STILLWATER WILDLIFE MANAGEMENT AREA
Including
STILLWATER NATIONAL WILDLIFE REFUGE
Fallon, Nevada

ANNUAL NARRATIVE REPORT
Calendar Year 1981

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM
Left to Right: Morris LeFever, Ernest Lantto, Johnny Johnson, Eugene Duffney, Connie Erquiaga and Floyd Graham

Personnel

1. LeFever, Morris C. - Refuge Manager - GS/11 - Permanent Full Time
2. Duffney, Eugene E. - Maintenance Mechanic Leader - WL/09 - Permanent Full Time
3. Erquiaga, Connie S. - Refuge Assistant - GS/05 - Permanent Part Time
5. Graham, Floyd - Crane Operator - WC/09 - Career Seasonal

YACC

Review and Approvals

Maurice C. LeFever 5-21-82
Submitted By Date

Jim Mesceli 6-10-82
Area Office Review Date

Bob L. Lankford 6-18-82
Regional Office Review Date
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A. HIGHLIGHTS

Navy jet drops live 2,000 pound bomb on Refuge. Failed to explode and not yet located.

Fleishman Foundation releases $500,000 grant to Nevada Department of Wildlife for 180 cubic foot capacity D-Line Canal from Sagouspe Dam to the marsh. Construction is underway.

Archological transects conducted on the Stillwater Wildlife Management Area.

Negotiations between Paiutes and Irrigation District revived, but stalled.

Judge issues a Decree in the 56 year old Alpine Case, but not settled as Justice Department appeals. Could dry up Stillwater.

U.S. Geological Service water recorders replaced with Fish and Wildlife Service water recorders.

Goose Lake Bypass cleaned and repaired (26,000 cubic yards).

2,400 gallons of diesel swiped.

North Marsh Unit rested from grazing all year — a first.

In Pyramid Indians vs. Truckee-Carson Irrigation District — case remanded to lower court for determination of Indian water rights for fisheries (Indians won in part and lost in part).

Over 1,100 white faced ibis raised to flight stage at Stillwater Wildlife Management Area and 5,800 in Carson Pasture.

Nevada Department of Wildlife decides to abandon three wells.

B. CLIMATIC CONDITIONS

From September, 1980 until May, 1981, temperatures were above average and water units generally ice-free. During late spring, temperatures were average or above, but precipitation continued well below average since fall of 1980.

August and September seemed very hot. Temperatures stayed above 95°F for long periods. On September 24th, a 0.2" shower broke a 100 day hot streak during which no protective cloud cover blocked the sun's rays. No thunder storms developed and precipitation was 0.38" below normal. Temperatures were 4.3 degrees above normal during those two months. These conditions caused high evapotranspiration loss in units already suffering from meager water inflows.

Three hours prior to the October 10th duck season opener, heavy rains, from a massive storm system, dumped about a half inch of rain on the Management Area, making this one of the messiest public use events on record. The month ended up 6.6 degrees below normal with 0.4 inches of extra moisture. November and
December averaged 3.4 and 6.7 degrees above normal. Total precipitation for the year was only 3.8 inches or 0.93 below normal, 2.1 inches less than in 1980 and on an average, hotter.

D. PLANNING

1. Master Plan

A formal master plan has not been prepared for this station, pending resolution of water shortages and the cooperative agreements which established the Management Area.

2. Management Plan

Same situation as above. Some individual plans are on file. Most of these are outdated. The 30 year old trapping plan was replaced with a new Fur Management Plan. The 20 year old grazing plan was amended with the production of a Grasslands Management Plan/Proposal for the North Marsh Unit. Lack of personnel and time prevented the development of prescribed and other burning plans.

3. Public Participation

Drafts of the Fur Management Plan were circulated in CY 1980. The North Marsh Grasslands Plan was developed after several meetings with the Truckee–Carson Irrigation District (TCID) and the Nevada Department of Wildlife (NDOW) (cooperators under the three party agreement that established the Stillwater Wildlife Management Area (SWMA) in 1948). Another meeting with the participation by permittees is planned prior to implementation for the 1982/1983 grazing season.

4. Compliance with Environmental Mandates

An Environmental Impact Assessment may be required for the North Marsh Plan depending on alternatives finally recommended. A FONSI was issued for the Fur Management Plan.

5. Research and Investigations

As a result of the Stillwater National Wildlife Refuge 1980 Well Pumping Marsh Salinity Study reported in the CY 1980 narrative, the NDOW has decided to abandon the three wells drilled on the Refuge in 1977.

Investigations conducted this year included our two annual studies, the Aquatic Plant Survey and Waterfowl Production. These will be reported in appropriate narrative sections.

Archeology. A team of field researchers involved in the nearby Hidden Cave Archeological Project were discovered on the SWMA in June. They had an
Antiquities Act Permit 80 NV-152 for 1980, but had not received their new permit (81 NV-244) due to delays; nor, pending this permit, had they received their BLM permit from the Carson District Office for lands adjacent to the SWMA. In any event, they were in the wrong area and without a Refuge Special Use Permit (SUP). They were kicked out and continued their studies on the adjacent Stillwater Mountains. The FWS then speeded up the issuance of Permit 81 NV-244 from Washington. (David Hurst Thomas in charge, Department of Anthropology, American Museum of Natural History – Robert L. Kelly, Field Project Leader, Museum of Anthropology, University of Michigan). After agreeing to FWS requirements, including a research design and description of field activities, this Refuge issued a SUP STL-547 and the study resumed on the SWMA. Basically, investigation involved a search for surface items along transect lines east to west across the SWMA. The data submitted by field project leader, Kelly has not been fully evaluated and will be reported in the 1982 narrative.

E. ADMINISTRATION

1. Personnel

For the first time in the past three years, there was no change in our "permanent staff". Recently, through retirements and transfers, this station lost over 90 years of experience on the SWMA.

<table>
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<tr>
<th>Fiscal Year</th>
<th>Full-Time</th>
<th>Part-Time</th>
<th>Temporary</th>
<th>YACC</th>
<th>FWS Personnel Years</th>
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<td>8</td>
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<td>2</td>
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<td>9.46</td>
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</table>

*Two positions vacant for long period.

2. Youth Programs

The Refuge continued to use YACC help. With our staff structure being somewhat top heavy, we benefited by having several "grunts" around. However, any amount of time spent on YACC supervision takes time that might have been devoted to more highly skilled jobs, such as dozer operation.

A few who stayed with us for much of the CY were: Johnny Johnson, Dan Howard, Tom Burton, Darrell Aguirre and Stephanie Gill. Gary Brastrup, a wildlife major in his last semester at the University of Idaho, performed field studies (brood counts, duck production report and aquatic reports). He did an excellent job.
The YACC's took care of recreation maintenance, hauled gravel, assisted field personnel, performed small repairs and managed to refurbish or replace damaged signs as rapidly as they were vandalized.

From left: Duffney, Gill, LeFever, Howard and Graham at the office. Erquiaga camera shy.

Summer field crew. YACC Stephanie Gill (we called her George as she was one of the guys), Duff, Floyd, Ernest, and YACC Dan Howard.
5. Funding

The budget for this year increased, but not enough to cover inflation. The NDOW contribution stayed at $25,000, less than one-sixth of our total budget. Under the coop agreement, they are supposed to contribute 50%. Basically, our funding is only slightly more than the mid to late 1970's, so operations and personnel years are gradually decreasing.

<table>
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<th>FY</th>
<th>1210</th>
<th>1240</th>
<th>1921</th>
<th>Total</th>
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<td>130,100</td>
<td>10,600</td>
<td>25,000</td>
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<td>1980</td>
<td>121,600</td>
<td>7,900</td>
<td>25,000*</td>
<td>154,500**</td>
</tr>
<tr>
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<td>147,800</td>
<td>7,900</td>
<td>5,000***</td>
<td>160,700</td>
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<td>1978</td>
<td>126,600</td>
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<td>1976</td>
<td>99,000</td>
<td>10,000</td>
<td>50,000</td>
<td>159,000</td>
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</table>

*$13,000 used by the Fish and Wildlife Service on well study.

**$4,000 added at the end of the year for coop student.

***$20,000 more held by NDOW and used on well project.

6. Safety

The station safety committee met almost every month. Instead of movies, we concentrated on reading and discussing safety material, including reports on fatalities of FWS personnel (backhoe and fires). With frequent changes of YACC personnel, the Chairman went over basic FWS policy on prevention, training, proper SAFE attitudes, safety equipment, etc. Time was spent reviewing the Safety Manual (24AM), especially the sections dealing with vehicles and heavy duty equipment standards, inspections, required maintenance, safety features, etc. The new fire section in the Refuge Manual was reviewed.

Three injuries were reported on CA-1. Only one (metal particle in eye) required medical treatment (eyewash) and involved no lost time. We had a towed trailer loaded with a backhoe break loose and tip over, but repairs were less than $100.00.

This station now stands at 1,081 work days or 4,626 personnel days, probably a record for this station.

F. HABITAT MANAGEMENT

1. General

For the second year in a row, the Aquatic Vegetation Survey was performed as practiced prior to 1975. There had been a tremendous response by aquatic vegetation to increased water in 1979 and 1980. As 1981 was predicted to be a short water year, we wanted to document growth and survival under these conditions, plus any indications of decrease in submergents due to lack of de-wathering and aeration and effects of carp.
Survey results will only be mentioned briefly. We began the year with all units, except the Alkali's West Marsh, full. As inflows were low, we sacrificed Lead Lake, Upper Foxtail and Stillwater Point Reservoir using their storage water to maintain more productive units. Swan Lake dried up. We tried as much as possible to use Goose, East and West Bypass canals in maintaining lower units. However, due to unusually high evaporation rates, we had to push a lot of water through the Foxtail units. Upper Foxtail was dry and water passing through carried a heavy silt load. This flow and silt resulted in poor submergent growth in Lower Foxtail as sunlight could not reach the bottom. However, we achieved good to excellent submergent productions in Dry Lake, Dog Head, Goose Lake (usually poor here) and North Nutgrass. There was no growth in Lead Lake as usual, while Tule was only fair due to low levels.

2. Wetlands

The following is from our annual water reports. We began the year with 19,000 surface acres. In February when Pintail Bay reached 3,877.34 feet, we spilled water into the sand dunes. It was all downhill from there, until about November 1st. Cooler weather decreased evaporation rates and our deficient inflows managed to match losses. Unit water levels then stabilized. We continued to deliver all water received into the marsh until late November.

The main marsh needs 76,804 acre feet for full maintenance of all units. Our 1981 water plan predicted inflows totaling 39,000 acre feet to the main marsh. Actual receipts were 33,655. The five thousand, plus shortfall, can be accounted for by three unforeseen circumstances: 1) no thunder storms, thus no canceled water orders (water dumped on SWMA when orders canceled); 2) tighter controls over "wastage" by the Irrigation District and 3) long, hot summer with a lot of wind. It is also evident that established water requirement figures and estimated annual evapotranspiration rates are too low. As a result, we were overcommitted in the number of units we planned to maintain. After wasting a lot of water, we finally gave up trying to maintain Pintail Bay and we let it dry up. Tule Lake ended up quite low and Swan Check was very shallow, neither situation is the best for submergent growth.

The Alkali Units were not used and no pasture irrigation was attempted. In November, goose hunters were upset that Stillwater Point Reservoir was dry. As one hunter owns land southwest of the Refuge and was on the TCID Board of Directors, he tried to force us to close down the reservoir outlet. We refused to do this until the marsh was stabilized. There was enough water in the Irrigation District's system that when it was drained at the end of the irrigation season, enough was stored in the reservoir to hold geese in the area.

The Indian Lakes were low all summer and no water reached the marsh after early August. Total inflows were about 4,131 AF (1,000 less than necessary to maintain these units).
At the end of a good water year (CY 80) we finally spilled out of Pintail Bay into the dunes during February 1981. The first spill in eight years. Carson Sink is in the background.

After October 1, we replaced five U.S.G.S. water recorders with our own and crew began reading them monthly. Duff at the controls of the Paiute Drain Recorder.
Our extensive rehabilitation and correctional cleaning of Goose Bypass went a long way in maintaining levels in our most productive units (Nutgrass and Goose) and enabled us to just barely flush Dry Lake, resulting in less turbulence and excellent submergent growth in all three units.

Pelican Island at the mouth (terminus) of the Carson River requires 9,473 AF to maintain vegetation there. Only 1,068 AF passed the Carson River recorder during the year.

3. **Forests**

Some scattered cottonwoods and willows are present. Salt cedar is a problem. Our entire woodland habitat situation was discussed extensively in last year's narrative.

4. **Croplands**

Abandoned for many years due to lack of enough water and "guaranteed" water.

5. **Grasslands**

Our "grasslands" were discussed in length last year. Other than the main marsh areas, our "grasslands" consist of greasewood/saltbrush habitat or saltgrass where intermittent water usually occurs or where the water table is near the surface. Some areas like the Paiute Pasture and East Pasture were cleaned of brush and planted to various grasses and crops during the 1950's. A lot of this is still brush free and supports fair stands of saltgrass. In the Marsh, saltgrass is present in about a 100 yard strip around each impoundment.

7. **Grazing**

Total AUM's during the FY or output report year 1981 totaled 12,907 bringing revenues of $21,410.72 to TCID. There were thirteen permittees. No permittees for the North Marsh Unit, one for the fenced Refuge Unit, one for the unfenced common range with BLM, one for Paiute Pasture and eleven in the Open Unit (one has two areas).

With the elimination of the North Marsh Unit permittee at the end of the 1980/1981 grazing season, no permits were issued for this unit. Other than a few stray, trespass cattle, (estimated at 200 AUM), this unit was rested from February on. It demonstrated excellent recovery, especially saltgrass vigor. Despite poor water, emergent vegetation (including nutgrass) showed some recovery and spreading. Actually, some improvement was evident during 1980, when permittees were forced to comply with cattle and AUM limitations (see 1980 narrative).

A North Marsh Unit Grasslands Management Plan was developed this year and has been approved by the Area Office and has the preliminary concurrence of NDOW.
This will be presented to TCID in February or March. Basically, the plan provides for grazing only on the basis of demonstrated benefits for wildlife. In this instance, whenever saltgrass areas become decadent and unsuitable for nest site selection. This usually would restrict grazing to once every four to seven years, depending on water receipts. Use will be limited to the fall season also, to avoid impacts on emergent vegetation. The decrease in the volume and quality of water in recent history has hampered the growth, survival, spreading and establishment of hardstem bulrush, cattail and nutgrass. The Refuge Unit has been grazed only in the late fall and winter since 1977 and has improved. However, annual grazing will be discontinued.

One of the poorest water and weather years in recent history was 1981. Forage conditions at cattle turn-out time (April 1) in the open units were poor. As the old plan and traditional practices leave little ability to be flexible and reduce grazing, feed was short all summer. Some cattle died and available saltgrass, etc., was totally consumed. Some permittees, as they usually do during drought years, voluntarily pulled cattle out in late summer or early fall.

9. Fire Management

The old fire plan recognizes that fire poses no real problem in this sparse desert, but provides no authorization for prescribed burning in marsh habitats. Stands of cattails in the middle of Nutgrass and the south end of Lower Foxtail need a good root burn to open them up. Lacking office types, a new plan was not developed before the new Fire Management section of the Refuge Manual hit us. Prospects for a "wet" CY 1982 left burn hopes dampered for yet another year.

10. Pest Control

Because of lack of funds and personnel, no action was taken on salt cedar (see NR80).

During FY 1981, only ten coyotes were reported taken by trappers. All trapping is supposed to be under a permit, but many don't bother. As the SWMA is open to general hunting under State regulations, an unknown number were taken by rifle or shotgun. No hunting or trapping was permitted on the refuge portion. During FY 1981, six muskrat trappers reported a harvest of 2,750 rats. With 25% of all receipts going to TCID, they received $3,467.12.

As the previous plan was 30 years old, it was revised during 1980/1981 to meet the new Refuge Manual requirements. The new plan provides for a bid selection of permittees. This resulted in receipts of $3,385 for the 1982/1983 season. As of January 1st, they had caught 1,350 rats. They should catch another 1,000-1,500 this spring.

11. Water Rights

The 1980 narrative contains a lengthy discussion of Stillwater's water problems
that need not be repeated. New developments are as follows:

With the advent of a new administration in Washington D.C., the U.S. Department of Interior negotiation team was disbanded. Then, the new Secretary of the Interior (Watts) set a negotiated settlement as high priority during his tenure. He urged all parties to arbitrate and assigned the Bureau of Reclamation the task of chairing meetings and getting a dialogue going. Two meetings of all parties (TCID, Pyramid and CP&L, etc.) were held near the end of the year. TCID made a settlement offer that was pretty much the same as the past. This calls for $12 million in facilities that will improve TCID's efficiency and save water. As these water savings are not promised to Pyramid Lake to help stabilize its level, the Indians rejected this offer, calling it an insult.

The 56 year old Alpine Court Case was appealed by the Justice Department over the objectives of the Secretary (see Appendix).

Late this fall, NDOW and the TCID started work on the 180 CFS capacity Sagouspe D-Line. Monies ($500,000 grant + one year of interest) was awarded to NDOW by the Fleishman Foundation to provide the District with the ability and option to divert water from the Carson River during operational spills and send it to Stillwater's main marsh.

12. Wilderness and Special Areas

The Stillwater Marsh is designated a historic landmark of state significance. There has been no activity here.

G. WILDLIFE

1. Wildlife Diversity

Diversity was quite good. Many of our ponds were drying up so shorebirds were quite abundant. Other water units held up, despite the drought providing habitat for various water birds. By fall, uplands were in sad shape, offering little for many critters.

2. Endangered and/or Threatened Species

S. Bald Eagles totaled eight during January, the usual number. Four to six were present in December again. The average year was 1981.

White-Faced Ibis again set up a nesting colony in West Nutgrass along with many herons and egrets. The peak population was 1,600 with 1,100 produced to flight stage. A bumper crop of 5,800 young were also produced at Carson Pasture.

Not surprisingly, only 150 W. Snowy Plover were estimated this year after considerable effort to locate these little devils. About 400 were recorded
by a study team last year when playa lakes had water. Perhaps 80 young were produced.

N. Long-Billed Curlew were less abundant than last year. Considerable effort was made to locate pairs and young. Production, after a lapse of many years, was verified with sightings of young for the second year in a row. We estimate that about 80 were produced. Curlew and plover use areas were plotted on maps.

3. Waterfowl

Despite abundant water in 1980 and "enough" in 1981, waterfowl use was not as much as expected. After fighting to provide habitat, we find ourselves with not enough ducks still alive in the flyway to utilize what habitat we have. Stillwater's wetland environment is more suited for divers (Redheads, Cans), than for dabblers. As a result, the few dabblers in the valley utilized wetlands other than Stillwater's. Meanwhile, use days by cans and redheads were about average. Apparently, when populations are high, dabblers "spill over" to less desirable habitat, such as Stillwater.

This year was a reverse of 1980. Food was abundant in the North Marsh and scarce in the Refuge portion of the SWMA. Last year, use days in the Refuge was high, as the birds seldom left. This year strong daily flights to and from the Refuge were common at dawn and dusk.

Canvasback use was fairly high in the fall (809,400 UD), but below the 1,011,000 UD recorded in the fall of 1980. Cans arrived early, with 10,000 present on October 20th. Use in 1979 was 434,550. Redhead use (in thousands of use days) was 70.5 in 1979, 303.0 in 1980, and 72.8 in 1981.

The fall duck migration began three weeks to one month earlier than usual. The peak of 45,000 ended up being it for the year with a steady decrease from that point on. Swans and snow geese showed up a month early.

<table>
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<tr>
<td>CY 1968-1977 Average</td>
<td>16.3</td>
<td>CY 1981</td>
<td>5.8</td>
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*Millions

Use days this CY for some species, like mallard, were up considerably. Possibly because of displacement from drought in the northwest or the prairie pothole country. Goose use increased, reflecting recovery of the marsh. More use by snow geese, small Canadians and local "Rocky Mountain"/Great Basin Canadians (possibly a result of the drought and two years of reduced hunting seasons). The data is: 1979 - 167.3; 1980 - 135.6 and 1981 - 201.3 thousand use days. W. swans peaked at 5,400 by January 1st, a near record, but total
use days this fall was 296.0 and should almost equal by spring migration the 1979/1980 total of 347.0. Use in 1980/1981 was only 130.7. Production of ducks totaled 14,188 compared to 4,908 last year and 5,331 in 1979. Alot of increase was the result of good carry over conditions from 1979 and 1980, especially the water left over in West Marsh.

Total waterfowl production, including coots, was 27,415 compared with 17,931 last year and 11,031 in 1979 and 941 in 1978. Production in 1979 compared closely with that of the 1960's, while this year equals that of the late 1950's. Gary Brastrup, doing an excellent job, performed the duck production count and report this year. At first glance, it appeared that there were only a few more broods present. Until one really began intensive counting, then a large production was evident. The pair count at 3,860 was one of the highest on record also. Redhead production was estimated at 6,988.

Gary Brastrup worked for us under the YACC program performing waterfowl production counts and other biological duties. This guy really impressed us, was well liked and did an excellent job.
Dan Howard is also a muskrat trapper and helped us determine rat numbers. His work made it possible to finally gravel Hunter Road.

4. Marsh and Water Birds

Use days recorded during FY 1981 increased 35% over FY 1980 to 1.35 million. Last year use was 60% over FY 1979. Despite reductions in total water during 1981, habitat conditions were evidently better than previous years and provides evidence that the marsh is recovering from the 1976 drought.

A nesting colony of ibis, snowy egret, great blue heron, great egret and B-C night heron was again established in West Nutgrass, but this time large numbers were present. Production totaled 3,395 compared to 1,570 last year. Strangely, little nesting was evident in other areas. About 1,250 snowy and 240 great egret were produced, along with 650 B-C night heron. Western grebe production was high at 800, but most young died, probably from some type of botulism.
5. **Shorebirds, Gulls, Terns, and Allied Species**

We had expected use to be up because of receding shorelines, but this was countered by less water areas being available. Use days at 3.36 million was slightly less than 1980's 3.79 million. Use in FY 1979 was 2.5 million.

6. **Raptors**

Use at 66,600 was slightly less, but still 50% greater than FY 1979. We did not have much time to keep track of these species.

7. **Other Migratory Birds**

Ravens are Stillwater's number one predator on duck nests. The population of ravens and crows are increasing in the Lahontan Valley.

8. **Game Mammals**

A mountain lion was observed in February by employee, Eugene Duffney, at the north end of Pintail Bay. First sighting in 20 years.

11. **Fishery Resources**

Fish populations have not recovered from the 1976-1977 drought. As the quality of water has gradually diminished (primarily due to sodium salts) most game species are not able to reproduce in most areas. The NDOW conducted fisheries studies this year. (Federal Aid Project Number F-20-17 Job 108-1-2).

**Objectives:**

To obtain baseline data from Indian Lakes and Stillwater Marsh which will be needed to compile a Fisheries Management Plan in 1982. To summarize historical data pertaining to these fisheries. To determine present angling use and success in relationship to present cold and warm water fish plants. To determine factors presently limiting desirable game species recruitment and investigate potential remedies.

**Procedures:**

Creel census will be conducted two days per month (1st Saturday and 1st Sunday) from May through September to determine angling success and species composition in the creel. Other information gathered during creel census will include residence of anglers, length of fish caught and angler effort per unit of catch. Creel census cards will be issued to all incomplete anglers during the first creel census of each month to aid in computing total success for completed fishing effort.

Water chemistry will be collected on all major ponds and dike units, with sport fishery potential on a monthly basis. Data to be collected will include water temperature, dissolved oxygen, turbidity, conductivity, acidity, alkalinity, carbon dioxide, PH and hardness. Gill nets will be set overnight on a monthly basis using variable mesh nets to establish fish species composition. Because of the large number of potential water, each major water unit will be sampled.
once or twice during the year. During July and August, beach seining or sein­
ing of drop structures will be conducted to determine annual recruitment of
prey and forage fish.

Data collected from gill netting, beach seining and creel census will be
assembled to assess the return and survival of cold water fish plants. Fac­
tors limiting fishery potential will be assessed and alternatives to fully
develop this sport fishery will be examined.

During 1982, NDOW will develop a fisheries plan. We have told them that we
want to be involved in this effort to make sure that FWS objectives for the
SWMA are not impacted.

17. Disease Prevention and Control

For the second year in a row, botulism losses were low. A total of 360 ducks,
48 coot and 55 other species were picked up dead, or died in our duck hospital.
About 100 more were released after recovery. The disease was noted earlier
this year and persisted all summer. Possibly our control efforts kept chronic
hot spots somewhat subdued. These were: Lead Lake, Dry Lake, Goose Lake,
Swan Check, and to some extent, Tule and South Nutgrass.

One hundred and thirty-eight gizzards were collected as per the Annual Work
Plan Advice. These were mostly canvasback and redhead, but 19 gizzards from
One of our smaller projects — cleaning out the duck hospital pond which became choked with Cattail.

ruddy ducks were also collected. Also, livers were taken this year. Twenty-nine percent of the redheads and seven percent of the canvasbacks contained one or more lead pellets during the 1981/1982 season as compared to 19% and four percent respectively from the previous season's total. The 1980/1981 level was about 50% less than the 1979/1980 season. We suspect the 1980/1981 level was lower because these species spent more time in the Refuge area which has not been hunted since about 1948.

H. PUBLIC USE

1. General

The general trend in Churchill County is a greater population and a greater demand for recreation. However, lacking a fisheries recovery from the 1976 drought, and poor water conditions in 1981, less fishing and hunting opportunities have resulted. A lack of ducks in the flyway has discouraged many hunters. Total CY visits this year were 29,942 and 29,094 visits for FY 1981, compared to 31,248 and 35,061 the previous year.
General non-wildlife oriented recreation is increasing. As the NDOW and the FWS both want to give up the west half of the SWMA, there is little interest in curbing unsavory activities.

5. **Interpretive Tour Routes**

About 1,700 people toured the area. There is a poorly marked auto tour route through the North Marsh, and 45% of the total used this area and route.

7. **Other Interpretive Programs**

Around 370 school children enjoyed conducted tours this year. Four slide talks were also given by the Refuge Manager.

8. **Hunting**

The Refuge portion of the SWMA is closed to hunting. The remainder of the Management Area is open under general State regulations. Some Nevada Fish and Game Commission regulations, specific for the SWMA, limit some activities further. The area is left open to long seasons for rabbits and all year for coyotes.

Total hunting visits for CY 1981 were estimated at 8,325 compared to 8,490 last year. After the 1976 drought, use decreased to about 5,000 then increased to 12,000. The current lower visitation in 1980/1981 is the result of a general lack of ducks in the flyway. Over 680 duck hunters used the marsh during the opening weekend and averaged 3.01 each. About 7,210 waterfowl hunters were recorded compared to 6,795 in 1980. The slight increase for this year season reflects a more successful permit hunt for whistling swans. An estimated 10,190 waterfowl were bagged, 320 less than in 1980. Success at 1.9 birds per hunter was lower than the 2.0 recorded in 1980/1981. Adult birds made up a high percentage of the bag. Only eight percent of the harvest was redhead and four percent were cans. One third of the bag consisted of green-winged teal. Mallard at 14% were unusually high and ranked second. The take of pintail was low at seven percent. Our waterfowl peak of 45,000 in September was the high for the year. Less than half that of the October, 1980 peak. As the marsh did not freeze until January, hunting was fair until the end of the duck season.

Whistling swans were present in high numbers (4,000-5,000) and due to lack of feed in the Refuge, they made daily flights into the hunting unit across Division Road. This resulted in a high estimated legal kill of 210 on the SWMA and perhaps over 400 in the Lahontan Valley.

<table>
<thead>
<tr>
<th>Harvest Year</th>
<th>Ducks</th>
<th>Redheads</th>
<th>Cans</th>
<th>Geese</th>
<th>Swans</th>
<th>Coot</th>
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</thead>
<tbody>
<tr>
<td>1981/1982</td>
<td>9,780</td>
<td>229</td>
<td>116</td>
<td>50</td>
<td>210</td>
<td>150</td>
</tr>
<tr>
<td>1980/1981</td>
<td>10,240</td>
<td>1,820</td>
<td>235</td>
<td>60</td>
<td>40</td>
<td>170</td>
</tr>
<tr>
<td>1979/1980</td>
<td>13,720</td>
<td>1,180</td>
<td>740</td>
<td>50</td>
<td>180</td>
<td>200</td>
</tr>
</tbody>
</table>
9. **Fishing**

Game fish populations have not recovered in the Main Marsh from the 1976/1977 drought. Visitors seldom try this area, except around Structure Number 1 and the 4-Way Structure. There is some effort to fish Lead Lake, but success is poor. Indian Lakes remains popular, but success is only moderate.

Total visits for fishing were calculated from vehicle counters at 9,505, with 60% of these visits occurring in April, May and June. Species commonly harvested include: white and large mouth bass, bullhead, channel and white catfish and crappie.

10. **Trapping**

In 1980, the NDOW closed all state management areas, including the SWMA, to trapping during the waterfowl season. These new regulations did permit the FWS (Refuge Manager) to issue permits all year. However, the NDOW preferred that trapping be restricted to the taking of muskrats until the end of the goose season, currently late January. This is too late for anyone interested in taking coyotes. During the 1980/1981 season, 2,714 muskrats were harvested.

11. **Wildlife Observation**

Visitors in this category were not numerous, totaling only 3,175 to 4,000 annually, accounting for 12.5% of all visits. Unfortunately, there is no contact station or other facility. Visitors are on their own, guided only by the tour route and available leaflets. Pelicans, waterbirds and concentrations of whistling swans appear to be the main attractions.

14. **Picnicking**

This activity remains popular at Likes Lake, the only fresh water lake with shade. Elsewhere, "picnicking" is simply the satisfaction of hunger pangs while fishing, hunting, etc.

15. **Off-Road Vehicling**

Due to population increases and lack of enforcement, this activity is growing on the SWMA. Although Commission Regulations restrict this activity, public notice is provided only on the annual hunting regulation brochure. Many fisherman, arrowhead hunters, ATC drivers, motorcyclist, swimmers and campers do not read the brochure.

In 1980, we replaced signs that were destroyed three to four years ago. This seemed to help some. Fifty standard no vehicle signs were erected in the Main Marsh to decrease habitat damage, harassment of wildlife, access to impoundments, and disturbance to waterfowl hunters who make the effort to reach out of the way places by boat or foot. Total off-road vehicle and other use (arrowhead hunting) decreased significantly.
Each spring bus loads of grade school students from Reno visit Stillwater. Stillwater Mountains are in the background. Note: alkali, the result of a high water table.

Aerial view of the Stillwater Marsh at the end of a good water year.
16. Other Non-Wildlife Oriented Recreation

Swimming has been very popular with about 5,400 visits recorded in FY 1980 and 1979. Above average summer temperatures increased this activity, but by August, Likes Lake became somewhat murky and very low, so use was only 4,150 this FY. NDOW imposed a five nautical mile per hour (no wake) safety regulation for Likes Lake to reduce conflicts between fisherman and swimmers. On March 24th, 150 boy scouts camped on the area and cleaned up trails.

On March 20th, forty people rode on horseback across part of the Refuge while participating in a long distance cross country trail ride. They were restricted to public through roads.

Lahontan Valley water quality is gradually deteriorating. Effectiveness of sewage treatment upstream in Carson City, Reno and Sparks decreases as the number of residents increase. Carson City has proposed a new waste treatment facility. In order to decrease costs to residents, it was planned to lower phosphate discharge standards. In 1980, Lahontan Reservoir had a blue-green bloom of toxic algae. Numerous carp died from lack of oxygen. It stunk to high heavens and was eventually closed to public use. Local residents were naturally quite vociferous at waste treatment hearings this year. Reno and Sparks finally came out with their DES on their joint treatment facility. Again, the recommended choice was to dump relatively untreated sewage into the Truckee Canal which feeds into Lahontan Reservoir in order to reduce annual operating costs. Naturally, local reaction was negative.

17. Law Enforcement

There has been a chronic problem with violations, especially along Division Road. During the 1979/1980 waterfowl season, very little enforcement took place and many hunters harvested cans and redheads over the two per day bag limit. These species were common in the marsh and flight patterns made them susceptible. Late in the season, whistling swans were at a new high (over 5,000), were fairly numerous in the marsh and made daily flights, as cans did, out of the Refuge. Although only a permit hunt, many swans were taken by hunters without this document. Alot of this illegal activity occurred on the firing line ridge along Division Road. This also caused trespass hunting and retrieving problems along the north boundary of the Refuge. Cattail Lake, just south of Division Road, was dried up for the 1980/1981 season to alleviate this problem and enforcement was increased also.

Refuge or agent-issued citations totaled 70 on the SWMA compared to about 15 in 1979/1980. Hunting violations were relatively few as hunting was poor. If waterfowl populations had been higher and hunting conditions better, possibly as many as 110 cases would have been made. Few overbag cases were made, except for violation of can and/or redhead limits. Because there was excellent feed in the Refuge during the 1980/1981 season, the firing line problem did not materialize. However, this year (1981/1982) submergent aquatics were scarce in the Refuge while in the North Marsh, the supply was good to excellent. This again resulted in large flights across the boundary as occurred in 1979/1980.
A total of 42 cases were made and about 16 for illegal take of swans. Hunting was generally poor, and try as they might, State wardens and "the Feds" could not come up with many infactions despite watching and checking numerous hunters. Perhaps last year's efforts are paying off. However, there was so much unsavory activity occurring along Division Road that many hunters complained. As of this writing, NDOW personnel finally plan to ask the Fish and Game Commission for a 200 yard retrieval zone along Division Road (the north Refuge boundary).

The NDOW has not been contributing its fair share of annual funds for the SWMA operations. This lack of federal aid monies has resulted in a lack of the FWS staff, especially for an assistant manager. The State was informed that Refuge personnel could not engage in enforcement duties.

Near the end of the goose season, a trespass problem developed primarily on private land. It was found that the southwest portion of the Refuge was not posted correctly. An 80 and a 40 acre party were left outside the Refuge boundary signs. Hunter activity in these areas resulted in both trespassing on Ted deBragga's newly developed fields and short stopping of geese. These crops and newly closed access routes have made the area attractive to geese. Improper posting, formerly not a problem, has now become a major one. This area will be posted correctly. In addition, NDOW will change State regulations to the effect that the entire Refuge portion of the SWMA is closed to entry during the waterfowl season, rather than closed to hunting as in the past. Generally, hunters respected the no off-road vehicle signs and road barricades. There appears to be less than typical late shootings or killing of non-game species, at least on the SWMA. Early shooting remains a problem.

As mentioned previously, little attention was paid to the problem of off-road vehicles outside of the Main Marsh. Many of these off-road vehicles visitors are not local. Each Labor Day and Memorial Day they descend on the Indian Lakes area. The NDOW has the major responsibility on public use enforcement and a concerted effort to curb violations on these holidays would help. However, the NDOW reported only two and one-half mandays spend on fishing enforcement (with one citation), eight days on hunting (with fourteen citations) and zero days on other regulations. One-half of the hunting enforcement occurred on the opening weekend in conjunction with FWS personnel. Booze and concert parties at Indian Lakes continue to be a chronic problem, along with vandalism. This year, 15 to 20 signs were damaged or destroyed. As usual, many fences were cut and gates left open. Another problem, the cutting of live and dead cottonwood is increasing. Increased costs and local scarcity of firewood makes this activity attractive. Some of the violators come all the way from Reno with chain saws and trailers. Enforcement of the eight day camping regulation reduced the amount of squatters on the SWMA. Overall, non-wildlife oriented recreational visits decreased 50% in fiscal year 1980 and this reduction was maintained in 1981.
I. EQUIPMENT AND FACILITIES

Crane operator, Graham, at work on the Goose Bypass Canal. This repair and cleaning helped us avoid flood damage in March of 1982.

Construction of the new 180 C.F.S. capacity D-Line Canal from Sagouspe Dam on the Carson River to the Stillwater Wildlife Management Area. The "Machine" in foreground is pulled by a catapillar tractor at a slow crawl, cement is dumped into side bins and presto - a cement ditch shaped and smoothed by the metal frame. Ditch and water-to-be aimed at Stillwater Mountains and Marsh in the background.
3. Major Maintenance

During FY 1981, this station coded $35,900 of FWS funds to cyclic maintenance. An additional $11,200 of 1921 federal aid money and $4,200 of YACC money were also used for maintenance activities. About $28,000 was used for facilities and structures of a total of $50,500. We spent $9,000 for culvert pipe and risers. Lacking cyclic maintenance funds for FY 1982, we still continued all fall to complete the graveling of the seven mile Hunter Road, our main access route.

We kept Ruby Lakes NWR's dragline going most of the year. First cleaning the fishway at Marble Bluff for fisheries people at Pyramid Lake then back to Ruby for most of the spring and early summer. Later, it was returned to the Lead Bypass Canal where operator, Floyd Graham, beefed up the spoil levee to increase its capacity to carry water. Then it was moved to the Goose Bypass Canal where it worked until fall, completing the cleaning of 36,000 cubic yards. This canal can handle at least 65 CFS and allow us to bypass Goose Lake and relieve pressure there.

While Ruby stole their dragline back, our 39 year old North West dragline was rendered operational and used to clean out the duck hospital pond, which had become silted in and had overgrown with cattail. The feeder canal was also cleaned. The North West was retired because it needs $25,000 in parts and could break down at anytime, between one hour to 300 hours of operation. It will be used only in an emergency.

A large John Deere backhoe (YACC property) was used when we could get it for a number of projects. This machine was shared and shunted between Desert NWR and Lahontan NWR. The backhoe was also used to dig launch ramps on the north side of Upper Foxtail, the northwest side of Lower Foxtail and the east side of Dry Lake, primarily for our use and not the public. These are next to Structure Number 2. Another spot was selected, but not completed on the southeast side of Cattail Lake, next to Structure Number 3: A new gravel ramp was put in the west center shoreline of north Tule Lake to replace the old landing obliterated in 1977 by the Lead Lake Bypass Canal. These were all rip-rapped with gravel.

A 24 inch pipe was put in the northeast corner of Pintail Bay to replace the old outlet structure on the northwest side, which is blocked by sand dunes. This will allow us to flush saline water through Pintail Bay and out to the Sink.

An old gravel pit in the Stillwater foothills was reactivated after obtaining a Bureau of Land Management permit. This permit was used as the shortest haul to the north end of Hunter Road. Upgrading and graveling Hunter Road, our main public access route, occupied much of our YACC time. This seven mile road required at least 10,000 cubic yards of gravel.

The various spoil piles left from dragline cleaning of drains and canals were flattened and smoothed using our old D-7 dozer to keep the area as natural looking as possible.
The Club Bypass Canal was constructed under State contract in 1978. Its levees are deficient and several water breaks had to be patched. Conditions never got dry enough to beef them up. It needs a D-6 or smaller machine.

Structure Number 24, between Swan and Swan Check, was designed for west to east water flows. That is not the direction we use now due to a lack of winter water flows. This structure had to be repaired and beefed up to resist the water pressure of the Swan Check Unit.

In October, U.S.G.S. water recorders were removed. With engineering assistance, we installed FWS owned recorders at Stillwater Slough, Indian Canal at Upper Lake, Indian Canal below East Lake, Paiute Drain at West County Road and on the Diagonal Drain. We saved $8,600 annually that we would have had to pay U.S.G.S. It does require some of our limited time to maintain and service these instruments, plus record and tabulate flows. A considerable amount of time was spent measuring water received, distributing this to fill, flush or maintain various units, to measure pool elevations, salinity, etc. and record the same. Each year we generate an annual water plan and then an annual water use report.

The chronic botulism problem mentioned previously occupied some of the staffs time from June to September.

Human and natural wear and tear on our signs occupied much of our YACC's time in repair and maintenance. All entrance signs were refurbished.

4. Equipment Utilization and Replacement

With our new mechanic on board for a full year, we continued our program of upgrading and servicing maintenance and safety of vehicles and heavy duty equipment. Some progress was made with the YACC crew graveling, with dozer, dragline or grader being ran alot. However, alot of our mechanic's time was spent on combating breakdowns. About $4,500 was coded to cyclic maintenance equipment. A new Dodge 4X4 pickup was purchased. A headache rack and wench were installed on this unit.

5. Communication System

A remote mini-base radio was acquired and installed at the Manager's residence. With no assistant, this allows contact with the crew when required on days off. It also provides a means of contact in an emergency and on weekends when the crew is off and no other radios are monitored.

7. Other

This fall, (FY 1982 funds) $3,000 worth of culvert pipe and risers were ordered to round out our supply in anticipation of the D-Line project.
J. OTHER ITEMS

1. Cooperative Programs

As mentioned earlier, cooperative programs include the 1948 and 1960 agreements establishing the cooperatively managed SWMA and the new D-Line agreement. The Refuge and the NDOW District office cooperates on eagle, waterfowl, waterfowl, colony birds, botulism, gizzard, public use and bag check surveys. Several meetings were held with personnel of the Fallon NDOW office concerning: Division Road firing line, illegal swan/can take, eight day camping limit, off-road vehicle use, neglected enforcement, water management, D-Line agreement/construction, Carson Pasture wetlands agreement, Lahontan Reservoir spills, grazing management and maintenance projects.

Water Power Resources Service and the Refuge shared the $14,400 cost for water recorder operations on the SWMA. U.S.G.S. provided this service.

2. Items of Interest

The FWS is concerned about the Carson Lake Pasture and other wetlands in the Lahontan Valley. The Carson Pasture agreement between TCID and NDOW was signed in 1980 and approved by the FWS. It would provide a $613,000 Fleishman Foundation grant, plus $200,000 interest for: visitor towers and improved facilities for water management on both the pasture and marsh areas; mandates a 50/50 split of water going to the area between the marsh and pasture areas (including, 30% of direct prime water flows allocated to the marsh); makes the Advisory Board a permanent body; identifies the marsh as an area to "maintain for wildlife purposes" and permits continued hunting. This agreement does not go into effect unless TCID utilizes a portion of the grant. Although a step in the right direction, the agreement does not meet the needs of the area as recommended by the Nevada Chapter of Wildlife Society (attached). The Environmental Assessment Report, a negative declaration prepared by Water Power Resources Service states that:

a. Total water used at Carson Pasture recently has been 50,000 to 60,000 AF. In dry or normal years, approximately 20% of water entering Carson Pasture reached "the Marsh". This amount, 10,000 to 12,000 AF, would sustain only 2,500 acres of wetland.

b. Under this agreement, 50% of the water entering Carson would be used in the marsh, 25,000 AF, or enough to sustain 6,000 acres of wetlands. In wet years, about 40,000 AF or 10,000 acres of marsh.

c. The 15,000 AF increase represents about a ten percent increase in the total inflow to Lahontan Valley wetlands.

d. Salinities in the marsh will decrease. Salinities have occasionally been over 65,000 micromhos. Under this agreement, the marsh can be flushed when over 35,000.

e. Aquatic vegetation, including nesting cover, will increase.
f. Waterfowl use days may increase to six million use days. Waterfowl use days were an average of eight million prior to 1960.

g. Redhead duck nesting will increase from 213-965 pair up to 1,000 pairs.

h. Snow geese use should increase from 80,000 to 150,000 use days and whistling swans from 2,000 to 15,000 use days.

i. The marsh should again support 3,000 white-faced ibis pairs.

j. Wildlife observation and hunting opportunities will increase.

k. No impact on endangered species.

Illa E. Cress retired on April 20, 1979 after 30 years of service at the Stillwater Wildlife Management Area. In January, 1981, William D. "Pete" Carter presented Illa with a "30 Year Certificate of Service for Retirement" plaque. Through the grapevine, we were informed that Illa never received this plaque at the time of her retirement.

A "Special Achievement Award" and a $300.00 monetary award was presented to Connie Erquiaga in February, 1982. Refuge Manager, Morris LeFever recommended her for the award based on the period of service from April, 1979 to October 10, 1981. Working only 30 hours a week, work accomplished was equal to a 40 hour work load of very high quality and is expected to continue.

3. Credits

All, Refuge Manager Morris C. LeFever and all typing, Refuge Assistant Connie Erquiaga.

K. FEEDBACK

The staffing and funding of the Refuge has been gradually decreasing in the past eight years, pending resolution of water problems and to avoid use of funds on a project that may no longer be viable ten to eighteen years from now. Meanwhile, the manager finds ongoing programs, except major construction by the FWS, continue at a heady pace along with worsening management problems, such as, unauthorized public use with only enough staff to hit the high spots. Although 3.3 million has been spent in water related developments, no BLHP or other funds were allocated in recent history for heavy duty equipment for basic maintenance to efficiently use water. As equipment and personnel can be transferred, why not keep them until Stillwater's future is resolved.

Perhaps money spent in the 1950's for major water facility construction would have been better spent on purchasing water rights. Perhaps, it is not too late. Shouldn't this be a higher priority than the purchase of a new area?
Pete Carter presenting Illa with "30 year Certificate of Service for Retirement" plaque.

LeFever presenting Connie with "Special Achievement Award" and monetary award for $300.00.
This manager now finds Stillwater Basin ranked as IRP #53. Too bad we no longer have a biologist to monitor wildlife and public use, water and habitat problems of the Humboldt Sink, Lahontan Reservoir, Carson Pasture and other wetlands of the Stillwater (Lahontan Basin). Two biologist used to monitor the Basin. Surely, we should use one for improved management mandated by IRP.

The writer also finds that whenever a refuge staff is reduced, each personnel loss or transfer is felt more keenly in that the continuity of management information is broken, knowledge and experience is lost, resulting in mistakes and reduced efficiency. The backbone of refuge system management is being broken by the substitution of temporary positions for permanent wage grade positions. Our reputation for expertise in habitat and wildlife management was based in no small measure to our cadre of field or maintenance professionals. Those who allocate permanent and part-time categories need to consider the types that will make the greatest long-term contribution to those project offices responsible for management of lands that supposedly serve as correct models of management for other agencies.

The late Manager, George Wiseman, stated in 1960 that under the agreements establishing the area, the FWS for one-half of the funds gets the authority for only one-sixth of the area and has to do all the work. Well, this hasn't changed, except that we now provide five-sixths of the annual operating budget. Recognizing that NDOW of late has obtained 1.3 million in construction funds (not their own), we feel that if staff and ongoing maintenance and management is to continue at a proper level, it is time for the NDOW to double or triple their annual share.
I. GENERAL

The Fallon National Wildlife Refuge lies north of the Stillwater Wildlife Management Area on what is primarily a barren alkali flat known as the Carson Sink. Primarily made up of alternative sections, it is included administratively and in the 1948 cooperative agreement as part of the Management Area.

Most years, not enough water enters the Sink for Fallon NWR for it to be a refuge. This year only 1,068 AF reached the area, 9,473 AF is needed to maintain vegetation. Last year 101,000 AF went to the Sink.

Salt extraction activities using collection ditches to the west and brine pumping proposals in the Sink to the northeast threaten to impact this refuge.
ANAHO ISLAND NATIONAL WILDLIFE REFUGE

Pyramid Lake, Nevada

ANNUAL NARRATIVE REPORT

Calendar Year 1981

* U.S. Department of the Interior
  Fish and Wildlife Service
  NATIONAL WILDLIFE REFUGE SYSTEM
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## III. HABITAT MANAGEMENT

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<td>B. Migratory Birds</td>
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</table>
I. GENERAL

A. Introduction

Anaho Island National Wildlife Refuge is located in the southeastern portion of the Pyramid Lake within Washoe County, Nevada. It is administered from the Stillwater Wildlife Management Area in Fallon, Nevada.

Anaho Island was set aside as a preserve and breeding ground for native birds by Executive Order in 1913. It was redesignated as a National Wildlife Refuge in 1940. The area is entirely surrounded by the Pyramid Lake Indian Reservation. Due to the Island's isolated location, few visits are made and no development has taken place since its establishment. Only pertinent sections of the narrative outline are included.

B. Climate and Habitat Conditions

Climate is similar to that covered in the Stillwater Wildlife Management Area narrative.

D. Systems Status

1. Objectives

The objective is to preserve the Island as a sanctuary for colonial nesting birds, while providing opportunities for beneficial research activities.

2. Funding

No separate funding has been available. Activities are carried out with funds and personnel allotted to Stillwater Wildlife Management Area.

III. HABITAT MANAGEMENT

A. Wilderness and Special Areas

The original 247 acres of Anaho Island has been classified as a Research Natural Area (Type Z-16 Birds). The entire exposed 747 acres is currently proposed to Congress as a Wilderness Area.

IV. WILDLIFE

B. Migratory Birds

1. Waterfowl

As use is always minor, output reports were discontinued.
2. Other Birds

A Special Use Permit, STL-545, was issued to Mr. John Anderson of the Avian Research Group, San Francisco State University, to conduct white pelican studies on the Island, after the Tribal Council approved. The primary purpose of the study was to document and determine mortality factors of white pelican young and their eggs. The final report has not been submitted, (see Anderson's preliminary report attached).

Another reason for this study was to determine the accuracy of our counting method compared with those derived from a researchers interim study. There is no written inventory plan on file, and methods used by various personnel have varied considerably, making past count data suspectful.

We have recorded the following:

<table>
<thead>
<tr>
<th>Species</th>
<th>Adults</th>
<th>Nesting Pairs</th>
<th>Young*</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Pelican</td>
<td>9,000</td>
<td>4,230</td>
<td>3,200</td>
</tr>
<tr>
<td>Double-Crested Cormorant</td>
<td>1,600</td>
<td>730</td>
<td>1,500</td>
</tr>
<tr>
<td>Great Blue Heron</td>
<td>250</td>
<td>120</td>
<td>275</td>
</tr>
<tr>
<td>California Gull</td>
<td>4,000</td>
<td>1,750</td>
<td>600</td>
</tr>
<tr>
<td>Caspian Tern</td>
<td>60</td>
<td>27</td>
<td>5</td>
</tr>
</tbody>
</table>

*To flight stage.

Our nesting pair count is 1,200 higher than Anderson's. Apparently, we need to take the time to differentiate between adults in the colonies and nesting adults. Also, we figure that only one of the pair is present and the other is off feeding, so each seen counts as "a pair".

One thing was clearly evident, there were nearly twice as many pelicans around. There were more nesting colonies and they were larger. Pelicans were not as "spooky" and stayed on their nests more consistently. We suspect there was harassment in 1980. Survival of young was unusually high, probably due to early nesting, before gulls nested, reducing predation. Our figure of 3,200 young was probably too high as Mr. Anderson recorded considerable loss of young prior to their reaching flight stage. Although worth-while, generally were found pair or nest counts only give trends. Pods of young, nearly grown pelicans need to be counted for better production estimates. For the first time in a number of years, a few caspian tern were produced.
## Comparative Data

<table>
<thead>
<tr>
<th>Species</th>
<th>Year</th>
<th>Nesting Adult</th>
<th>Estimated Young</th>
<th>Total</th>
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<tbody>
<tr>
<td>White Pelican</td>
<td>1981</td>
<td>8,460</td>
<td>3,200</td>
<td>11,660</td>
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<tr>
<td></td>
<td>1980</td>
<td>4,000</td>
<td>1,370</td>
<td>5,370</td>
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<tr>
<td></td>
<td>1979</td>
<td>3,500</td>
<td>1,575</td>
<td>5,075</td>
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<tr>
<td></td>
<td>1978</td>
<td>3,420</td>
<td>1,540</td>
<td>4,960</td>
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<td></td>
<td>1977</td>
<td>3,000</td>
<td>1,400</td>
<td>4,400</td>
</tr>
<tr>
<td>Double-Crested Cormorant</td>
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<td>1,460</td>
<td>1,500</td>
<td>2,950</td>
</tr>
<tr>
<td></td>
<td>1980</td>
<td>2,500</td>
<td>2,000</td>
<td>4,500</td>
</tr>
<tr>
<td></td>
<td>1979</td>
<td>2,300</td>
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<td></td>
<td>1978</td>
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<td>California Gull</td>
<td>1981</td>
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<td>600</td>
<td>4,100</td>
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<tr>
<td></td>
<td>1980</td>
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<td>1979</td>
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<td>900</td>
<td>3,875</td>
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<tr>
<td></td>
<td>1978</td>
<td>-----</td>
<td>800</td>
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New signs were erected at the Sutcliffe launch ramp at Pyramid Lake Reservation to tell the public why Anaho Island is closed to public entry. Anaho Island in background.

A hasty retreat from a Pelican production count on Anaho Island due to wind and hazardous seas.
Alpine Decree

As reported last month, Federal District Judge Thompson issued a final decree and opinion on December 18th on the 55 year old USA vs Alpine Land and Reservoir Co., involving use and control of the Carson River water. The Truckee-Carson District feels that the decision is 90% in their favor in that the landholders, not the Federal Government, own the water rights, and second, that the water duty was fair (3.5 AF for bottomland and 4.5 for benchland). The Federal Government has 90 days to appeal. TCID will probably only ask for clarification. All parties involved will probably seek clarification of certain points and the Pyramid Lake Paiutes may possibly appeal, as this has implications for pending cases involving Truckee River water and operation of Lahontan under this decision may result in increased diversions of the Truckee to the Newlands Project.

Judge Thompson set standards for water right transfers, which possibly opens the way to purchase water for the SWMA. He also took water right transfers from the Secretary of Interior and placed it with the State Engineer. Federal water rights were limited to storage, diversion and original water rights obtained prior to 1902. He tied this water to Lahontan Reservoir, requiring that 30,000 AF (the amount surrendered to the Government by pre 1902 water owners) be maintained here as a minimum pool. As TCID already holds 20,000 AF in practice, the difference may have to be made up by increased diversion from the Truckee. TCID believes that this decision invalidated Judge Gesell's decision and Secretary's 288,000 AF operating criteria.

In the decree Thompson mentions 50,000 acres of pasture land, and in his opinion, pointed to the "historic condition, that is the "pasture lands" are entitled to the use of whatever waters flow from the lower portion of the Project." Moreover, since this pasture has historically received the water, no one shall appropriate that water for other uses. The FWS is concerned about the apparent limitation to pasture lands. This language could support an argument that Stillwater NWR is not entitled to return flows (seepage or drainage).

There is some confusion about this point however. Thompson expressly forbade direct diversion of Lahontan. But, he did not clarify the use of prime water for Stillwater NWR or the Carson Lake Pasture, both important wildlife areas. Technically, water that has been used for irrigation and then returned to an irrigation canal is not being diverted directly from Lahontan. On the other hand, "whatever water flows from the lower portion of the Project", may mean only water from drainage canals. The attorneys and TCID Board think Thompson should be asked to clarify this portion of the decision. Also, the FWS years ago actively spread some water in brushland areas and developed over 2,500 acres of irrigated crop/pasture to assist TCID to "prove up" its water claim for irrigated (pasture) on lands other than water righted crop acreage.
By memorandum of December 11, 1980, you requested our views as to whether an appeal should be pursued in this case. We have carefully reviewed the decree entered. We find no basis for an appeal.

We are troubled by one part of the opinion. Beginning on line 12 of page 9 the court notes the United States owns lands within the Newlands Project area referred to as the Carson Pasture area and the Stillwater area. These lands receive water from drainage or seepage. The court identifies an issue from page 6 of the approved pre-trial order. Then the court recites:

"The foregoing is not a stipulation that the pasture lands are entitled to direct diversion from the Carson River of water for the irrigation of the pasture lands with a specific acre foot per acre duty. It is a recognition of an historic condition, that is, that the pasture lands are entitled to the use of whatever waters flow from the lower portion of the Project vested right lands to the exclusion of anyone who might seek to appropriate the waters for other uses." (Emphasis supplied)

Our concern arises out of the apparent limitation to "pasture lands". We perceive the possibility this language would support an argument that the Stillwater refuge is not entitled to return flows (seepage or drainage). It seems clear from the opinion that fishing and public recreation are beneficial uses. Although the Stillwater refuge was not established until 1943 it has been maintained since the establishment of the Newland Project by irrigation drain and return flow water. Prior to that the marshlands were maintained by natural flows from the Carson River.
By JIM HUSKEY

FALLON—"The decree was 90 percent in our favor," said Frederick G. Girard, Truckee-Carson Irrigation District (TCID) attorney during his discussion of Federal Judge Bruce Thompson's opinion and decree on the United States of America vs. Alpine Land and Reservoir Company. The case, dating back to 1926, was to determine who controls Carson River water.

TCID attorney James W. Johnson, Jr., said he was really pleased with the decision, though he didn't like the way some of it was written. "But we won the two most important points. First, the landholders, and not the federal government, owns the water rights, and second, the water duty was fair." The water duty, the amount of water a land owner may be delivered per acre per year, was set at 3.5 acre feet for bottom land and 4.5 acre feet for bench land. The difference comes about because of the percolation differences between the two types of land.

WATER RIGHT TRANSFERS

Judge Thompson also set standards for water right transfers. According to his decree, if a land owner changes the land use, say, from agricultural to domestic or industrial, the new use cannot consume more than 2.99 acre feet of water. This figure Thompson arrived at because it is the approximate quantity of surface irrigation water crops in this valley use per acre.

Girard pointed out that this was less than alfalfa used, but that crop also uses ground water. The consumptive figure, too, is lower than the delivery figure because some of the 3.5 and 4.5 seeps into the ground and returns to the river or canal systems. Also, the 2.99 acre feet can be delivered only during irrigation season.

LAHONTAN MINIMUM POOL

Thompson also decided the fate of some 30,000 acre feet of water rights the federal government owns. These rights, dated 1865 to 1902, originally belonged to land owners who lived in what was to become the Newlands Project. The land owners surrendered their water rights in exchange for receiving project water. Though the federal attorneys didn't ask for a decision on these rights, Thompson tied them into Lahontan Reservoir.

Citing beneficial use, he said the minimum pool for Lahontan would be some 30,000 acre feet, or the amount of water rights originally surrendered.

Both Girard and Johnson said this shouldn't affect TCID much, since the board already maintains a 20,000 acre foot minimum. But the attorneys felt that federal government, under pressure from the Pyramid Lake Indians, would challenge this part of the decree. Because Thompson ties the Carson water to Lahontan and also decreed that the Newlands Project will get a certain amount of water, that water most probably will have to come from the Truckee River. Which in turn means less can be diverted to Pyramid.

PASTURE LANDS

In the decree, Thompson mentions 50,000 acres of pasture land and, in his opinion, pointed to the "historic condition, that is, that the pasture lands are entitled to the use of whatever waters flow from the lower portion of the Project." Moreover, since this pasture has historically received the water, no one shall appropriate that water for other uses.

Girard felt that there was some confusion about this point, however. Thompson expressly forbade direct diversion of Lahontan. But he did not clarify the use of prime water for Stillwater or the Carson Lake Pasture. Technically, water that has been used for irrigation and then returned to an irrigation canal is not being diverted directly from Lahontan. On the other hand, "whatever water flows from the lower portion of the Project" may mean only water from drainage canals. The attorneys and TCID board are working to see if they think Thompson should be asked to clarify this portion.

STATE ENGINEER AND WATER TRANSFERS

Thompson also took water right transfers out of the hands of the Secretary of Interior and put them into the hands of the Nevada State Engineer Claude Newman. This will not mean that Newman must approve every sale of water rights or water righted lands. Rather, he must approve any change in point of diversion or place and manner of use for the water.

The attorneys and TCID board expressed some concern over the possibility that a local water right owner could sell his rights to say Sierra Pacific Power, would in turn transfer it to Reno. Girard, however, felt that while local water rights do belong to the landowners, any attempt to transfer those rights out of the Project would fly in the face of the Reclamation Act.
POSITION STATEMENT TO SAVE WETLANDS

The Nevada Chapter has prepared a concise, comprehensive position statement on the Lahontan Valley wetlands of western Nevada, for presentation to, and action by, the Secretary of the Interior. The wetlands discussed include the Stillwater Wildlife Management Area (WMA) and Carson Lake. The statement documents the history of these and other western Nevada wetlands, their current status, a discussion of the avifauna they support; and includes the Nevada Chapter recommendations for their management.

The wetlands have declined from 79,000 acres to 5,300 acres since 1929. Major causes for the tremendous decline include the Newlands Reclamation (irrigation) Project, and drought. The irrigation water, which comes from both the Carson and Truckee Rivers is managed by the Truckee-Carson Irrigation District (TCID). The Department of the Interior (Bureau of Reclamation) and TCID have been at odds for several years on management of the irrigation water and lands influenced by it.

Currently, Carson Lake and Stillwater WMA provide breeding habitat for the threatened White-face Ibis and winter habitat for the endangered Bald Eagle. Additionally, six bird species using the wetlands are on the National Audubon Society's Blue List.

The Chapter has made several recommendations: that 12,000 acres of high quality habitat be the minimum acceptable acreage at Stillwater WMA and that an annual allocation of 20,000 acre feet of water (in addition to the irrigation tailwater it now receives) be secured by the Secretary of the Interior to maintain Stillwater WMA; that 7,500 acres of high quality habitat be the minimum acceptable acreage at Carson Lake and that a TCID request for 26,500 acre feet of water to maintain the acreage be honored by the Secretary; cessation of vegetation conversions of wetlands to pasture; improvement of water delivery systems through the irrigation district to handle large unplanned flows; management of Carson Lake by qualified marsh management personnel; and granting authority for public agencies involved to purchase water rights should they become available.

In addition to the Secretary of the Interior, the position statement is being mailed to forty other organizations, individuals, and media. Any requests for copies should be directed to the chapter president, W.R. Brigham, P.O. Box 1806, Carson City, NV 89701.
Dear Mr. LeFever,

An I'm afraid rather belated thankyou for all the documents and names of people to contact that you have sent me. They are all much appreciated. My actual thesis is taking longer to write than I had expected, partially because I am still waiting for pesticide analyses from Patuxent, and partially because the problem has turned out to be more complex than I had expected.

Since a new breeding season will soon be upon us, I thought that I had better send you some preliminary results and conclusions, which you may or may not wish to act upon as you see fit. A more comprehensive report will be forthcoming.

1) Pelicans first observed on Anaho Island on March 2, 1981. Courting behavior and copulations were observed, and at least 15 eggs were laid. Nesting sites were abandoned on Mar.8, for no apparent reason. All eggs were destroyed by California Gulls. Note: This appears to be the earliest nesting attempt on record for Anaho.

2) By mid-March at least one breeding colony was established. By the end of the season a total of seven colonies had been used, ranging in size from an estimated fifty five pairs to a maximum of 1200 pairs. In all approximately 3000 pairs of pelicans nested on Anaho in 1981, a significant increase over 1980. Courtship and egg laying continued until the end of June, with peak hatching occurring in early to mid-May. Mean clutch size was 2 eggs, typical for the species, with a range of 1 to 4.

3a) Peak chick mortality occurred in the first ten days after hatching. Fratricide and parental neglect seem to be the primary causes of chick loss. There is NO evidence at this time of significant predation by the island's California Gull population, nor is there a noticeable difference between colonies containing cormorants, and those consisting of pelicans alone. The California Gulls seem to feed largely on carrion and abandoned eggs during the early portions of the season, and on fish regurgitated by young pelicans during the latter portion of the season. A survey of the available literature suggests that Gulls and Pelicans traditionally breed in close proximity at a variety of locations, giving further support to the hypothesis that no significant predation is occurring.

3b) As an amendment to 3a) above, it should be noted that California Gulls did take advantage of any disturbances within both the pelican
and/or the cormorant colonies to feed on any temporarily unguarded eggs or young chicks. Given a situation containing repeated disturbances, the gulls could have a major impact on the colonies' survival.

4) An estimated 1.01 chicks per clutch were raised to the fledging stage, giving a production figure of approx. 3000 young birds for 1981. Comparison of this figure with those available for other sites suggests that it is somewhat higher than elsewhere. Food stress is thus not regarded as an immediate cause of the colonies' decline.

5) There was no evidence that the study had any adverse effect on the colony.

6) There was no sign of human intrusion on the island, however several motor-boats were seen to pass within ten yards of the shore. On each occasion a great deal of agitation was visible in colonies closest to the shore, and in at least two instances both cormorants and pelicans temporarily abandoned their nests, leading to a degree of mortality among young chicks and eggs. The Anaho/East Shore channel seems to be a popular place for waterskiers when the rest of the lake gets too rough. Since this activity seems to require the participants to rush round and round at high speed, a potentially serious problem exists.

On several occasions jet aircraft with U.S. Air Force markings made passes over the island at altitudes of less than 200 feet. On each occasion this activity caused great alarm within all colonies, with many birds temporarily abandoning their nests. Numerous instances of gull predation were witnessed as a direct result. Frequent overflights of the island by a civilian helicopter engaged in mining concerns were halted following a conversation between the pilot and members of the research party.

7) Surveys of the island revealed Coyote scat in virtually all areas. While there was no evidence of mammalian predation on the islands bird population, it is clear that the present channel is a tenuous barrier at best. A species of ground-squirrel was observed on the island for the first time on record this spring, giving further evidence of the island's deteriorating isolation.

8) Pelicans were seldom observed fishing in Pyramid Lake, however the Popcorn Beach area at the mouth of the Truckee River is a favored loafing spot and possible drinking site. Research needs to be done on salt tolerance in the White Pelican.

9) The pelican population at Pyramid Lake appears to be highly variable, though differences in census techniques employed make accurate assessment of population trends quite difficult. A recorded high of 16000 birds is reported from the mid 1950's after which the colony seems to have undergone a severe crash from which it has never fully recovered.
Recommendations

1) Since much of the island's topsoil and vegetative cover is extremely sensitive to human trampling (tracks made by research team members at the beginning of the season were clearly visible three months later) I recommend continuation of the U.S.F.W.S./Tribal Council policy of closing the island to human trespass during both the breeding and non-breeding seasons.

2) Since egg-laying occurs throughout the breeding season, particular care should be taken from March through July to reduce the human presence on and around the island. Complete closure of the Anaho/East Shore channel to all motorized craft during this period should be taken under serious consideration. A "buffer zone" of at least ½ mile should be established around the island, and could perhaps be posted with buoys or some similar device, it being difficult to judge distances at water level.

3) The airspace over and around Anaho Island should be closed to all aircraft from February to September. Regional airbase commanders should be reminded each year of this ban.

4) The Popcorn Beach area should be closed to dogs during the breeding season, and signs should be posted requesting fishermen to give all waterfowl a wide berth. Since this is one of the more popular fishing sites around the lake, it would almost certainly be impossible to close it entirely, but the removal of dogs would greatly reduce stress on resting birds.

5) Studies of ways of maintaining the integrity of the east channel should be undertaken as soon as possible in the light of the continuing decline in lake levels. Severe habitat degradation may occur well in advance of the formation of an actual land-bridge.

6) Attempts should be made to standardize census techniques, and accurate records of the size and location of individual colonies would provide much useful information for future studies. At present it may be virtually impossible to establish reliable population trends due to variation in past census techniques.
That's all I can think of for the moment, as I said, I will send you a more comprehensive report later on. I hate to take up any more of your time, but I would be very grateful if you could let me look over the Narrative Reports from 1966 to the present. I am throwing all the chick/nest/adult/production figures I can get my hands on into the computer at school in the hopes that I can come up with some sort of reasonably accurate population trend. Different people seem to have used different "Fudge Factors" in calculating the total numbers of pelicans, but I'm hoping that given enough data points I can get rid of a lot of the drift. You very kindly sent me the production figures for the last 15 years, I am hoping that there will also be references in the Reports to total numbers and colony locations.

Also, do you know who, if anybody administers the Carson Sinks? Fritz Knopf lists them as a primary pelican feeding area in his paper on foraging site locations. I would love to know a bit more about them.

Finally, do you stock the Stillwater marshes with fish, and if so how many, and which ones? I expect that many more pelicans will be using the marshes unless Honey Lake fills up. Thank you very much indeed for all your help, I will send you more information as it becomes available.

Yours Sincerely

(John Anderson)

cc: The Chairman, Pyramid Lake Tribal Council