabblers</u>					
Mallard	280	233	382	343	- 10%
Gadwall	428	442	619	606	- 2
Widgeon		1	6	7	+ 17
Pintail	122	137	145	159	+ 10
Green-winged Teal			19	13	- 32
Cin/BW Teal	780	819	1,094	1,007	- 8
Shoveler	<u>40</u>	<u>57</u>	<u>103</u>	<u>85</u>	<u>- 17</u>
Subtotal	1,650	1,689	2,368	2,220	- 6%
<u>Divers</u>					
Redhead	694	857	955	882	- 8%
Ring-necked Duck		1			
Canvasback		9	10	11	+ 10
Lesser Scaup				1	
Ruddy Duck	<u>186</u>	<u>320</u>	<u>485</u>	<u>512</u>	<u>+ 6</u>
Subtotal	880	1,187	1,450	1,406	- 3%
<u>Unidentified</u>	<u>13</u>				
TOTAL PAIRS	2,543	2,876	3,818	3,626	- 5%
COOTS	2,100	1,926	2,440	2,275	- 7%

WATERFOWL PRODUCTION - 1971

<u>Species</u>	<u>Pairs</u>	<u>Reproductive Success</u>	<u>No. Broods</u>	<u>Average Brood Size</u>	<u>Estimated Production</u>	<u>% Change From 1970</u>
CANADA GOOSE	22	57%	13	3.7	48	- 33.3%
DUCKS						
<u>Dabblers</u>						
Mallard	343	40%	137	6.0	822	- 18.6%
Gadwall	606	20	121	5.3	641	- 26.2
Widgeon	7	45	3	5.5	17	- 5.6
Pintail	159	45	72	5.9	425	- 6.2
Green-winged Teal	13	50	7	5.0	35	- 36.4
Cin/BW Teal	1,007	50	504	5.0	2,520	- 23.9
Shoveler	<u>85</u>	<u>55</u>	<u>47</u>	<u>5.5</u>	<u>259</u>	<u>- 30.4</u>
Subtotal	2,220	40%	891	5.3	4,719	- 22.5%
<u>Divers</u>						
Redhead	882	60%	529	5.3	2,804	- 2.9%
Canvasback	11	60	7	5.3	37	+ 23.3
Lesser Scaup	1					
Ruddy Duck	<u>512</u>	<u>60</u>	<u>307</u>	<u>4.5</u>	<u>1,382</u>	<u>+ 8.0</u>
Subtotal	1,406	60%	843	5.0	4,223	+ 1.1%
TOTAL DUCKS	3,626	48%	1,734	5.2	8,942	- 12.9%
COOTS	2,275	75%	1,706	4.0	6,824	- 12.6%

In regard to the divers, redheads were 8% lower than 1970, while canvasbacks and ruddy ducks increased 10% and 6%.

Duck nesting was two to four weeks later than normal. The first brood of mallards was seen May 18. Broods were not abundant until the first week of July.

The table on page 9 summarizes the method of estimating production. Breeding pairs are multiplied by the reproductive rate to obtain the number of broods produced. These are multiplied by the average brood size to determine total estimated production.

Fall Migration. Weather was mild and had little influence on migration until December. Around December 8, impoundments froze over and remained frozen through the end of the year. Duck numbers dropped to 320--the lowest population since 1961.

The fall buildup of ducks began the last week of July with early migrating pintail. Total duck numbers peaked during October 10-16, about a week later than normal. Individual species peaked over a wide span, from mid-September for gadwall, pintail, and cinnamon teal to late October for mallard, green-winged teal and ruddy duck. Other species peaked between these dates.

Duck use was quite low on the Management Area. The lack of feed was probably a major factor. Green-winged teal and some diver ducks that normally use Stillwater were found on areas off the Management Area, particularly at the Carson Lake. The Humboldt Sink also had exceptionally good water conditions and held birds which would otherwise probably used Stillwater. The peak for the fall migration was 123,465 ducks. Principal species were pintail, shoveler, green-winged teal and widgeon. Use by all species was down from last year, except pintail which increased about 21%. Total use for the September through December period amounts to 7,932,500 use days. This was 30% below last year and the lowest since 1966.

Coots. Coots were again plentiful in the marsh. Spring use was similar to last year. Fall use was down considerably. The peak of 61,290 was 27% below last year's peak. Total use was 43% below 1970. High use at Humboldt Sink accounted for Stillwater's loss.

Production was estimated to be 6,824. This was 13% lower than the "bumper crop" produced last year.

These birds, especially the young, provide enjoyment for the public. Now, if we could only get more interest from the hunters!

Water and Marsh Birds. Western grebes arrived in late February while eared grebes' courtship activities were noted early in April. Summer grebe populations and production appeared to be normal. Most birds had departed by early November.

White pelicans arrived about the same time as last year, on March 9. Use in the marsh was low until late July when the birds produced on Anaho Island began feeding in the marsh. The last pelican of the year was seen December 1.

More great blue herons nested in trees along the East Canal. They first used this site last year when 3 nests were constructed. This year, 22 nests were counted. Disturbance to the birds is reduced and reproductive success should be higher since the herons moved into the refuge.

White-faced ibis were seldom seen at Stillwater until birds produced on Carson Lake began moving around. No production occurred on Stillwater Wildlife Management Area or the Canvasback Gun Club. Production was again checked on Carson Lake. On May 18 some nests contained eggs. Norman Saake, Nevada Fish and Game, from an aerial census on June 4 estimated 250 nests in the colony. This was considerably less than the 600 nests estimated last year. Another ground check on June 16 revealed all stages of production, from eggs in nests to young nearly able to fly. Clutches averaged four eggs per nest, but up to seven per nest were found. Several thin-shelled eggs were crushed. Others had thin-shells but had hatched.

Shorebirds, Gulls, Terns. Killdeer, yellowlegs and marbled godwits arrived in February. Other shorebirds, generally, arrived early in April. The bulk of the migration occurred later the same month.

An unusual occurrence this spring was the appearance of 200 black-bellied plovers. They were present on pastures south of Fallon for about a week. Usually only 3 or 4 are seen in the valley.

Willetts are occasional visitors to Stillwater. Two were seen in April, and one in late July.

No complete information on production is available due to reasons explained elsewhere in the report.

Fall departure dates were similar to last year. Black-necked stilts were last seen October 1; avocets, late November, and long-billed dowitchers on December 1.

While checking ibis production on Carson Lake, we discovered a nesting colony of Franklin's gulls. They were not known previously to nest in the valley. The colony consisted of 200+ adults.

Biological Technician Duffney reported finding about 20 Forster's tern nests on Lead Lake. They were located east of South Lead Lake Boat Landing on mats of hardstem bulrush.

Mourning Doves. Dove use is limited on the Management Area. No bird concentrations were noted. Some production occurs in the trees and also greasewood and shadscale.

B. Upland Game Birds

Upland game habitat continues to be minimal. Most use is related to adjacent private farmland. Principal use occurs along the Carson River, Timber Lake, portions of Indian Lakes and the Paiute Pasture.

Population estimates are extremely general. Ring-necked pheasants probably numbered around 40 birds at the end of the year. California quail are more abundant, numbering about 500.

C. Big Game Animals

The only big game on Stillwater is the mule deer. A small herd exists around Timber Lake and along the Carson River. The only sightings in this area were 8 does and 2 fawns.

Several deer observations were made in Stillwater Marsh which is quite unusual. Five deer were seen in the refuge along Hunter Road. On another occasion, Foreman Glano saw a doe and fawn near the duck hospital. Another report was of two deer in the Nutgrass Unit, close to Conradt's Landing.

Possibly the increased public use activity around Timber Lake is forcing the deer out of that area.

D. Fur Animals, Predators, Rodents and Other Animals

Fur Animals. The muskrat is the only fur animal found on Stillwater.

This year an economic trapping program was used to determine the muskrat population. Specific units were selected to sample the various habitat types. The trapper was required to record on a map the areas that he trapped in addition to the number of trap nights along with the number of muskrats caught.

Total muskrat numbers were estimated by the following method:

$$\text{Acres Trapped} \times \text{No. Muskrats Caught} \times 2^* = \text{Total 'Rats Present On Sample Area}$$

$$\frac{\text{Total 'Rats On Sample Area}}{\text{Acres On Sample Area}} = \text{Density ('Rats/Acre) of Habitat Type}$$

$$\text{Density ('Rats/Acre)} \times \text{Total Acres Of Habitat Type} = \text{Total No. 'Rats In Habitat Type}$$

The total number of 'rats in each habitat type are added to obtain the muskrat population for the entire Management Area.

* Estimated that 50% of 'rats on the sample area were caught. Actually, the percentage caught is unknown, but is probably much lower than 50%. Using 50% should result in a fairly conservative estimate.

The estimate of the total number of muskrats is 11,250. It is felt that this method has Class "C" reliability. This population estimate is considerably higher than last year's estimate of 2,500. That estimate was obtained from transect counts of houses, burrows, and feeding platforms. We feel the new method is more reliable for Stillwater.

Predators. No sightings were made of raccoons, badgers, kit fox or weasels this year. Apparently skunks still have not invaded the marsh although they are abundant on the farmland only 10 miles away.

Coyotes continue to be common on the Area. In conjunction with the reporting period of the NR-4, the fall population of 1970 was estimated to be 175+. This is the highest period of use during the year. Numbers drop to the year's low prior to whelping. The population at that time was estimated to be 30. The population during 1970-71 was judged to be somewhat higher than 1969-70.

Recreational varmit hunters shot an estimated 20 coyotes. Refuge personnel removed an additional 20 coyotes.

Rodents. Antelope ground squirrels and kangaroo rats are the most commonly seen rodents on the Management Area.

Biological Technician Duffney discovered a porcupine in a cottonwood tree at the Carson Sink. After a search through past records, it appears that this is the first observation of this species on the Area.

Rabbits. No surveys were conducted this year. Blacktail jackrabbits appear to be similar to last year's population, which was quite low. Cottontail rabbits remain low in abundance.

E. Predaceous Birds

Eagles. Bald eagles were more abundant this year. The spring peak of 4 birds exceeded the 2 birds of last year. They departed March 15, similar to 1970's March 16. In the fall, the first bird was seen November 26, which is normal. Nearly half the observations were of immature birds.

Most of the golden eagle sightings were between October, 1970, and February this year. One nest was discovered on May 24. It had two partially feathered fledglings. The location was about 1½ miles southwest of the bridge crossing the Carson River to Leter Reservoir. The site was the top of a dead cottonwood tree near a slough and adjacent to high sand dunes.

Hawks. Rough-legged and marsh hawks are common, with fewer red-tailed and sparrow hawks present during the winter months. Sparrow hawks are the most abundant nester, but red-tailed, Swainson's and marsh are also common.

There were six observations of ospreys in the valley between March 28 and June 10, however, none were seen on the Management Area.

Owls. Short-eared owls are common in the marsh during winter months and a few stay to nest. Barn owls can occasionally be seen in the marsh vegetation around Lead Lake. Great horned owls can be found in the timbered areas along the Carson River. Burrowing owls are scattered over most of the Management Area from March through September.

Ravens. These birds are common throughout the year, but most abundant late in summer and through the fall. They continue to be a major predator of waterfowl nests.

F. Other Birds

Nothing unusual to report.

G. Fish

Nevada Department of Fish and Game planted 3,600 brown trout (8-9 inches long) in Upper Lake on October 7. This adds wider variety to Stillwater's fishery. Bass and crappie fishing was spotty this year. Good catches of channel and white catfish were taken this year in Indian Lakes and Stillwater Marsh. Quite a number of 3-5 pound catfish were taken, as attested by Clerk Mrs. Cress. A 14-pounder was caught at Stillwater Marsh by a Reno man. A new State record was made when a Reno woman caught a 1 pound, 10 ounce, black bullhead at Stillwater Marsh.

Carp are abundant in most ponds. They are probably a major cause for decreased aquatic plant growth. By draining Upper Foxtail Lake, a large number of carp were killed. No chemical control was done this year.

H. Reptiles and Amphibians

Reptiles. The only unusual occurrence was the appearance of a rattlesnake at the refuge shop. This is the first sighting on the Management Area for many years.

Amphibians. Leopard frogs are fairly common and bullfrogs are found mostly in Indian Lakes and Lead Lake. A few people fight the mosquitoes in search of these delicious delicacies.

I. Rare and Endangered Species

The prairie falcon is listed as Status Undetermined. It is present on Stillwater from October to March. Its numbers remained fairly stable over the past several years. Usually, no more than two birds are seen on a trip through the Area.

J. Disease

No botulism occurred on Stillwater this year. A small outbreak did occur on Carson Lake in September, but involved probably less than 2,000 birds. Sick birds were taken to Stillwater's hospital facilities where they were cared for until they recovered.

III DEVELOPMENT and MAINTENANCE

A. Physical Development and Maintenance

The new signing program was completed this year. Seven new signs were built and erected; three at the Three-Way Structure (No. 16) and four at the Four-Way Structure (No. 5). For a contrast between the new and the old, see the photo section.

Three existing parking areas were enlarged prior to the opening of the waterfowl season. Goose Lake Landing was enlarged to about four times its former capacity and a new double width boat launching ramp was poured. Parking facilities at Conradt's Landing were increased threefold, but proved to be inadequate as 67 rigs overflowed the area opening day of the waterfowl season. A new parking area was built across the road to the south of the existing Pintail Bay parking area. Much more of this type work is required before we will be able to adequately handle the opening day madhouse.

Repaired and ripped washout at the outlet structure of Cottonwood Lake;

Built a new welding cart;

Built a new steel storage rack;

Built new shop cabinets;

The honey wagon was rebuilt and changed from a slip-on unit to a trailer unit;

The 13 window panes broken by hail were replaced;

The spray rig was rebuilt and converted from a slip-on unit to a trailer mounted unit;

Vegetation was cleared from in front of all the boat landings.

A sunshade was built on the end of the shop. For years any heavy equipment repair work was accomplished under very adverse conditions. In the summer, wrenches and equipment would get so hot from the sun beating down that they couldn't be handled without gloves. The sun shade is crude, but a big improvement over nothing at all.

The following canals and drains were cleaned during the year:

Paiute Canal
West Canal
Hunter Drain

The following canals were chained to remove vegetation which impedes the water flow:

Paiute Canal
West Canal
East Canal

Remodeled display cases at Churchill County Museum and changed the wildlife display.

Repaired dikes in East Pasture.

Irrigated the Paiute and East Pastures several times during the season.

Had to rebuild the big main gate at the Work Center after vandals scaled the fence and used one of our vehicles to batter the gate down.

Chemical toilets were moved in the spring for use by fishermen and again in the fall for winter use.

A stock rack was built on the 1-ton GSA vehicle for use by the Biological Technician.

The airboat trailer was rebuilt and beefed up to where it was adequate for the load it was intended to carry.

Additional pasture gates were built and hung.

All fence lines were checked at least once and needed repairs were performed.

Structures 33 and 34, pipe with flashboard risers, were installed completing the Goose Lake Bypass. Water was turned in and the entire development functioned very satisfactorily.

Only 44 days were spent grading the 55 miles of refuge roads. Time that should have been spent on road maintenance was spent trying to keep a worn out motor patrol operating. Consequently, our roads are in the worst shape they have ever been in.

All 55-gallon trash barrels were gathered and repainted prior to opening of the waterfowl season.

All chemical toilets were pumped numerous times throughout the year.

Trash barrels were emptied on a weekly basis for nine months of the year.

All equipment was serviced and repaired as necessary.

Made major property inventory.

B. Plantings

No plantings were made this year. Two youth groups have asked for conservation projects and we have suggested they get trees from the State Nursery for planting in Indian Lakes.

C. Collections and Receipts - None

D. Control of Vegetation - None

E. Planned Burning - None

F. Fires - None

IV RESOURCE MANAGEMENT

A. Grazing

Since the major amount of forage is provided by annuals, the amount of forage produced is influenced by the amount and time of precipitation. The year 1971 was a good year and livestock at summer's end were in excellent shape.

Twice during the year we were forced to use the court order against Robert Erb. In February, we gathered seven head of his cattle and sold them through a local sale yard. In May, we gathered six horses and put them through the sale ring. Later, the United States Attorney decided that the court order only applied to cattle (bovine). Now we are trying to determine how many cans of pet food are represented in the six head. Apparently, we are open for suit if--and when--Mr. Erb learns of his loss. On advice of the United States Attorney, we are saying nothing and doing nothing.

The permittee's Bull Committee functioned well this year and, as a general rule, a little better quality bulls were turned out.

A grazing rate survey was conducted this year and bore out what we felt: That rates here are ridiculously low. We plan to increase our rate from 50¢ to \$1.00 per AUM. We also plan to eliminate the reduced winter rate that has been in effect for many years.

Truckee-Carson Irrigation District still wants us to increase the grazing. Our answer--as in the past: Get us more water and we will!

One of the biggest handicaps in the past, both to managers and permittees, has been the lack of a Policy Statement. Decisions have been based on each manager's idea of how the program should be run, or on how persuasive a permittee was. We are presently working on a Policy Statement that will be generally agreeable to the permittees and that can carry the signed endorsement of the three parties involved in the management of this Area: Nevada Fish and Game Commission, Truckee-Carson Irrigation District and our Service.

Grazing summary for the past three years is as follows:

	<u>1969</u>	<u>1970</u>	<u>1971</u>
Number of Permittees	22	21	19
Number of Cattle	2,376	2,199	2,208
Number of Horses	80	62	62
Revenue	\$ 9,802	\$ 10,695	\$ 11,197

B. Haying - None

C. Fur Harvest

One trapping permit was issued for 1970-71 to Donald Austin. Initially, the permit was issued for 1,000 muskrats but as the trapping progressed, it was apparent that another 1,000 could be taken and the permit was so amended. Mr. Austin succeeded in taking 1,412 muskrats. The division was 75% trapper; 25% Government. Our 353 'rats broke down as follows:

<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Total</u>
334	Average 1's and 2's	\$ 1.15	\$ 384.10
<u>19</u>	Damaged	.35	<u>6.65</u>
353			\$ 390.75

Both permittee's and our furs were sent to Joseph A. Garcia & Sons, Hollister, California.

For the 1971-72 trapping season Mr. Donald Austin is again our permittee and his permit calls for 2,000 muskrats and 50 coyotes. This year's division on muskrats is 80% to the permittee and 20% to the Government. Permittee to keep all coyotes. In turn, permittee will ship all furs and buyer will reimburse us direct for our share. Mr. Austin sent in some furs in December and grading and price was as follows:

<u>No.</u>	<u>Description</u>	<u>Unit</u>	<u>Total</u>
569	Average 1's and 2's	\$ 1.25	\$ 711.25
<u>52</u>	Damaged	.40	<u>20.80</u>
621			\$ 732.05

Government's share - \$ 146.41

With this shipment, Mr. Austin also sent in 11 coyote hides: 10 were average 1's and 2's and brought \$9.00 each and 1 rubbed hide that brought \$3.50.

Like all grazing receipts, fur harvest receipts are turned over to Truckee-Carson Irrigation District.

We find this method of administering our trapping much easier than the old division of furs and shipping separately. If you have an honest trapper, this is the only way to go.

For the background and biological implications of the trapping program, see Section V, Field Investigations and Applied Research, in the 1970 and 1971 Narrative Reports.

D. Timber Removal

Several free use permits were issued for cutting dead and down cottonwoods on the lower Carson River. This has been abused and we are searching for ways to better supervise the wood cutting or eliminate it entirely.

E. Commercial Fishing - None

V. FIELD INVESTIGATION or APPLIED RESEARCH

A. Wildlife Management Study 1 - Duck Nesting Success on the Stillwater Marsh

The proposed three-year study concluded with 1970's nesting season. The larger raven population during the third year increased nest predation significantly. Biologist Napier requested that he be allowed to continue the study for another year. Due to extremely alkaline condition, little can be done to improve nesting habitat, but he felt he could demonstrate increased nesting success by controlling the raven population. His request was denied by the Regional Office, so the three years' investigations are not conclusive. Indications are very strong that by controlling predators, particularly ravens, nesting success could be improved--but data could not be collected to verify this.

The final report of the study has not been written yet due to other higher priorities--refuge objectives and program scheduling, for examples.

B. Banding

No banding was done by refuge personnel. Nevada Department of Fish and Game banded toward quotas for western Nevada. Norman Saake worked at Fernley Wildlife Management Area for spring banding, but switched to Stillwater Marsh for the preseason quota where higher concentrations of pintail were present on Pintail Bay.

Unusual band returns received during the year are listed on Page 21.

C. Shorebird Study

Don Knapp, Division of Wildlife Research, continued his study of avocet and black-necked stilt productivity. No progress reports have been received during the three years of his study.

D. Muskrat Live-Trapping and Marking Program

As an experiment, marked released muskrats in conjunction with fur trapping were used to obtain population data. Ninety live traps were obtained from Division of Wildlife Services. Manpower was through the NYC Program. Two Indian boys, Frank Gonzales and Clyde Miller, worked for the refuge and Division of Wildlife Services during the summer. We were also assisted by James French, who contributed much time--at no pay, just for the experience. Size #1 ear tags were placed on captured 'rats.

The operation was not very successful. The boys trapped a total of nine nights between June 17 and July 9. The number of trap-nights is unknown for the number of traps set varied from 25 to 90. Trapping was confined to South Nutgrass Unit and Lead Lake, areas of highest muskrat concentrations. In South Nutgrass, trapping was centered in one bay on the west side. Most 'rats were caught here. Most of Lead Lake was surveyed with little success.

A total of 36 muskrats was tagged and released. The sex ratio was nearly equal, 19 males:14 females and 3 unknowns. The age ratio appeared overbalanced toward adults, being 17 adults:19 immatures. Some immatures were quite small so their activity may have been restricted and would not be as likely to be trapped. Muskrats had not been trapped for many years in Stillwater Marsh and this would tend to maintain a higher adult population. Fur trapping did occur the previous winter, but probably had not affected population age ratios yet.

Although the sample of 36 tagged 'rats is quite small, most were concentrated in one pond. The fur trapper, so far in the 1971-72 season, has removed 350 'rats from South Nutgrass Unit without catching

<u>SPECIES</u>	<u>BANDING SITE</u>	<u>RECOVERY SITE</u>	<u>REMARKS</u>
Canada Goose	Stillwater Wildlife Management Area 06-14-57	Stillwater Wildlife Management Area 12-12-70	Age - 13 years when shot
Cinnamon Teal	Stillwater Wildlife Management Area 09-05-64	Lake Maracaibo, Venezuela 01 - 71	
Pintail	Stillwater Wildlife Management Area 09-03-68	Houma, Louisiana; 11-26-70	
Pintail	Stillwater Wildlife Management Area 07-26-66	Apuka, U.S.S.R 60°30'N - 169°38'E 05-25-68	
Pintail	Stillwater Wildlife Management Area 03-15-67	Ust-Kamchatka, U.S.S.R 56°11'N - 162°20'E 09-10-68	

a tagged one. This appears to indicate that the population is very dense, or else the tagged muskrats have dispersed widely.

VI PUBLIC RELATIONS

A. Recreational Uses

Visitor use data is obtained from traffic counters and checks of activities. Most of the visitor-contacts come at the waterfowl check station. Additional contacts during the year are necessary to obtain more accurate distribution in types of recreation and also activity hours. The annual summary of use appears on the following page.

Total visitors, 24,932, increased 26% over last year. Hunting and fishing accounted for nearly all the increase. About 11% more waterfowl hunters used Stillwater this year over 1970. Warm, mild days brought the fishermen out earlier this spring. Word spread about the good catches of catfish. The result was that the fishing activity was up 61% this year.

Non-consumptive use, while much smaller than the above activities, also climbed higher than last year. Wildlife observation increased 24%. Camping is mostly related to waterfowl hunting and fishing to a smaller degree. It was up 35%. Picnicking is largely related to fishing and increased a whopping 444%.

The peak load day was the opening day of duck hunting. Use is climbing steadily, a 36% increase. This year's peak was 1,494 hunters compared to 1,100 in 1970 and 775 in 1969. The hunter capacity on this weekend has nearly been reached. Nevada Fish and Game has been alerted that some controls will be necessary in the very near future. The use pattern is the same as past years. The only problem is accommodating hunters on opening weekend. After that, use remained far below capacity.

B. Refuge Visitors

<u>Name</u>	<u>Affiliation</u>	<u>Purpose</u>	<u>Date</u>
F. Groves	NF&G, Reno	TCID Meeting	1/7/71
J. Greenley	NF&G, Reno	TCID Meeting	1/7/71
M. Thornton	Sheldon Refuge	Visit	2/11/71
E. Koss	Sheldon Refuge	Visit	2/11/71
C. Donner	Arapahoe Refuge	Visit	2/23/71
D. Bigler	U of N, Reno	Area Use	3/9/71
G. Little	U of N., Reno	Area Use	3/9/71
E. Klett	BSFW, Portland	Range/S&M Tour	4/6/71
C. Stutzman	RBS, Washington, DC	Economic Study	4/7/71
W. Weist	RBS, Sacramento	Economic Study	4/7/71
R. McVein	BSFW, Portland	Task Force Study	4/26/71

ANNUAL MONTHLY RECREATIONAL USE REPORT

Refuge name
 STILLWATER
 State
 NEVADA

State Code 28 (1-2) Congressional District Code 00 (3-4) Refuge Code 147 (5-7) Report Yr. 71 Mo. 1 Period 71 Y YK (8-11)

(Card Columns). (12-13) (14-18) (19-25)				(Card Columns). (12-13) (14-18) (19-25)			
ACTIVITY	Code	VISITS FOR THE MONTH YEAR		ACTIVITY	Code	VISITS FOR THE MONTH YEAR	
		Total Number	Total Hours			Total Number	Total Hours
Hunting:				On-Site Programs	22	15	90
Big Game	01			*Miscellaneous Wildlife	23	347	103
Upland Game	02						
Waterfowl	03	10,331	57,270	Swimming	24	135	255
Other Migratory	04			Boating	25		
Other	05	271	1,343	Water Skiing	26		
Bow	06			Camping	27		
Fishing:				Group Camping	28		
Salt Water	07			Picnicking	29		
Warm Water	08	8,323	25,462	Horseback Riding	30		
Cold Water	09			Bicycling	31		
Environmental Education	10	1,145	92	Winter Sports	32		
Wildlife Photography	11	104	320	Fruit, Nut and Vegetable Collecting	33		
Wildlife Observation	12	2,867	7,235	*Miscellaneous Non-Wildlife	34	1,447	6,122
Conducted Programs	13	15	90	Peak Load Day	35	1,494	
Field Trials	14			Actual Visits	36	24,932	
Wildlife Trails	15						
Wildlife Tours/Routes	16	27	185	Fee Area Use	37		
Visitor Contact Stations	17			Number of Fee Areas	38		(14-18)
Camping (wildlife related)	18	2,026	29,946	Fee Collections	39	\$ 20.00	
Picnicking (wildlife related)	19	2,668	2,668	Collection Costs	40	\$	
Wildlife Interpretive Center	20						
Off-Site Programs	21	204	433				

23. Hunting and fishing inquiries

34. Rockhounding

<u>Name</u>	<u>Affiliation</u>	<u>Purpose</u>	<u>Date</u>
S. Smith	BSFW, Washington, DC	Area Tour	4/27/71
J. Findlay	BSFW, Portland	Area Tour	4/27/71
J. Good	Hart Mountain Refuge	Area Tour	5/8/71
J. McNeeley	U of N, Reno	Water Data	6/17/71
D. Beeler	U of N, Reno	Water Data	6/17/71
T. Horn	BSFW (Ret.)	Visit	6/25/71
L. Wenzel	BR, Sacramento	Area Tour	7/21/71
B. Hunter	California F&G	Botulism Data	8/5/71
B. Clark	California F&G	Botulism Data	8/5/71
B. Heckathorn	SCS, Carson City	Pasture Acreage	9/20/71
C. Miller	GSA, Reno	Motor Pool Data	10/5/71
E. Klett	BSFW, Portland	RBU Review	10/5/71

Not included in this list of visitors are somewhat frequent visits made by Nevada Fish and Game and Division of Wildlife Services personnel. The usual run of other office visitors including permittees, information seekers, salesmen, job hunters, etc., were also contacted.

C. Participation

January 7 Aldous, Frank Groves, Joe Greenley, Ray Corlett, Nevada Fish and Game, met with Directors of Truckee-Carson Irrigation District to discuss management of Stillwater Wildlife Management Area.

January 29-30 Napier attended the Western Section, The Wildlife Society, meeting in Sacramento, California.

February 3 Aldous attended the noon meeting of the Conservation Forum in Reno.

 Aldous and Duffney met with the grazing permittees relative to administration of grazing program.

 Napier attended a Community Meeting regarding the need for publicizing multiple use of water in Lahontan Valley.

February 15-18 Aldous attended National Meeting of American Society for Range Management in Reno.

March 2 Napier attended Community Meeting where a presentation by Allen Dunn of Reno set forth the need for a TV documentary about Lahontan Valley publicizing the multiple use of water in the valley. Various methods for raising funds to cover filming was discussed.

- March 3 Aldous attended the noon meeting of the Conservation Forum in Reno.
- March 15 In recognition of National Wildlife Week, Napier prepared a display for the bulletin board in front of the office and one for the Churchill County Library. No one attended the advertised program which had been prepared for the evenings.
- March 16 Aldous attended the Governor's Natural Resources Council meeting in Carson City. This meeting turned out to be the last one for this group. Nevada's new Governor O'Callaghan disbanded the group at this time.
- March 25 Napier conducted a Wildlife Class of Oregon State University on a field tour of the Area.
- March 29-30 Aldous and Napier attended the annual Nevada Refuges-Fish and Game meeting in Reno.
- April 7 Napier attended Churchill County Sportsmen meeting.
- April 16 Aldous attended Nevada Fish and Game Commission meeting in Reno. New regulations for the Stillwater Area were discussed.
- April 17 Aldous and Napier conducted a tour for the Lahontan Audubon Society over the Stillwater Area.
- April 18 Aldous and Napier met with the Board of Directors of the Canvasback Gun Club to discuss mutual problems.
- April 27 Acting Director Spencer Smith and Regional Director Findlay were conducted on an aerial inspection of Anaho Island, Lahontan Reservoir and Lahontan Valley. We were greatly assured as a result of Mr. Smith's very positive feeling that Stillwater was worth fighting for.
- May 3 Aldous and Napier met with local sportsmen to discuss proposed regulations for Stillwater.
- May 5 Aldous attended noon meeting of the Conservation Forum in Reno.
- Aldous in afternoon talked to natural resources graduate seminar at University of Nevada on "Pyramid Lake and Lahontan Valley - Resource Values in Conflict."

- May 12 Aldous accompanied Frank Groves and Ray Corlett of Nevada Fish and Game on inspection trip of public use facilities at Stillwater.
- May 19 Napier gave a talk to a group of Boy Scouts regarding an overnight campout in the Marsh.
- May 21 Aldous attended the noon meeting of the Churchill County Resource Action Council held in Fallon.
- June 4 Aldous attended Nevada Fish and Game Commission budget meeting in Reno.
- June 7-12 Aldous was counselor and instructor at Nevada Range Camp for Boys at Paradise Valley, Nevada.
- June 15 Aldous presented a slide talk on Desert Bighorn Sheep to Fallon Rotary Club.
- Napier gave a talk "Wildlife Conservation" at the LDS Church to a group of seven Eagle Scouts.
- July 4 Aldous got stuck with job of Rodeo Chairman for Fallon Kiwanis Club. Financially it was a success and a beautiful silver belt buckle from the Club was the reward for giving up a week of annual leave to put the show together.
- July 20 Aldous attended Churchill County Resource Action Council Meeting in Fallon.
- July 21 Aldous accompanied Lou Wenzel, Bureau of Reclamation, on an inspection of Stillwater Area.
- July 25 Aldous was interviewed for a newspaper supplement on recreation in Lahontan Valley. Four of these on different subjects related to Lahontan Valley appeared in the Reno paper during the year. Our local County Agent, Charlie York, received a large plaque and a nice cash award for instigating the program.
- August 1-3 Aldous and Napier attended Systems Workshop in Portland.
- August 5 Aldous accompanied Brian Hunter and Bill Clark, California Fish and Game, on an inspection trip of botulism sites in Lahontan Valley.
- September 8 Napier gave a presentation regarding Pyramid Lake Task Force to Nevada Organization for Wildlife (NOW) in Reno.

- September 23 Aldous talked to ten Cub Scouts.
- October 4 Aldous gave Captain Muncie, Commanding Officer of the Fallon Naval Air Station, a tour of the Stillwater Area.
- October 6 Aldous talked to Natural Resources Class at University of Nevada, Reno, on Refuge Water Problems.
- November 3 Aldous and Napier, FWS; Corlett, Nevada Fish and Game; Wood, Truckee-Carson Irrigation District, were interviewed for a feature story on Lahontan Valley waterfowl values.
- November 8-12 Aldous and Napier attended Systems Workshop in Reno.
- November 12 Napier attended Pyramid Lake Task Force hearing in Reno.
- November 16 Aldous and Napier met with Frank Groves, Fred Wright, Ray Corlett, Sam Millazzo, Joe Greenley and George Tsukamoto, Nevada Fish and Game regarding crowded conditions at Stillwater on opening weekend of waterfowl season.
- November 22 Aldous gave slide talk to Hawthorne Kiwanis Club on Desert Bighorn Sheep.
- December 1 Duffney gave a talk regarding fish and game regulations to a new squadron at the Fallon Naval Air Station.
- December 21 Aldous and Napier met with Truckee-Carson Irrigation District, Bureau of Reclamation and Geological Survey personnel relative to a monitoring program to measure changes as less water is received as a result of implementing recommendations of Pyramid Lake Task Force.

During the year, Aldous and Napier attended fourteen meetings of the Betterment Studies Committee and the Pyramid Lake Task Force.

After serving as Vice President of the Fallon Kiwanis Club during the 1970-71 Club Year, Manager Aldous succeeded to the job of President as of October 1, 1971. It is a challenging and rewarding experience.

D. Hunting

Nearly all of Stillwater's hunting activity centers around waterfowl. A small amount of coyote hunting takes place during winter months. The waterfowl season was only fair because of fewer ducks using the

Management Area this year. Despite poor success, the number of hunters increased over last year. Even after the marsh was frozen over and most birds had left, hunters persisted in coming out.

The duck season opened October 2 and ran through January 2, 1972. Goose hunting opened two weeks later, October 16, and closed January 16. Whistling swans were hunted in the Lahontan Valley, by permit, from November 6 through January 2. The duck limit was 6, with a restricted limit of 2 canvasbacks.

Nevada Department of Fish and Game operated a check station on weekends through the duck season. Biologist Napier assisted the first two weeks of the season when pressure was greatest.

Average hunting success for the season was 1.6 birds, which is below last year's 1.8. Success was highest on opening weekend when it reached 2.4 birds per hunter.

The bag principally consisted of green-winged teal, pintail, cinnamon teal, shoveler, gadwall and mallard. Divers, like redheads, canvasbacks, and ruddy ducks, dropped significantly in the bag. Although the canvasback numbers were down, the reduction from a full limit last year to only two birds this year was a major cause of the smaller harvest of this species. The largest increase in the bag was cinnamon teal. They usually comprise a minor part in the bag--10th place last year--but rated third in this year's total.

Few swans were taken because of the small population present this fall. Only 23 swans were brought through the check station, compared to 79 last year. The final harvest data on the 500 permits issued by Nevada Fish and Game is not available yet. This was the first year when applications for swan permits exceeded the 500 available--a total of 509 applications was received.

The increased number of hunters using Stillwater is presenting an immediate problem. Total use for the season was 10,326 hunters, about 11% higher than last year. This is not a problem. The marsh can accommodate more hunters throughout the season, except on opening weekend. On opening day, 1,494 visitors hunted on Stillwater Wildlife Management Area. Average density was one hunter per 8.6 acres of marsh, which exceeds the Bureau quality standard of 10 acres per hunter. Most facilities are overcrowded, yet use on all other weekends of the season is at least 75% less than opening weekend. It is impractical to provide facilities for the mass of hunters for one weekend, knowing that most of the facilities would be unused the rest of the year.

This influx of hunters for only opening weekend is not new, but has occurred over the past years. The increase for this weekend in 1971 was only 6% over last year. However, the problem is that capacity has been reached. Several meetings with Nevada Department of Fish and Game, who manage the hunting program, have been held to alert them to the

problem. It appears that some type of restrictions are necessary for opening weekend. These would be expensive, both in funds and manpower. Under the current budget and personnel limitations, any restrictions seem nearly impossible to put into operation.

Several hunting activity problems have arisen that can be controlled. Two or three all-terrain vehicles have been used in the marsh for several years. While their numbers are few, damage to the marsh can be easily seen. Before use is established any longer--when it would be difficult to regulate against--their use should not be permitted in the marsh.

Airthrust boats have presented a problem. Several were equipped with running lights, and began going to blinds in the marsh about 2:00 a.m. opening day. By shooting time, most of the birds were driven from the marsh back into the refuge. Other airboats operating in a similar manner during daylight hours caused similar results.

E. Violations

Most of the law enforcement in Stillwater is provided by Nevada Fish and Game. Biological Technician Duffney has been given State game law enforcement authority. On opening weekend of duck season, four US Game Management Agents worked Stillwater Marsh.

Nevada Fish and Game supplied the following list of citations for violations on Stillwater during the year. Earl Dudley is a conscientious, hard working warden from Fallon, Norman Saake is a Nevada Fish and Game biologist stationed in Fallon, and Cliff Meiss is an enforcement officer from Reno. John Wendler and Tom Harper are US Game Management Agents. John is located in Reno, and Tom was recently assigned to Las Vegas.

<u>Officer</u>	<u>Name</u>	<u>Violation</u>	<u>Disposition</u>
Meiss	A. L. Lawrence Sun Valley, NV	Littering and dumping	*
Dudley	Buddy Jones Fallon, NV	Loaded gun in vehicle	\$50.00
Dudley	E. L. Borreson Sparks, NV	Hunting, unplugged gun	\$50.00
Saake	E. R. Klosterman Reno, NV	Possession of swan w/o tag	\$50.00
Saake	Kim O. Neal Hawthorne, NV	Overlimit of canvasback	\$50.00

* It cost Lawrence \$200 to remove vehicle from Stillwater. Court felt the fine was covered by this. (See Items of Interest)

Meiss	T. L. Hutchings Reno, NV	Possession of protected birds	\$50.00
Meiss	Peter Ivovic So. Tahoe, CA	Killing protected bird	\$50.00
Dudley	Dorothy Blair Madera, CA	Fishing without license	\$50.00
Dudley	J. A. Sprochnle Tahoe City, NV	Hunting prohibited hours	\$50.00
Dudley	L. P. Polini Santa Clara, CA	Hunting prohibited hours	\$50.00
Dudley	R. O. Johnson Reno, NV	Unplugged shotgun	\$50.00
Dudley	W. E. Dunlap Sausalito, CA	Hunting prohibited hours	\$50.00
Meiss	E. D. Williams So. Tahoe, CA	No boat registration	\$10.00
Meiss	Eugene Jack Fallon, NV	Hunting w/o license and duck stamp	\$50.00
Meiss	G. J. Miller Fallon, NV	Hunting ducks w/o stamp	\$50.00
Wendler	C. L. Glosen Reno, NV	Loaded gun in vehicle	\$50.00
Wendler	M. D. Garcia Reno, NV	Hunting, unplugged gun	\$50.00
Harper	T. E. McClure Reno, NV	Hunting prohibited hours	\$50.00
Harper	L. E. Harwell Sparks, NV	Hunting prohibited hours	\$50.00
Dudley	P. C. Neuffer Reno, NV	Loaded gun in vehicle	\$25.00

F. SAFETY

Manager Aldous, Clerk Cress and Foreman Olano were awarded First Aid Cards in July upon the completion of the Standard First Aid Course conducted by the Fallon Volunteer Fire Department.

At the close of the year, Stillwater's accident free days stands at 479 days. The same figure applies to days without a lost time accident.

VII OTHER ITEMS

Our 1970 Narrative closed with the statement that we were awaiting notification of disability retirement being awarded Maintenceman Ernest J. Brooks. The award of retirement finally came through, effective January 8, 1971.

The tag-end of February brought an accident to the Aldous household when young Dan Aldous was hurt in a spill from his Honda while "jumping" the levees in an alfalfa field. Dan lay unconscious in a Reno hospital for over a week. Slowly he recovered and was able to return to school after the first week in April.

During 1971 two Stillwater employees received length of Federal Service pins. In March, Operator General Coy C. Dyer completed twenty years; Biologist Napier, ten years in September.

From March 8 through 12 Biological Technician Duffney attended the Law Enforcement Workshop in Yakima, Washington.

The middle of June brought the discovery of a "stripped" automobile abandoned in the middle of the road at Lead Lake. The owner of the vehicle evidently figured it would be cheaper to leave the mired auto than to try to have it hauled out of the mud. He had taken the license plate hoping to remove any traceable identification. However, the dust accumulation between the license plate and vehicle plainly revealed the license numbers. A check with the Motor Vehicle Department gave us a Stead (Reno vicinity) address--from which our man had flown leaving no forwarding address. Later, while our crew was inspecting the vehicle with the problem of removal in mind, Foreman Olano found a bank deposit slip--which evidently had been used as note paper at the time the vehicle got stuck--advising, "We are back at the camper we just passed." This deposit slip carried a Sun Valley (Reno) address. Nevada Fish and Game Warden Meiss went to this address to cite the vehicle owner with "Littering and dumping". After having to call for reinforcements, Meiss finally served the citation. The Judge gave Mr. Albert Lee Lawrence the choice of removing the vehicle or paying a fine. Upon learning it had cost Lawrence \$200 to have the vehicle towed from the refuge, the Judge felt this cost sufficiently covered the matter.

On June 20, Mr. I. H. Kent called Biological Technician Duffney to report the gate to our Work Center was down. Upon inspection by Manager Aldous and Duffney, it was found someone had crawled over the fence, started one of our 4-WD pickups and used it as a battering ram to knock down the gate to the yard. They then drove the pickup around the side of the yard where, from evidence, their vehicle had stalled. Our pickup was used to push theirs to get it started, then returned to its place in

the lineup in the yard and the culprits left the area. Although local law enforcement authorities were alerted, no suspects were apprehended. Foreman Olano and his crew rebuilt the gate with iron pipe and he "just dares" anyone to try to batter it down now!

Wildlife Biologist Larry Napier received a Special Achievement Award of \$200 in July for the fine work he had done on the Pyramid Lake Task Force.

Jim French, a 1971 high school graduate from Reno, spent most of the summer working around the office. Jim is interested in wildlife management and absorbs all the instruction and assistance he can get. Ray Alcorn, Division of Wildlife Services, instructed Jim in various phases of wildlife censusing and enhancement. Jim worked with the NYC boys during the entire muskrat marking project--only they got paid and Jim did it "just for the experience". We were all impressed with Jim's terrific incentive and knowledge in wildlife management. He had as much knowledge as some of our student trainees with three years of college. Jim is taking his basic college requirements at the Community College in Elko, Nevada. We wish this young man much good luck!

A request was received the first week of July for the services of Biologist Napier in the Central Office for a work detail. His assignment was to assist in the development of the PPBE part of Refuges' Systems Management and help prepare the PPBE Handbook. Larry left Stillwater July 11 and remained in Washington until the 24th. After ten days at home he returned to Washington August 4, taking his wife with him. He completed his detail on August 27. Larry and Kathy say that Washington is a nice place to visit--but neither want to live there.

With budgets what they have been in recent years, new equipment has been out of the question. To bridge the gap, we secured two vehicles from the GSA Reno Motor Pool. This arrangement worked fine until we received a letter from GSA on September 8 which, in essence, said, "Join us 100% or return the vehicles." After some discussion with the local Motor Pool Manager, we decided to submit a "Form T-95" and see if higher authority would authorize a split fleet. For the uninitiated, T-95's are about as complicated and time consuming as Objective Setting, and both at the same time! The T-95 was submitted and, to date, we still haven't heard a word one way or the other.

Instead of having the usual no-host Christmas Party at one of the local "eateries", we decided this year to have a potluck dinner. Under the very able supervision of Nevada Fish and Game's Region I Secretary, Lucy Hargrove, we rented a hall and hosted approximately fifty Refuge and State personnel and their guests. An exchange of "fun" gifts added sparkle to the affair and everyone claimed this one to be our best party!

Small Tract Sales. The Bureau of Reclamation conducted small tract sales throughout Lahontan Valley this year. These were small isolated tracts deemed to be more appropriately in private ownership.

There were nine tracts in the Management Area totaling 760 acres. We also found a 40-acre tract we had been administering that was public domain and management was turned back to the Bureau of Land Management. In addition to the above, there are 720 acres proposed to be turned over to the Bureau of Indian Affairs so that local Indians can build their land base.

The loss of these lands was not detrimental as, actually, a reduction to between one-third to one-half of our present acreage would make this a better area. Then, perhaps, we could spend our time and money on wildlife and habitat rather than grazing and recreation.

ANAHO ISLAND NATIONAL WILDLIFE REFUGE

I GENERAL

A. Weather Conditions

Weather at Pyramid Lake was not significantly different from Stillwater.

B. Habitat Conditions

Water. The level of Pyramid Lake during the year is shown on the table below. Readings were supplied by U.S. Geological Survey.

PYRAMID LAKE LEVELS - 1971

<u>Date</u>	<u>Lake Elevation</u>
January 20, 1971	3793.20
February 24, 1971	3793.90
March 31, 1971	3794.20
May 6, 1971	3794.50
June 3, 1971	3795.40
July 6, 1971	3796.05
August 4, 1971	3795.90
September 2, 1971	3795.35
October 5, 1971	3794.10
November 5, 1971	3794.91
November 30, 1971	3794.84
January 4, 1972	3794.87

Lowest Level - January, 1971, at 3793.20

Highest Level - July, 1971, at 3796.05

Rise in Lake Level - 2.82 feet

Annual Change in Lake Level - Gain of 1.67 feet

Water Receipts January to December, 1971 - 531,600 acre feet

II WILDLIFE

A. Migratory Birds

Because of higher priorities of duties at Stillwater, refuge personnel made no trips to Anaho Island during the summer. Manager Aldous and Biological Technician Duffney did drive to the east side of Pyramid Lake and observe conditions on the island from that shore. A trip was made to the Island in October.

The only data on the colonial nesting birds were aerial photographs of breeding birds taken by the Division of Wildlife Research. Production from these breeding populations had to be estimated. Since Division of Wildlife Research concluded their pelican banding program last year, no visit was made to colony sites.

Water Birds. The white pelican breeding population was counted from ^{2,975} aerial photos. Birds were counted at nest sites. A total of ~~1,488~~ nests was estimated. ~~This is a decrease of 18% from last year.~~ Nesting success was estimated to be 80%, with 1.25 young raised per nest. Total production was estimated to be ~~1,490.~~ 2,980.

Double-crested cormorants nested at their usual site on the eastern shoreline. Production was estimated to be 496 nests with 60% success. Each successful nest was judged to produce 2.5 young for a total production of 740. This is about 25% less than last year.

Great blue herons continued to nest in greasewood. Production was estimated to be 185 from 50 nests.

Gulls and Terns. California gulls took up residence at their usual beach on the southeastern tip of Anaho Island. Production was estimated to be down 38% from 1970, with only 2,895 chicks produced from 1,931 nests.

No production data are available for Caspian terns.

B. Reptiles

While visiting the island in October, one adult rattlesnake was seen high on the mountain and two small ones, about 8 inches long, were found on the flat near the pelican nest sites.

V FIELD INVESTIGATIONS or APPLIED RESEARCH

Mr. Don Knapp, Research Biologist from the Davis, California, Station, spent some time on the island early in the breeding season. Don was looking for known-aged pelicans in the nesting colony. During previous years, flightless young were banded and marked with wing tags. No progress reports of the study have ever been received.

Data were obtained from the Denver Research Center regarding population counts from aerial photographs.

A new pelican study will be initiated next year investigating the relationship between noise and pelican behavior. We hope to determine what effect the Nevada Air National Guard has on pelican production when they "buzz" the island. Mr. Jan Snyder hopes to use the three-year study for his Ph.D. thesis and Linda Floyd, a Master's thesis. Both students are from the University of Nevada, Reno, and will work together.

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)

thru

Refuge Anaho Island RefugeMonths of May

to

August 1957

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total	
	Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>											
White Pelican			Unknown						2,975 1,488	3,980 1,490	7 5,500
Double-crested Cormorant			Unknown						496	740	1,800
Great Blue Heron			Unknown						50	185	300
<p>Counts from Denver W.R.C. aerial photos totalled 2,975 pelicans. It was believed that this represented the breeding population of 2,975, and therefore 1,488 nests. Actually the photo is closer to showing the total number of nests.</p>											
II. <u>Shorebirds, Gulls and Terns:</u>											
California Gull			Unknown						1,931	2,895	6,900
Caspian Tern			Unknown						Unknown		25

DATA HAS CLASS "D" RELIABILITY

(over)

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

INSTRUCTIONS

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

FALLON NATIONAL WILDLIFE REFUGE

Information concerning the Fallon Refuge is similar to the Pelican Island Unit of Stillwater Wildlife Management Area. These areas overlap and cannot be separated.

SIGNATURE PAGE

Credits - Refuge Manager Aldous - Sections III; IV and VI-C

Biologist Napier - Sections I; II; V; VI-A, VI-D, VI-E;
Anaho Island Refuge Report; All NR Forms

Clerk Cress - Sections VI-B; VII; Typing and assembly of
Report

Photography Credit - As shown

Photo Captions - Aldous and Napier

Respectfully submitted,



M. Clair Aldous
Refuge Manager

Date: March 24, 1972

Approved, Regional Office:

Date: _____

(Signature)

(Title)

WATERFOWL

REFUGE Stillwater Wildlife Management Area

MONTHS OF January TO April, 19 71

* Nevada Fish and Game Aerial

(2)

Weeks of reporting period

(1) Species	1* 1/3-9	2 1/10-16	3 1/17-23	4 1/24-30	5 1/31-2/6	6* 2/7-13	7 2/14-20	8* 2/21-27	9 2/28-3/6	10* 3/7-14
Swans:										
Whistling Trumpeter	415	235	215	165	175	245	275	333	375	450
Geese:										
Canada	1,155	1,020	930	1,235	1,645	1,330	975	474	450	417
Cackling Brant										
White-fronted Snow	50	75	50	50	75	50	150	350	350	350
Blue										
CHECK TOTAL GEESSE	1,205	1,095	980	1,285	1,720	1,380	1,125	824	800	767
Ducks:										
Mallard	170	225	475	800	1,135	1,025	850	775	925	1,140
Black										
Gadwall	10	25	75	125	160	165	275	430	1,075	1,510
Baldpate		25	75	150	180	100	90	85	200	345
Pintail	15	50	375	1,200	2,770	3,200	5,525	7,645	11,250	19,300
Green-winged teal	50	125	900	2,650	4,290	3,845	4,250	4,895	9,700	14,550
Blue-winged teal										
Cinnamon teal		15	35	50	75	80	100	115	425	760
Shoveler	420	425	440	450	460	300	425	570	2,350	5,150
Wood										
Redhead			10	15	25	295	325	345	900	1,735
Ring-necked Canvasback	110	125	235	400	615	810	1,150	1,590	2,250	3,660
Scaup			10	15	15	40	45	40	50	65
Goldeneye	10	10	10	5	5	15	10	10	15	20
Bufflehead	20	20	15	10	5	5	20	30	60	95
Ruddy	675	800	1,450	2,375	3,815	4,160	3,650	3,115	5,275	7,725
OTHER C. Merganser	15	25	90	150	230	1,025	650	175	225	335
TOTAL DUCKS	1,495	1,870	4,245	8,395	13,830	15,065	17,365	19,820	34,700	56,390
Coot:	60	50	150	400	915	2,635	4,350	6,475	10,200	13,925

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Stillwater Wildlife Management AreaMONTHS OF January TO April, 19 71

(1) Species	(2) Weeks of reporting period								(3) Estimated	(4) Production	
	3/14-20	3/21-27	3/28-4/3	4/4-10	4/11-17	4/18-24	4/25-5/1	waterfowl	Broods:	Estimated	
	11	12	13	14	15	16	17	18	days use	seen	total
Swans:											
Whistling	200	75	5						22,526		
Trumpeter											
Geese:											
Canada	300	175	100	75	75	70	70		73,472		
Cackling											
Brant											
White-fronted											
Snow	150	150	75	30					13,685		
Blue											
Other TOTAL GEESE	450	325	175	105	75	70	70		87,157		
Ducks:											
Mallard	1,000	900	775	750	700	700	725		91,490		
Black											
Gadwall	1,900	2,450	2,675	2,550	2,475	2,300	2,000		141,960		
Baldpate	1,100	2,325	3,100	2,800	1,050	180	100		83,335		
Pintail	17,800	14,200	9,650	5,325	2,400	500	350		710,885		
Green-winged teal	16,250	12,600	10,400	8,900	5,750	2,100	700		713,685		
Blue-winged teal											
Cinnamon teal	1,125	1,850	3,650	4,500	5,250	6,075	5,400		206,535		
Shoveler	6,850	8,200	9,400	7,650	6,925	6,285	2,850		414,050		
Wood											
Redhead	2,100	1,875	1,950	2,225	2,500	2,750	3,200		141,750		
Ring-necked											
Canvasback	5,275	4,850	4,100	3,000	1,200	375	250		210,315		
Scaup	125	100	75	50	50	45	35		5,320		
Goldeneye	20	15	5						1,050		
Bufflehead	125	100	90	110	150	135	100		7,630		
Ruddy	9,300	10,150	7,400	5,850	5,725	5,600	4,250		569,205		
Other C. Merganser	250	175	100	50	25	10			25,060		
TOTAL DUCKS	63,220	59,790	53,370	43,760	34,200	27,135	19,960		3,322,270		
Coot:	19,600	26,800	31,700	24,600	16,800	10,850	8,400		1,248,870		

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans	22,526	450	
Geese	87,157	1,645	
Ducks	3,322,270	63,220	
Coots	1,248,870	31,700	

SUMMARY
Principal feeding areas Swans - Nutgrass, Leter Reservoir, Stillwater Point Reservoir, Lead Lake
Geese - Adjacent private farmland
Ducks - Pintail Bay, Pelican Island, Goose and Swan Lakes
Principal nesting areas

Reported by Larry D. Napier, Wildlife Biologist

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1750
Form NR-1
(Rev. March 1953)

W A T E R F O W L

REFUGE: Stillwater Wildlife Management Area

MONTHS OF May TO August, 19 71

* Nevada Fish and Game Aerial

(2)

Weeks of reporting period

(1) Species	5/2-8 1	5/9-15 2	5/16-22 3*	5/23-29 4	5/30-6/5 5	6/6-12 6	6/13-19 7	6/20-26 8	6/27-7/3 9	7/4-10 10
Swans:										
Whistling Trumpeter										
Geese:										
Canada	110	120	125	135	140	160	200	200	200	200
Cackling Brant										
White-fronted Snow										
Blue										
NUMBER TOTAL GEESE	110	120	125	135	140	160	200	200	200	200
Ducks:										
Mallard	750	775	825	850	875	900	950	975	1,000	1,300
Black										
Gadwall	1,750	1,500	1,200	1,200	1,300	1,350	1,375	1,400	1,525	1,650
Baldpate	50	25	15	15	20	25	40	45	50	60
Pintail	325	350	350	375	400	450	500	1,500	1,800	2,000
Green-winged teal	250	75	25	25	35	50	65	70	75	80
Blue-winged teal										
Cinnamon teal	4,700	2,950	2,000	2,050	2,100	2,200	2,375	2,500	2,750	3,500
Shoveler	975	350	125	100	100	125	125	140	175	250
Wood										
Redhead	4,450	3,700	2,900	2,000	2,000	2,050	2,100	2,350	2,500	2,900
Ring-necked Canvasback	175	75	30	25	25	35	35	40	45	50
Scaup	20	10	5	5	5	5	5			
Goldeneye										
Bufflehead	30	10								
Ruddy	3,400	2,000	1,450	1,300	1,300	1,350	1,375	1,400	1,425	1,600
NUMBER C. Merganser										
TOTAL DUCKS	16,875	11,820	8,925	7,945	8,160	8,540	8,945	10,420	11,345	13,390
Coot:	6,900	4,600	4,550	4,625	4,700	4,800	4,950	5,200	5,550	5,900

WATERFOWL
 (Continuation Sheet)

REFUGE Stillwater Wildlife Management Area

MONTHS OF May TO August, 19 71

* Nevada Fish and Game Aerial (1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods:Estimated seen : total	
	7/11-17:	7/18-24:	7/25-31:	8/1-7:	8/8-14:	8/15-21:	8/22-28:				
	11*:	12:	13:	14:	15:	16*:	17:	18:			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	285	350	475	700	825	900	950		42,525	9	48
Cackling											
Brant											
White-fronted											
Snow						1			7		
Blue											
OTHER TOTAL GEESE	285	350	475	700	825	901	950		42,532	9	48
Ducks:											
Mallard	1,400	1,450	1,500	1,800	2,000	2,195	2,600		155,015	12	822
Black											
Gadwall	1,775	1,850	1,925	2,000	2,100	2,250	2,500		200,550	17	641
Baldpate	75	80	95	115	130	170	2,800		26,670		17
Pintail	2,400	2,750	7,100	10,000	21,600	36,145	33,500		385,815	8	425
Green-winged teal	90	125	300	775	1,100	1,445	2,900		52,395		35
Blue-winged teal											
Cinnamon teal	3,900	4,350	4,600	4,850	5,000	5,250	5,500		424,025	29	2,520
Shoveler	325	400	650	900	1,400	2,040	4,200		86,660	5	259
Wood											
Redhead	5,800	6,000	4,850	4,500	4,400	4,285	4,400		428,295	27	2,804
Ring-necked											
Canvasback	60	75	90	115	130	150	200		9,485	2	37
Scaup									335		
Goldeneye											
Bufflehead									280		
Ruddy	1,750	1,975	2,200	2,450	2,500	2,650	2,800		230,475	33	1,382
OTHER C. Merganser											
TOTAL DUCKS	17,575	19,055	23,310	27,505	40,360	56,580	66,400		2,500,050	138	8,942
Coot:	6,800	7,400	8,150	8,700	9,900	11,090	18,700		857,605	24	6,824

(over)

	(5)	(6)	(7)
	Total Days Use	Peak Number	Total Production
Swans			
Geese	42,532	950	48
Ducks	2,500,050	66,400	8,942
Coots	857,605	18,700	6,824

SUMMARY	
Principal feeding areas	<u>Pintail Bay, Nutgrass Unit, Swan Lake, Goose Lake, Dry and Foxtail Lakes</u>
Principal nesting areas	<u>Nutgrass Unit, Willow-Millen, Tule Lake and Pintail Bay</u>

Reported by Larry D. Napier, Wildlife Biologist

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

W A T E R F O W L

REFUGE Stillwater Wildlife Management Area

MONTHS OF September TO December, 19 71

* Nevada Fish and Game Aerial

(2)

Weeks of reporting period

(1) Species	8/29-9/4 1*	9/5-11 2	9/12-18 3*	9/19-25 4	9/26-10/2 5*	10/3-9 6	10/10-16 7*	10/17-23 8	10/24-30 9	10/31-11/6 10
Swans:									40	250
Whistling Trumpeter										
Geese:										
Canada	1,090	1,200	1,392	1,150	875	925	1,015	1,025	1,075	1,100
Cackling Brant										
White-fronted Snow						50	290	500	1,000	1,500
Blue										
OTHER TOTAL GEESSE	1,090	1,200	1,392	1,150	875	975	1,305	1,525	2,075	2,600
Ducks:										
Mallard	3,010	3,150	3,295	2,975	2,690	2,950	3,380	3,675	4,125	3,550
Black										
Gadwall	3,075	7,500	10,295	8,750	4,825	4,325	3,885	3,550	2,875	2,100
Baldpate	7,025	10,425	13,835	18,200	21,700	16,775	8,860	6,200	5,000	3,650
Pintail	41,235	43,000	41,650	37,625	34,275	33,600	33,440	28,400	21,600	16,150
Green-winged teal	4,290	8,750	12,530	10,900	8,740	12,450	15,290	18,200	22,700	16,450
Blue-winged teal										
Cinnamon teal	5,800	6,250	7,170	5,375	2,620	1,900	1,010	675	425	200
Shoveler	9,500	12,000	14,555	11,650	9,320	17,525	24,200	21,800	17,300	12,600
Wood										
Redhead	4,600	4,000	3,660	5,850	7,690	5,450	4,700	4,125	3,075	1,250
Ring-necked										
Canvasback	270	450	625	1,125	1,535	2,875	19,705	16,200	12,800	9,600
Scaup									5	10
Goldeneye										
Bufflehead							5	10	25	50
Ruddy	3,100	2,600	2,140	2,475	2,650	5,850	8,990	11,200	8,950	7,175
OTHER C. Merganser								10	40	100
Hooded Merganser										5
TOTAL DUCKS	81,905	98,125	109,755	104,925	96,045	103,700	123,465	114,045	98,920	72,890
Coot:	28,825	38,450	48,190	54,600	61,390	47,350	33,050	20,100	14,650	9,300

3 -1750a

Cont. NR-1
(Rev. March 1953)WATERFOWL
(Continuation Sheet)REFUGE Stillwater Wildlife Management AreaMONTHS OF September TO December, 19 71

* Nevada Fish and Game Aerial	(2)								(3)	(4)
	Weeks of reporting period								Estimated	Production
(1)	11/7-13	11/14-20	11/21-27	11/28-12/4	12/5-11	12/12-18	12/19-25	12/26-1/1	waterfowl	Broods: Estimated
Species	11 *	12	13	14 *	15	16 *	17	18	days use	seen : total
Swans:										
Whistling	925	950	975	1,280	1,600	600	275	150	49,315	
Trumpeter										
Geese:										
Canada	1,150	1,100	1,035	1,000	1,300	1,655	1,600	1,400	147,959	
Cackling										
Brant										
White-fronted										
Snow	2,250	2,300	2,200	3,350	2,000				103,080	
Blue										
OTHER TOTAL GEESSE	3,400	3,400	3,235	4,350	3,300	1,655	1,600	1,400	256,039	
Ducks:										
Mallard	2,970	2,900	2,850	2,770	2,150	460	375	200	332,325	
Black										
Gadwall	650	600	545	330	75				374,010	
Baldpate	1,405	1,275	1,100	930	150				615,710	
Pintail	7,165	5,950	4,895	3,240	900	80	65	50	2,473,240	
Green-winged teal	11,695	9,400	7,350	5,615	1,500	50	40	35	1,161,695	
Blue-winged teal										
Cinnamon teal	35	30	30	25	10				220,835	
Shoveler	7,300	6,350	4,765	1,760	450	30	25	25	1,198,035	
Wood										
Redhead	215	200	155	110	25				312,732	
Ring-necked			5	5	5				105	
Canvasback	4,950	3,825	2,645	1,070	300				242,895	
Scaup	10	10	10	5	5				355	
Goldeneye	10	10	10	10	10				350	
Bufflehead	75	90	100	110	60				3,675	
Ruddy	3,440	3,150	2,900	1,650	650				468,440	
OTHER C. Merganser	250	700	1,050	715	200	10	10	10	21,665	
Hooded Merganser	5	5							105	
TOTAL DUCKS	40,185	34,495	28,410	18,395	6,490	630	515	320	7,932,505	
Coot:	4,645	3,975	3,375	1,825	350	20	15	10	2,590,840	

(over)

	(5)	(6)	ANNUAL (7) USE DAYS	SUMMARY
	Total Days Use	Peak Number	Total Production	
Swans	49,315	1,600	71,841	Principal feeding areas <u>East Alkali Flat #1, Nutgrass Unit</u>
Geese	256,039	4,350	385,728	<u>and Pintail Bay</u>
Ducks	7,932,505	123,465	13,754,825	Principal nesting areas _____
Coots	2,590,840	61,390	4,697,315	
1971 Waterfowl Use Days Total			18,909,709	Reported by <u>Larry D. Napier, Wildlife Biologist</u>

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl) thruRefuge Stillwater W. M. Area Months of January to April 1957

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
			Data has Class D Reliability							Class D Data
Bared Grebe	5	Early Apr.	3,000	Late Apr	Still Present				4,500	
Western Grebe	5	2/22	1,200	4/30	Still Present				1,800	
Pied-billed Grebe	Permanent Resident		200	4/30	Still Present				250	
White Pelican	2	3/9	2,000	4/30	Still Present				2,500	
Great Blue Heron	Permanent Resident		325	Late Apr					350	
Common Egret	3	2/4	50	4/30	Still Present				75	
Snowy Egret	3	4/12	75	4/30	Still Present				100	
Black-crowned Night Heron	Permanent Resident		100+	4/30					150	
II. Shorebirds, Gulls and Terns:										
Snowy Plover	12	4/12	50	4/30	Still Present				75	
Killdeer	1	2/4	1,000	Early Apr	Still Present				1,800	
Long-billed Curlew	1	4/4	25	4/30	Still Present				50	
Greater Yellowlegs	20	2/22	75	4/30	Still Present				125	
Least/Western Sandpipers	5	Early Apr	1,800	4/30	Still Present				2,500	
Long-billed Dowitcher	25	4/12	500	4/30	Still Present				900	
American Avocet	6	2/22	2,000	4/30	Still Present				3,500	
Black-necked Stilt	10	4/5	250	4/30	Still Present				400	
Ring-billed/Calif. Gulls	10	Late Jan	300	4/30	Still Present				375	
Forster's Tern	10	4/12	30	4/30	Still Present				40	
Caspian Tern	15	4/12	25	4/30	25	4/30			30	

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	20	1/9	75	4/30	Still Present				100
IV. <u>Predaceous Birds:</u> Golden eagle	Permanent Resident		1	February					5
Duck hawk									15
Horned owl	Permanent Resident								250
Magpie	Permanent Resident		200	February					60
Raven	Permanent Resident		50	February					60
Crow									
Rough-legged Hawk	Previous Period		25	2/4	1	4/2			40
Bald Eagle	Previous Period		5	Early Feb	2	3/15			10-15
Marsh Hawk	Permanent Resident		40	Late Mar					60
Prairie Falcon	Previous Period		2	3/8	2	3/3			10-15
Sparrow Hawk	Permanent Resident		60	Late Mar					75
Burrowing Owl	1	3/31	5	4/30	Still Present				10
Short-eared Owl	Permanent Resident		15	Late Feb					30

Reported by Larry D. Napier, Biologist

INSTRUCTIONS

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

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl)

thru

Refuge Stillwater W. M. Area Months of May ~~to~~ August 1957

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	
I. Water and Marsh Birds:										
Hared Grebe	Previous	Period	2,000	5/1	Still Present				Unknown	
Western Grebe	"	"	1,200	5/1	Still Present				Unknown	
Pied-billed Grebe	Permanent Resident									
White Pelican	Previous	Period			Still Present					
Great Blue Heron	Permanent Resident							160	425	
Common Egret	Previous	Period			Still Present				Unknown	
Snowy Egret	"	"			Still Present				Unknown	
Black-crowned Night Heron	Permanent Resident							225	750	
White-faced Ibis	2	5/18			Still Present					
POPULATION AND PRODUCTION DATA LACKING DUE TO ASSIGNMENT OF BIOLOGIST TO CENTRAL OFFICE DETAIL DURING JULY AND AUGUST										
II. Shorebirds, Gulls and Terns:										
Snowy Plover	Previous	Period			Unknown				150-200	
Killdeer	"	"			Still Present				1,200+	
Long-billed Curlew	"	"			Still Present				20-30	
Greater Yellowlegs	"	"			Still Present					
Least/Western Sandpipers	"	"			Unknown					
Long-billed Dowitcher	"	"			Still Present					
American Avocet	"	"			Still Present				2,700-3000	
Black-necked Stilt	"	"			Still Present				1,400-1,800	
Ring-billed/Calif. Gulls	"	"			Still Present					
Forster's Tern	"	"			Still Present				175+	

(over)

(1)	(2)		(3)		(4)	(5)			(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	Previous Period				Still Present			225+	900+
IV. <u>Predaceous Birds:</u> Golden eagle	Permanent	Resident						2	5
Duck hawk	Permanent	Resident							10+
Horned owl	Permanent	Resident							275+
Magpie	Permanent	Resident						75	125
Raven	Permanent	Resident							20
Crow	Permanent	Resident							100-150
Marsh Hawk	Permanent	Resident							10+
Sparrow Hawk	Permanent	Resident							25+
Barn Owl	Permanent	Resident							30+
Burrowing Owl	Previous Period				Still Present				
Short-eared Owl	Permanent	Resident							

Reported by Larry D. Napier, Biologist

INSTRUCTIONS

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

3-1751

Form NR-1A
(Nov. 1945)MIGRATORY BIRDS
(other than waterfowl) thruRefuge Stillwater W. N. Area Months of September to December 1957

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total Estimated Number	
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young		
I. Water and Marsh Birds:											
			Data has Class D Reliability								
Hared Grebe	Previous	Period			5	11/17				125+	
Western Grebe	"	"			1	11/17				300+	
Pied-billed Grebe	Permanent	Resident								50	
White Pelican	Previous	Period			1	12/1				1,500+	
Great Blue Heron	Permanent	Resident								575	
Common Egret	Previous	Period			1	10/16				20	
Snowy Egret	"	"				Sept.				125	
Black-crowned Night Heron	Permanent	Resident								1,200+	
White-faced Ibis	Previous	Period				Unknown				Unknown	
POPULATION DATA INSUFFICIENT BECAUSE MAJORITY OF TIME DEVOTED TO REFUGE OBJECTIVES AND FIRE PLANNING											
II. Shorebirds, Gulls and Terns:											
Killdeer	Previous	Period				Mid-Dec				900+	
Long-billed Curlew	"	"				Unknown				40+	
Greater Yellowlegs	"	"			5	12/1				100	
Long-billed Dowitcher	"	"			1	12/1				4,000+	
American Avocet	"	"			1	11/21				1,500+	
Black-necked Stilt	"	"			1	10/1				500+	
Ring-billed/Calif. Gulls	"	"				Mid-Dec				350	
Forster's Tern	"	"				Early Oct				25+	

(over)

(1)	(2)		(3)		(4)	(5)			(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	Previous Period					Early Oct			
IV. <u>Predaceous Birds:</u> Golden eagle	Permanent	Resident	3	12/16					6+
Duck hawk	Permanent	Resident							10+
Horned owl	"	"							325+
Magpie	"	"							75+
Raven									
Crow									
Rough-legged Hawk	2	11/17			Still Present				15+
Bald Eagle	1	11/26			Still Present				10+
Marsh Hawk	Permanent	Resident							30+
Prairie Falcon	1	10/3			Still Present				5
Sparrow Hawk	Permanent	Resident							100
Barn Owl	"	"							10+
Short-eared Owl	"	"							40+

Reported by Larry D. Napier, Biologist

INSTRUCTIONS

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Stillwater W. M. Area

For 12-month period ending August 31, 1971

Reported by Larry D. Napier

Title Wildlife Biologist

(1) Area or Unit Designation	(2) Habitat			(3) Use-days	(4) Breeding Population	(5) Production
	Type	Acreage				
1 Stillwater Point Reservoir	Crops		Ducks	1,348,830	136	167
	Upland	80	Geese	77,420	2	3
	Marsh	95	Swans	5,684		
	Water	1,710	Coots	481,075	450	675
	Total	1,885	Total	1,913,009	588	845
2 Upper Foxtail	Crops		Ducks	213,255	114	140
	Upland	28	Geese	34,160		
	Marsh	11	Swans	3,395		
	Water	391	Coots	49,630	80	120
	Total	430	Total	300,440	194	260
3 Foxtail Lake	Crops		Ducks	1,723,750	204	251
	Upland		Geese	49,133		
	Marsh	183	Swans	30,800		
	Water	928	Coots	655,620	370	555
	Total	1,111	Total	2,459,303	574	806
4 Dry Lake	Crops		Ducks	1,083,425	350	431
	Upland	49	Geese	1,855		
	Marsh	21	Swans	22,120		
	Water	529	Coots	1,015,875	500	750
	Total	599	Total	2,123,275	850	1,181
5 Cattail Lake	Crops		Ducks	222,670	88	108
	Upland	20	Geese	1,295		
	Marsh	2	Swans	8,400		
	Water	263	Coots	124,670	60	90
	Total	285	Total	357,035	148	198
6 Division Pond	Crops		Ducks	81,480	32	39
	Upland	57	Geese	140		
	Marsh	3	Swans			
	Water	50	Coots	3,500	20	30
	Total	110	Total	85,120	52	69
7 Goose Lake	Crops		Ducks	1,087,555	308	379
	Upland	144	Geese	3,710		
	Marsh	56	Swans	33,488		
	Water	954	Coots	727,265	300	450
	Total	1,154	Total	1,852,018	608	829

(over)

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 breeding population of each category of birds for each area or unit.

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Stillwater W. M. Area For 12-month period ending August 31, 1971

Reported by Larry D. Napier Title Wildlife Biologist

(1) Area or Unit Designation	(2) Habitat		(3) Use-days	(4) Breeding Population	(5) Production	
	Type	Acreage				
8 Tule Lake	Crops		Ducks	524,020	850	1,046
	Upland	366	Geese	658		
	Marsh	1	Swans	28,770		
	Water	1,000	Coots	240,660	400	600
	Total	1,367	Total	794,108	1,250	1,646
9 Nutgrass	Crops		Ducks	3,743,705	1,758	2,182
	Upland	600	Geese	45,031		
	Marsh	1,350	Swans	12,439		
	Water	1,750	Coots	979,755	200	300
	Total	3,700	Total	4,780,930	1,958	2,482
10 Swan Lake	Crops		Ducks	708,540	518	637
	Upland	554	Geese	980		
	Marsh	3	Swans	15,778		
	Water	1,200	Coots	294,210	700	1,050
	Total	1,757	Total	1,019,508	1,218	1,687
11 Pintail Bay	Crops		Ducks	2,853,410	582	720
	Upland	280	Geese	7,749		
	Marsh	75	Swans	27,867		
	Water	1,295	Coots	1,569,610	770	1,155
	Total	1,650	Total	4,458,636	1,352	1,875
12 Lead Lake	Crops		Ducks	106,470	336	413
	Upland	190	Geese	4,011	4	4
	Marsh	125	Swans			
	Water	850	Coots	67,165	50	75
	Total	1,165	Total	177,646	390	492
13 Millen Lake	Crops		Ducks	315,000	454	558
	Upland	512	Geese	10,200	4	8
	Marsh	20	Swans	372		
	Water	1,200	Coots	80,000	124	185
	Total	1,732	Total	405,572	582	751
14 Willow Lake	Crops		Ducks	300,020	454	558
	Upland	399	Geese	12,683	4	7
	Marsh	12	Swans	300		
	Water	1,125	Coots	95,595	126	189
	Total	1,536	Total	408,598	584	754

(over)

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 breeding population of each category of birds for each area or unit.

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Stillwater W. M. Area For 12-month period ending August 31, 1971

Reported by Larry D. Napier Title Wildlife Biologist

(1) Area or Unit Designation	(2) Habitat		(3) Use-days	(4) Breeding Population	(5) Production
	Type	Acreage			
15 East Alkali Flat (N. of Division Road)	Crops		Ducks		
	Upland	3,200	Geese		
	Marsh		Swans		
	Water		Coots		
	Total	3,200	Total		
16 Big Water	Crops		Ducks	116,200	
	Upland	1,500	Geese		
	Marsh		Swans	1,470	
	Water	300	Coots		
	Total	1,800	Total	117,670	
17 Indian Lakes and Vaughn Slough	Crops		Ducks	348,005	554
	Upland	3,445	Geese	10,255	8
	Marsh	5	Swans	6,384	
	Water	1,050	Coots	118,895	200
	Total	4,500	Total	483,539	762
18 Pelican Island	Crops		Ducks	1,272,145	136
	Upland	3,640	Geese	97,769	2
	Marsh	25	Swans	5,929	
	Water	150	Coots	121,590	50
	Total	3,815	Total	1,497,433	188
19 Sand Dunes	Crops		Ducks		
	Upland	2,475	Geese		
	Marsh		Swans		
	Water	125	Coots		
	Total	2,600	Total		
20 East Alkali Flat (S. of Division Road)	Crops	430	Ducks	607,740	98
	Upland	2,000	Geese	85,120	
	Marsh	70	Swans	11,515	
	Water	800	Coots	230,440	50
	Total	3,300	Total	934,815	148
21 OTHER Leter Reservoir Lower Carson Adjacent Ponds All Other Upland	Crops	200	Ducks	221,025	280
	Upland	124,132	Geese	8,568	20
	Marsh	50	Swans	6,265	
	Water	200	Coots	78,820	100
	Total	124,582	Total	314,678	400

(over)

INSTRUCTIONS

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UNITED STATES
 DEPARTMENT OF THE INTERIOR
 FISH AND WILDLIFE SERVICE
 BUREAU OF SPORT FISHERIES AND WILDLIFE Sheet 4 of 4

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Stillwater W. M. Area For 12-month period ending August 31, 19 71

Reported by Larry D. Napier Title Wildlife Biologist

(1)	(2)		(3)	(4)	(5)	
Area or Unit Designation	Habitat		Use-days	Breeding Population	Production	
	Type	Acreage				
	Crops	630	Ducks	16,877,245	7,252	8,942
MANAGEMENT	Upland	143,671	Geese	450,737	44	48
AREA	Marsh	2,107	Swans	220,976		
TOTALS	Water	15,870	Coots	6,934,375	4,550	6,824
	Total	162,278	Total	24,483,333	11,846	15,814

	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

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

WATERFOWL HUNTER KILL SURVEY

Refuge Stillwater Wildlife Management Area

Year 1967

(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
10/2-8	1,469	7,345	Green-winged Teal (772); Cinnamon Teal (652); Pintail (458); Gadwall (416); Mallard (300); Redhead (294); Shoveler (282); Ruddy Duck (216); American Widgeon (106); Coot (24); Canvasback (23); Unidentified (16); Ring-necked Duck (4)	1,9 3,563	804	4,367	2,788	8,289
10/9-15	221	1,105	Pintail (51); Gadwall (26); Green-winged Teal (25); Cinnamon Teal (24); American Widgeon (19); Redhead (19); Ruddy Duck (16); Shoveler (15); Mallard (12); Canvasback (6); Greater Scaup (1); Coot (1)	215	48	263	732	871
10/16-22	341	1,705	Canvasback (109); Pintail (78); American Widgeon (67); Gadwall (52); Green-winged Teal (40); Redhead (39); Ruddy Duck (38); Shoveler (34); Mallard (25); Cinnamon Teal (15); Bufflehead (2); Canada Goose (1)	500	139	639	1,054	1,971
10/23-29	232	1,160	Pintail (76); Canvasback (40); Green-winged Teal (34); Shoveler (32); Gadwall (20); Mallard (15); Ruddy Duck (15); Redhead (9); American Widgeon (8); Cinnamon Teal (2); Bufflehead (1); Greater Scaup (1); Coot (1)	254	80	334	767	1,104

(over)

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), Green-winged 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. $\text{Column 9} = \frac{\text{Column 8}}{\text{Column 2}} \times \text{Column 7}$.

Refuge Stillwater Wildlife Management Area

Year 1967

(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
10/30-11/5	197	985	Shoveler (64); Canvasback (60); Pintail (52); Green-winged Teal (36); Ruddy Duck (31); Gadwall (25); Mallard (24); American Widgeon (12); Bufflehead (11); Redhead (10); Lesser Scaup (6); Coot (6); Canada Goose (2); Snow Goose (2); Common Goldeneye (1); Hooded Merganser (1)	343	60	403	669	1,371
11/6-12	256	1,152	Shoveler (73); Green-winged Teal (54); Pintail (34); Mallard (27); Canvasback (18); Ruddy Duck (15); Gadwall (13); Redhead (13); American Widgeon (7); Cinnamon Teal (4); Lesser Scaup (4); Coot (4); Bufflehead (2); Common Goldeneye (2); Whistling Swan (2); Canada Goose (2); Snow Goose (1); Common Merganser (1)	276	57	333	866	1,120
11/13-19	334	1,503	Shoveler (69); Green-winged Teal (42); Pintail (41); Mallard (29); Canvasback (22); Gadwall (19); Ruddy Duck (12); American Widgeon (11); Bufflehead (9); Snow Goose (5); Whistling Swan (4); Cinnamon Teal (3); Redhead (1); Lesser Scaup (1); Greater Scaup (1); Coot (1)	270	64	334	1,153	1,153
11/20-26	178	801	Pintail (45); Shoveler (45); Mallard (14); Canvasback (10); Green-winged Teal (10); Ruddy Duck (9); American Widgeon (6); Cinnamon Teal (5); Whistling Swan (5); Snow Goose (4); Bufflehead (4); Redhead (2); Gadwall (2); Lesser Scaup (1)	162	28	190	607	712

(over)

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Refuge Stillwater Wildlife Management Area

Year 1967

(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
11/27-12/3	207	932	Shoveler (32); Green-winged Teal (17); Pintail (14); Mallard (12); Ruddy Duck (10); Snow Goose (5); American Widgeon (2); Redhead (2); Coot (2); Gadwall (1); Lesser Scaup (1); Bufflehead (1); Canada Goose (1); Swan (1)	101	25	126	706	430
12/4-10	123	492	Mallard (10); Pintail (9); Shoveler (8); Whistling Swan (6); Snow Goose (6); Coot (4); Green-winged Teal (3); Canvasback (1); American Widgeon (1); Cinnamon Teal (1); Ruddy Duck (1); Bufflehead (1)	51	10	61	445	221
12/11-17	74	296	Ruddy Duck (11); Mallard (5); Shoveler (3); Pintail (2); Goldeneye (2); Gadwall (1); American Widgeon (1); Redhead (1); Lesser Scaup (1); Whistling Swan (1); Canada Goose (1); Coot (1)	30	3	33	273	122
12/18-24	43	129	Ruddy Duck (19); Canada Goose (7); Whistling Swan (4); Bufflehead (2); Green-winged Teal (1)	33		33	155	119
12/25-31	11	33	Canada Goose (1)	1		1	36	5
1/1-7/72	19	57	Mallard (1); Ruddy Duck (1)	2		2	38	5

JANUARY 2 - END OF DUCK AND SWAN SEASON

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.
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3-1750c
Form NR-1C
(Sept. 1960)

WATERFOWL HUNTER KILL SURVEY

Refuge Stillwater Wildlife Management Area

Year 19671

(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
1/8-14							21	4
1/15-16 <i>93 days</i>			JANUARY 16 END OF GOOSE SEASON				16	5
TOTAL FOR HUNTING SEASON	3,705 <i>4.8 hrs/ hunter</i>	17,695	Green-winged Teal (1,034); Pintail (860); Cinnamon Teal (706); Shoveler (657); Gadwall (575); Mallard (474); Ruddy Duck (394); Redhead (390); Canvasback (289); American Widgeon (240); Coot (44); Bufflehead (33); Whistling Swan (23); Snow Goose (23); Unidentified (16); Canada Goose (15); Lesser Scaup (14); Common Goldeneye (5); Ring-necked Duck (4); Greater Scaup (3); Common Merganser (1); Hooded Merganser (1)	5,801 <i>1.57 birds/ hunter all season</i>	<i>36/hunt</i> 1,318	7,119	10,326	17,502? <i>18,933</i>

(over)

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INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

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

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

UPLAND GAME BIRDS

Refuge Stillwater W. m. Area Months of may thru ~~to~~ August, 1971

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
			Number broods obs'vd.	Estimated Total		Hunting	For Re- stocking	For Research		
Common Name	Cover types, total acreage of habitat	Acres per Bird			Percentage				Estimated number using Refuge	Pertinent information not specificoally requested. List introductions here.
California Quail	Saltgrass, Desert Shrub, Irrigated Pasture			200					650	Quail and pheasants range on and off the Area from adjacent private farmlands Class D Data
Ring-necked Pheasant	Saltgrass, Desert Shrub, Irrigated Pasture			20					50	

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3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Stillwater Wildlife Management Area Calendar Year 1971

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Mule Deer	Brushy areas along Carson River	5										18	15	
												Class D Data		

Remarks:

Observations at Timber Lake September 17, 1971 - 8 does; 2 fawns

Reported by Larry D. Napier, Biologist

INSTRUCTIONS

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 Louisiana 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) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: 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 RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1754
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge Stillwater W. M. Area

Year ending April 30, 1971

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion
			Hunting	Fur Harvest	Predator Control *	For Re- stocking	For Re- search	Share Trapping			Total Refuge Furs Shipped	Furs Donated	
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal						Permit Number	Trappers Share	Refuge share			
Raccoon	Marsh near Canvasback Gun Club												1 - 5
Badger	Desert Brushland												1 - 5
Coyote	Marsh and Brushland		20		20								175+ Fall, 1970 - 30 Spring, 1971
Kit Fox	Desert Brushland												10 - 20
Bobcat	Foothills of Stillwater Mountains												1 - 5
Muskrat	All Water Areas			1431				STI-265	1,078	353**	353		11,250

* List removals by Predator Animal Hunter

REMARKS:

** All of the proceeds from the sale of refuge share of muskrat furs were turned over to Truckee-Carson Irrigation District

Reported by Larry D. Napier, Biologist

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: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed 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.)
- (2) DENSITY: 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 headings listed.
- (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.

DISEASE

Refuge Stillwater Wildlife Management Area Year 19 71

Botulism

Lead Poisoning or other Disease

Period of outbreak NONE

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized No. Recovered % Recovered

(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease NONE OBSERVED

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions' _____

Food conditions _____

Remarks _____

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

(1)

NONAGRICULTURAL COLLECTIONS, RECEIPTS, AND PLANTINGS

Refuge Stillwater Wildlife Management Area Year 19 71

Species	Collections and Receipts (Seeds, rootstocks, trees, shrubs)						Plantings (Marsh - Aquatic - Upland)						
	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
NONE							NONE						

- (1) Report agronomic farm crops on Form NR-8
- (2) C = Collections and R = Receipts
- (3) Use "S" to denote surplus

Total acreage planted:

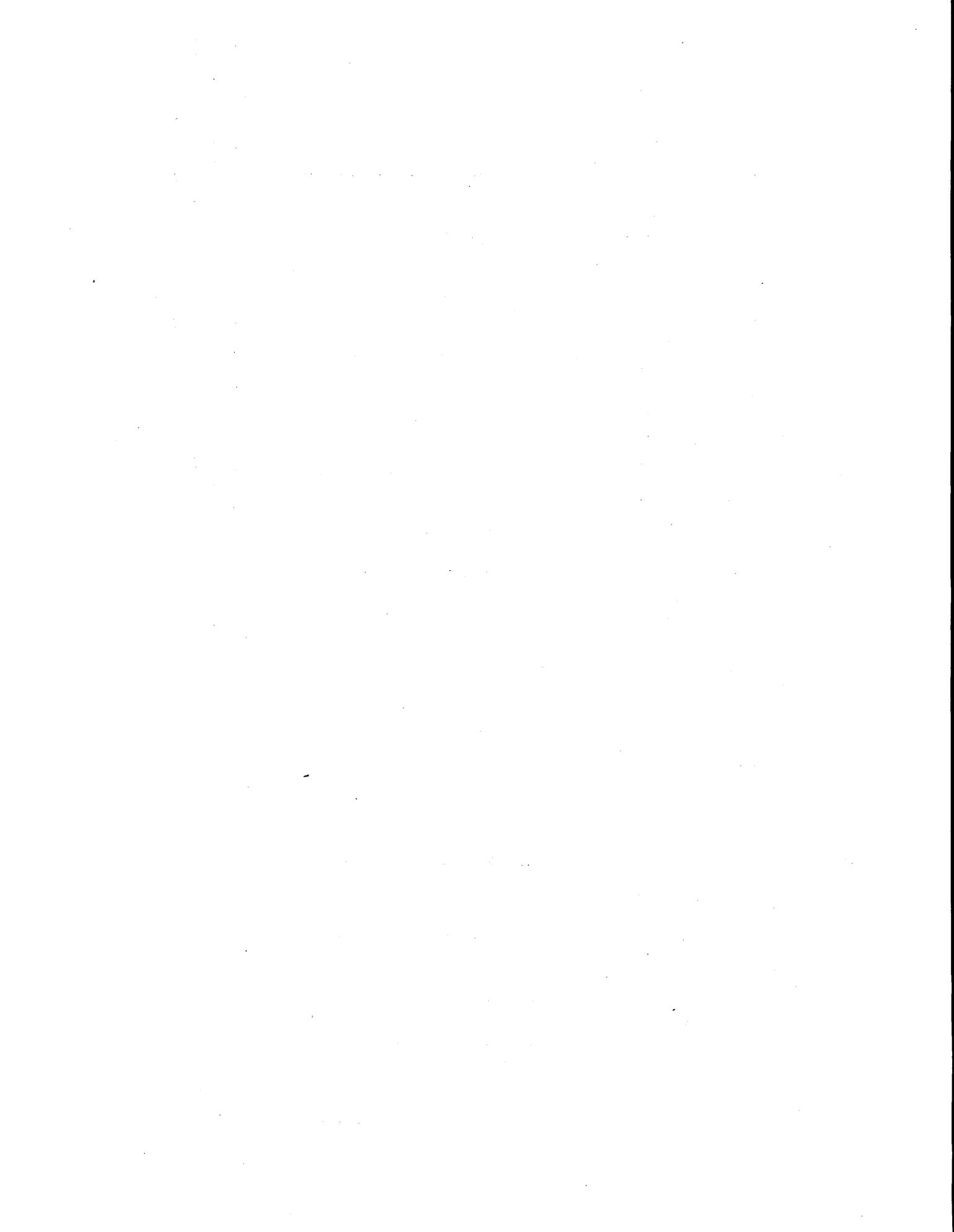
Marsh and aquatic _____

Hedgerows, cover patches _____

Food strips, food patches _____

Forest plantings _____

Remarks: _____



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

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Stillwater W. N. Area County Churchill State Nevada

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Water-fowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Harvested		Unharvested				
			Acres	Bu./Tons	Acres	Bu./Tons			
							Pastures planted in previous years used for goose browse and cattle grazing	535	
							Fallow Ag. Land	0	

No. of Permittees: Agricultural Operations _____ Haying Operations _____ Grazing Operations 19

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
				1. Cattle	2,208	16,417	10,685.25	162,236
				2. Other Horses	62	1,116	511.50	150,318
						17,533	11,196.75	
				1. Total Refuge Acreage Under Cultivation				535
Hay - Wild				2. Acreage Cultivated as Service Operation				535

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.

Cultivated Crops Grown - 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 Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels 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. Unharvested - 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 Cultivated Crops, 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.

REFUGE GRAIN REPORT

Refuge Stillwater Wildlife Management Area

Months of January through December, 1977

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Milo	44		44			5	5	39		39	0

(8) Indicate shipping or collection points _____

(9) Grain is stored at Stillwater Refuge Service Yard Granary

(10) Remarks Milo kept for feed and bait for waterfowl. Fed to waterfowl which were held in duck hospital (botulism victims from Truckee-Carson Irrigation District's Carson Lake).

*See instructions on back.

REFUGE GRAIN REPORT

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

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 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.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (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.

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number

Reporting Year

1971

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

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)
NONE			NONE					

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

Aldous and Olano watching first water through Goose
Lake Bypass. There was some question about the grade
but the Bypass handled the water very nicely.

Napier Photo

Left to Right, Biological Technician Duffney and
Foreman Olano inspect washout around the Cottonwood
Lake outlet structure.

Aldous Photo



Part of the 67 units at Conradt's Landing opening
morning of waterfowl season. Aldous Photo

Some of the airboats and conventional boats opening
morning at Conradt's Landing. Aldous Photo



Old and the new. On the left, the old
"Christmas Tree" signs. Background right,
the new type sign. Aldous Photo



One of the 36 muskrats caught in the live-trapping
and marking program. Apples were used as bait.

Napier Photo

Ray Alcorn, Division of Wildlife Services,
demonstrates proper handling technique.
Note metal tag attached to muskrat's ear.

Napier Photo



View of the pyramid from Anaho Island. This
is the pyramid that gave Pyramid Lake its
name. Aldous Photo

Erosion along the east shoreline of Anaho Island
is taking its toll of double-crested cormorant
nests. Aldous Photo



Unusual tufa formation on the east side of
Anaho Island.

Aldous Photo

