

SALTON SEA NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

FY 1974

**Department of the Interior
U.S. Fish & Wildlife Service
Calipatria, California**

FY 1974

NARRATIVE REPORT

SALTON SEA NATIONAL WILDLIFE REFUGE

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U.S. FISH AND WILDLIFE SERVICE

Calipatria, California 92233

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ANNUAL NARRATIVE REPORT

July 1, 1973 - June 30, 1974

I. GENERAL

A. Weather

Weather conditions were typical for our area this year. A high of 116° recorded during June was the hottest while the lowest recorded temperature was 28° during January.

Total precipitation for the year was 1.65 inches, well below the annual average of 2.77 inches. January was the wettest month receiving a total of 1.11 inches.

B. Habitat Conditions

1. Water

The Salton Sea level dropped during August 1973 to -230.75 feet. By December the Sea level had lowered to -231.30 feet, the lowest level during the year. In February the Sea rose to -230.70 feet and at year's end reached the highest level at -230.00 feet.

The 912 acres of bulrush impoundments required a total of 6,898.9 acre-feet of water, with 5,696.0 acre-feet free and 1,202.9 acre-feet purchased.

Ryegrass and barley pastures, excluding cooperative farming uses, required 126.4 acre-feet of water, with 47.0 acre-feet free and 79.4 acre-feet purchased.

Other water uses such as domestic, leach, soak, etc., required 142.2 acre-feet of water, with 17.2 acre-feet free and 125.0 acre-feet purchased.

2. Food and Cover

The alkali bulrush impoundments produced excellent feed for fall migrants. Heavy cattail patches in Unit I were fed off by snow geese.

Ryegrass and barley pastures provided sufficient feed for wintering Canada and snow geese.

In February, the refuge fed out 281 tons of milo during the supplemental grain feeding program. Over 108,000 pintail were congregated in and around the feeding site in Unit II. The program began January 29 and continued to March 5 when the grain supply was exhausted.

II. WILDLIFE

A. Migratory Birds

1. Waterfowl

Total waterfowl use days for Fiscal Year 1974 was 10,766,550, well below our 15½ million use day objective.

a. Waterfowl Depredation

Depredation complaints are usually the result of ducks or geese feeding on newly irrigated grain crops or alfalfa. This year only nine migratory bird herding permits were issued. One permit was issued for gulls and egrets and one for "small sparrow-like birds?" We assume the owner was having trouble with horned larks in his lettuce. Later the same individual had trouble with coots in the same crop.

b. Ducks

Total duck use days for the year was 9,703,380.

From October 15 - November 4 there were three black-bellied tree ducks in the area and on October 26 five birds were seen. This is the fourth record for this species in California.

On October 18, forty fulvous tree ducks were still present. Two birds were seen in Unit I on November 3. Early spring migrants appeared February 19 when forty birds were sighted at the New River delta.

During July, 6 male blue-winged teal were quite unusual. One bird was in Unit I on February 16.

One wood duck at the north end of the Salton Sea in July was very unusual since even in winter they are rare.

On July 2 and 21, white-winged scoters were seen on the west side and at the north end. One bird was at the south end December 16.

A surf scoter was at the north end of the Sea on July 2 and 21, one bird was seen at the south end on February 17 and two young males were seen along the west side of the Sea on April 27.

c. Geese

Total goose use days for the year was 1,063,170.

During July a total of ten black brant could be found scattered at both ends of the Sea. Two birds in Unit I on February 24 were unusual. Ten birds were seen at the south end from April 11 through May 12.

d. Swans

No whistling swans were seen in the Valley this year.

e. Coots

Total American coot use days for the period was 1,741,650. This was an increase of 511,200 use days over the FY-73 total.

2. Waterbirds

Most of the species of waterbirds were observed at sometime during the year. Unusual sightings were as follows.

On July 7, one immature brown pelican was seen at the Alamo River. Surprisingly, on July 15 one adult was sighted. Rarely are adult birds seen here. By early August there were five birds present and none were seen after August 19.

On September 11, one dead blue footed booby was found at the north end of the Salton Sea (here after N.E.S.S.). This was the only one reported for the period.

One July 7 and 31, one immature magnificent frigatebird was at the New River. From August 1 - September 14, there were two birds in this area. At N.E.S.S. on August 25 there were seven immatures present. On June 20, 1974, there were two immatures at the New River heronry.

On July 4, two immature Louisiana herons were seen at N.E.S.S. on August 4 through 11, one immature was observed at the New River delta.

During July through September 10, one immature little blue heron was present at N.E.S.S.

The refuge wood stork population peaked at 582 birds on July 12. Forty-seven birds were still present on September 28. One bird at N.E.S.S. from September 1-14 was very unusual since they are rarely seen there. Wood storks returned the following summer earlier than usual. Twenty-six birds were observed on June 4 at the Alamo River.

On July 2, one immature roseate spoonbill was seen in Unit I. By the end of July there were 33 birds in Unit I and 14 at N.E.S.S. On October 13, opening day of waterfowl hunting season, there were 35 birds present.

One bird was shot and killed that day. One immature was still on the Sea October 26, the last sighting of this species.

From July 1 - November 30, four American flamingos could be found around the river deltas. On December 1, 1973 a total of five birds were present. These birds were present during the first half of 1974.

During July at N.E.S.S., endangered Yuma clapper rails were heard calling. They were not previously known to occur there. In June 1974, a census at Unit I and the New River indicated an estimated 20 and 40 birds present, respectively. In Unit II, there were about 10 birds while on the State Waterfowl Management Area there were over 90 birds.

3. Shorebirds, Gulls, Tern, and Allied Species

Populations of the above groups were normal throughout the reporting period. Unusual sightings or occurrences are as follows.

On May 25, 1974 at N.E.S.S. one American golden plover was seen.

On July 15, 1973 at N.E.S.S. one black turnstone was very unusual away from the coast at this time of year. On September 10 in that locality two ruddy turnstones were seen. During spring migration several were seen: one on the west side April 27, five at Rock Hill on May 6, and four at N.E.S.S. on May 11.

On April 27, one wandering tattler was in Unit I.

On April 27 and 28 on the west side of the Sea, one curlew sandpiper in breeding plumage was the third record for California but the first for the spring period. Spring migration also brought one semipalmated sandpiper to the refuge on May 11 and two were seen May 12.

Two dunlin in July at N.E.S.S. were unusual.

One stilt sandpiper at N.E.S.S. on August 4 and three there on August 16 were new locality records.

A single red phalarope was at N.E.S.S. from July 14 through August 20 and was seen in Unit I prior to that time.

A glaucous-winged gull was observed on December 7 near Brawley. An immature mew gull near Calipatria on January 26 was quite rare.

On September 16 at N.E.S.S. one black-legged kittiwake was an outstanding observation.

On July 21, a common tern was at Unit I and in the spring three were seen May 11 at N.E.S.S.

During July 1-21, at N.E.S.S. up to two least terns could be seen. In the spring one was there May 25.

Black skimmers were nesting at the south end of the Salton Sea during July. Out of three nests only one was successful, raising two young. Up to ten birds were seen at this time. On August 25 and 26 there were eleven skimmers and two were last seen on September 8. They returned in the spring on April 26 when one bird was seen near Unit I and up to four birds could be seen at N.E.S.S. the same month.

4. Doves, Pigeons, etc.

White-winged, ground, and mourning dove populations were normal during the year.

An unusual sighting was that of a band-tail pigeon on May 9 at refuge headquarters, outside its normal range and habitat.

B. Upland Game Birds

Gambel's quail populations were slightly higher than last years due to better production.

A few ring-necked pheasants are seen throughout the year.

C. Big Game

None present.

D. Fur Animals, Predators, Rodents & Other Mammals

All mammal populations appeared to be fairly stable throughout the year.

E. Hawks, Eagles, Owls, Crows, Etc.

An endangered American peregrin falcon was seen on the refuge October 26. Rare prairie falcons were seen during the fall period. Ferruginous hawks, a peripheral species, were seen during the fall-winter period. A red-shouldered hawk at the northend of the Salton Sea on December 19 was outside its normal range. An osprey seen on September 28 at the south end and one on February 25 at the north end were the only ones sighted during the year. Two immature bald eagles at the south end on November 26 - December 15 were the only ones seen. Another unusual sighting was a single rough-legged hawk near the New River on November 27. Turkey vultures, marsh, sharp-shinned, Cooper's, red-tailed, merlin, and American kestrel were seen during migrational and wintering periods.

Barn, short-eared and great-horned owls were seen occasionally during the year. The western burrowing owl, a common resident, was seen throughout the period.

Common crows are establishing a wintering area here in the Valley. Up to 13 birds were here all winter. They were first seen on October 16 when 5 birds were present.

F. Other Birds

For the first time on record barn swallows nested in the Imperial Valley in Unit I and raised broods in May and July 1973.

Two first records for south eastern California were: a Nuttall's woodpecker near Unit I on September 3 and an acorn woodpecker in that area on November 4.

Unusual late summer and fall records for the south end of the Salton Sea are as follows: two black-throated sparrows August 4-11; single red-breasted nuthatch on September 16 and October 26 and 2 on October 24; a black-and-white warbler at refuge headquarters on October 19; a Townsend's solitaire on October 27; one golden-crowned kinglet on November 4; one McCown's longspur on November 18 and one Lapland longspur on November 23.

Unusual spring 1974 sightings were: ~~one~~ Tennessee warbler near Unit I on May 11 and one singing male pyrrhuloxia on April 28.

G. Fish

Over one-half million fish, croaker and sargo, were killed July 4-5 due to low dissolved oxygen and high water temperatures.

During the spring of 1974, California Department of Fish and Game biologists sampled fish and found encouraging evidence that orange-mouth corvina are continuing to spawn despite the Salton Sea's increasing salinity. However, if it continues to increase to 40,000 ppm the fishery may be in serious danger.

H. Reptiles and Amphibians

Nothing unusual to report.

I. Disease

Some birds were observed to have botulism in early October 1973 but by the opening of waterfowl season few, if any, were seen.

During April 1974 an outbreak of botulism occurred at the south end of the Salton Sea. Shorebirds suffered heavily while ducks were only slightly affected due to the timing of the outbreak. Over 1,000 shorebirds of ten different species were picked up in addition to coots, grebes, and ruddy ducks. Less than two hundred ducks were killed.

III. REFUGE DEVELOPMENT AND MAINTENANCE

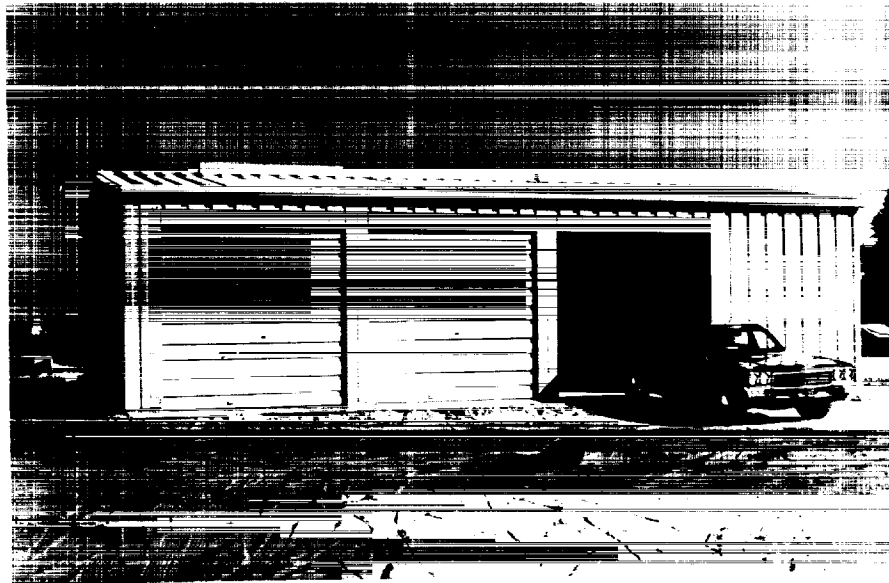
A. Physical Development and Maintenance

No major development projects were funded this year, however, the continuation of soil quality improvement projects were in effect in tracts C, Johnson, and Union.

The north half of tract C was leached all year and will be leveled next year. Approximately 20,000 feet of tile was cleaned in the Johnson tract and a cracked irrigation ditch was resealed and three ditch level controls were replaced. In the Union tract, 6,630 feet of 3" tile was replaced with a plastic line.

Diking was started on the road to Rock Hill and along the south side of tract 6. This diking is due to the rising level of the Salton Sea which continues to threaten our existing marsh units.

The Division of Law Enforcement contracted the construction of a metal storage building at the Refuge headquarters for storage of their boats and other law enforcement supplies. On November the building was inspected and accepted by our Division of Engineering.

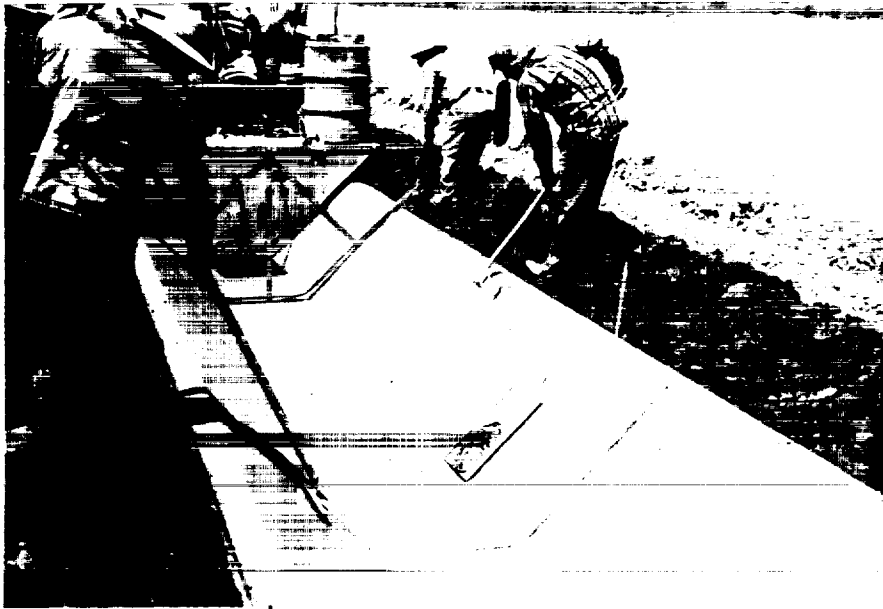


Completed metal storage building

A 2,350' concrete irrigation ditch was completed on tract 1-2 of Unit II during July. The Imperial Irrigation District awarded the contract on this tract of land which we lease from them. This installation completes the work in the tract as mutually agreed to in the lease provision, (Contract 14-16-001-201 and 14-16-001-202) dated January 28, 1969. This also includes sub-surface drainage tile and land leveling accomplished previously.



Concrete being poured into formed ditch.



Grooves being formed in sides of concrete ditch.



Concrete sealer applied to finished ditch, to retard loss of moisture.

B. Plantings

1. Aquatics and Marsh Plants

A total of 912 acres of refuge lands were managed for the production of alkali bulrush. This year we totally volunteered the crop by maintaining water levels in various units until mid June, at which time we drained the ponds for the hot summer months.

By utilizing as much free water as possible and reducing paid water during the high evaporation months we were able to substantially reduce water costs and increase the quantity and quality of bulrush stands. A further refinement of this process will be followed next year.

2. Trees and Shrubs

Nothing to report.

3. Upland Herbaceous Plants

Nothing to report.

4. Cultivated Crops

A cooperative farming agreement was reached with adjoining land owners who planted and furnished water at no cost to the government on 503 of the 728 total acres the refuge farms as cultivated crops.

The refuges share consists of all the green browse available during the winter and 25 percent of the grain which is harvested by the cooperator during the summer.

A purchase agreement was completed on two tracts totaling 354 acres. These two tracts were farmed by our cooperative farmers in annual ryegrass during the winter and sorghum grain (milo) during the summer. The milo was harvested and stored for depredation feeding during February.

The Riedman tract (158 acres) lease was not continued this year due to the additional land purchased and the increased lease cost.

Green browse crops were 80 percent consumed during the winter period of grazing snow and Canada geese as well as wigeon and pintail ducks.

C. Collections and Receipts

1. Seeds and other Propagules

Approximately 3,400 pounds of annual ryegrass was purchased from Vogel's Feed and Seed and Desert Seed Company.

In January, we received 281 tons of milo grain from Commodity Credit Corporation in Casa Grande, Arizona to supplement our refuge grown grain for waterfowl depredation feeding during February. This grain was stored at Vogel's Feed and Seed in Brawley until completely fed out.

2. Specimens

The two included Migratory Bird Salvage Reports for Calendar Year 1973 and 1974 represent the specimens collected on the refuge and the disposition of each.

D. Control of Vegetation

Vegetation control consisted of discing salt cedar on borders, roads, and canal banks. Burning was used to control rank growth of cattail on approximately 100 acres in Unit I.

E. Planned Burnings

Reported above.



Bureau of Sport Fisheries and Wildlife

Approval Expires

11.

Edw. Jones

REPORT OF MIGRATORY BIRDS TAKEN - Calendar Year 19 73

Permit Number:

1-210

Refuge Manager
Salton Sea National Wildlife Refuge
P. O. Box 247
Calipatria, CA 92233

Permit regulations (50 CFR 16) require you to submit a report on your collecting and/or salvage operations ON OR BEFORE JANUARY 10 of each calendar year or whenever requested. Failure to comply is cause for revoking your permit. Please complete the form below by listing the migratory birds, bird nests, or eggs taken under your permit during the calendar year. Indicate "NONE" if no collecting or salvaging was done. Mail completed form to: Regional Director, Bureau of Sport Fisheries and Wildlife.

P. O. BOX 3737
PORTLAND, OREGON 97208

AOU Number	Common Name	State (Where taken)	NUMBERS COLLECTED			No. of birds salvaged
			Birds	Nests	Eggs	
169	Snow goose	California				10
172f	Canada goose	"				7
170	Ross' goose	"				1
143	Pintail	"				14
183	Roseate spoonbill	"				1
495	Brown-headed cowbird	"				2
510	Brewer's blackbird	"				11
497	Yellow-headed blackbird	"				23
298	Red-winged blackbird	"				18
Permittee's signature <i>Stephen S. Vehrs</i>		TOTALS. . .				87

Form 3-430a
(Revised September 1972) *Refuge Mgr.*

Ques.

MIGRATORY BIRD SALVAGE REPORT - Calendar Year 1974

Common Name	Initials	Address	If negative report, check here <input type="checkbox"/>	Banding I
Alton Sea National Wildlife Refuge		P.O. Box 247, Calipatria, Calif. 92233	check here <input type="checkbox"/>	6517

You hold a scientific collecting permit and report salvaged or collected birds to the regional offices, check here not report those same birds on this form. Do, however, report all band recoveries to the Bird Banding Laboratory on a 3-1801. Do not band salvaged birds. Mail completed form (including negative report) to the Bird Banding Laboratory.

I #	Common Name & Band No. (if banded)	Cause of Death	Date of Bird's Death	City & State Where Salvaged	Public Institution Where Specimen Was Sent (name and address)	Date Spe Sent
054	Ring-billed gull	Unknown	unknown	SSMNR, California	Calif. State University Long Beach, California	1/3/74
006	Pied-billed grebe	"	"	"	"	"
225	Avocet	"	"	"	"	"
418	(2) Poor-will	"	"	"	"	"
360	American Kestrel	"	"	"	"	"
247	(4) Western sandpiper	"	"	"	"	"
143	(2) Pintail	"	"	"	"	"
137	American wigeon	"	"	"	"	"
190	American bittern	"	"	"	"	"
135	Gadwall	"	"	"	"	"
004	(4) Eared grebe	"	"	"	"	"
172	(2) Canada goose	"	"	"	"	"
170	Ross' goose	"	"	"	"	"
169	(2) Snow goose	"	"	"	"	"
143	(11) Pintail	Killed	2/9/74	"	Calif. Dept., Fish & Game	2/9/74
214	Sora	Unknown	"	"	Los Angeles County	"
258	(2) Willet	Shot by hunter	"	"	Nature Centers	"
249	(2) Marbled godwit	"	"	"	"	"
147	Canvasback	Unknown	Unknown	"	"	"
169	(2) Snow goose	"	"	"	"	"
360	American kestrel	"	"	"	California State Univ.	"
054	Ring-billed gull	"	"	"	Long Beach, Calif.	"
258	(7) Willet	Shot by hunter	"	"	"	"
249	(2) Marbled Godwit	"	"	"	"	"
232	(2) Long-billed Dowitcher	Unknown	"	"	"	"
169	(3) Snow goose	"	"	"	"	"
170	Ross' goose	"	"	"	"	"

MIGRATORY BIRD SALVAGE REPORT - Calendar Year 1974

Name	Initials	Address	If negative report, check here <input type="checkbox"/>	Banding Permit No.
Salton Sea National Wildlife Refuge		P.O. Box 247, Calipatria, Calif. 92233	check here <input type="checkbox"/>	6517

You hold a scientific collecting permit and report salvaged or collected birds to the regional offices, check here not report these same birds on this form. Do, however, report all band recoveries to the Bird Banding Laboratory on form 3-1807. Do not band salvaged birds. Mail completed form (including negative report) to the Bird Banding Laboratory.

#	Common Name & Band No. (if banded)	Cause of Death	Date of Bird's Death	City & State Where Salvaged	Public Institution Where Specimen Was Sent (name and address)	Date Spec Sent
232	(3) Long-billed dowitcher	Unknown	Unknown	SSNWR, California	San Jose State Univ., Cal.	6/20/
497	Yellow-headed blackbird	Poisoned	"	Calipatria, California	" "	"
167	Ruddy duck	Unknown	"	SSNWR, California	San Diego State Univ., Cal.	"
169	(2) Snow goose	"	"	"	California State Univ. Long Beach, Calif.	"
172	Canada goose	"	"	"	"	"
270	Black-bellied plover	"	"	"	"	"
247	(4) Western sandpiper	"	"	"	"	"
214	Sora	"	"	"	"	"
554	White-crowned sparrow	"	"	"	"	"
216	Mourning dove	Poisoned	Unknown	Calipatria, California	"	"
498	Red-winged blackbird	"	"	"	"	"
232	Long-billed dowitcher	Unknown	"	SSNWR, California	"	"
197	Snowy egret	"	"	"	"	"

IV. RESOURCE MANAGEMENT

Nothing to report.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Banding

In February 1974, the refuge color marked the first lesser snow goose for the U.S./U.S.S.R. Cooperative Environmental Agreement Project B-8. The birds were marked with green plastic neck collars, with white letters and numbers, matching green tarsus bands and regular F&WS bands. The last two digits of the F&WS band matched the two numbers on the neck collars and tarsus bands. Only 24 birds were marked because we were asked to mark geese too late in the spring.



First goose marked for U.S./U.S.S.R. cooperative project.

Other birds banded during the year were: 5 Canada geese, 42 snow geese (no collars), 655 pintail, 1 green-winged teal, and 28 snowy egrets.

Refuge personnel assisted a research student in banding and color marking (green wing tag/orange dye) cattle egrets in the New River heronry.

One partial albino drake pintail was captured on February 14 during waterfowl banding efforts.

All banding outputs totaled 200,000 RBU's.

B. Ecological Monitoring

Refuge personnel participated in or completed the following ecological monitoring programs: California Department of Fish & Game Shorebird survey, annual Audubon Christmas Birdcount (12/18/73), Wildlife Services Annual Coyote Census (9/10-16/73), the North American Nest Record Card Project, two Breeding Bird Survey routes for the MBPS, fluorscoping of waterfowl for lead shot by the California Dept. of Fish & Game (2/9/74), and Yuma Clapper Rail census (endangered species) by California Fish & Game (6/12/74), all for a total of 700,000 RBU's.

C. Other Cooperative Programs

Refuge personnel participated in the following cooperative projects: Duck Club Feeding Permit study with Division of Law Enforcement and California Department of Fish & Game (Oct. 73- Mar.74), Earthquake and Geothermal research by the U.S. Geological Survey; Salton Sea Project - a water quality study by fourteen state and federal agencies; and one off-refuge enforcement project with CF&G and LE. All cooperative program outputs totaled 170,000 RBU's.

D. Studies and Publications

A Refuge Management Study (#1) entitled Population Dynamics of Two Breeding Colonies of Cattle Egrets (*Bubulcus ibis*) in Southern California was initiated in March 1974 by a San Diego State University student. Her target date for completion of this unpublished Masters thesis is July of 1975. No refuge funds are programmed for this study. A total of 100,000 RBU's for this output were realized by the refuge.

VI. PUBLIC RELATIONS

A. Recreational Uses

A total of 53,623 visits to the refuge were recorded during Fiscal Year 1974. Visitor use was down by 4,562 visits from that of Fiscal Year 1973.

B. Refuge Visitors

Frequent visits were made by state and federal employees throughout the year.

C. Refuge Participation

Refuge personnel attended various meetings and conducted numerous programs throughout the year.

D. Hunting

Again this year California had a split ninety-three day waterfowl hunting season. The season opened on October 13, 1973 through November 23, then reopened eight days later on December 1 and ended on January 20, 1974.

This season hunters did extremely well on snow geese. Almost 6,000 snow geese were checked through the state check station. Of that total, 1,333 were taken on the refuge public hunting area. We estimate that duck clubs near the refuge and boundary hunters killed an additional three thousand for a total of almost 9,000 snow geese, or half the wintering population. The photograph below was a typical scene around the refuge on most weekends.



A total of 1,101 hunters bagged 2,097 birds for an average of 1.90 birds per hunter for the season on the refuge public hunting area.

E. Violations

Refuge personnel directly participated in the apprehension of 255 hunting violations. Trespassing violations remain the most numerous offense, accounting for almost 25% of the total.

F. SAFETY

Staff and SAFETY meetings were held monthly.

The station SAFETY record as of June 30, 1974 was 5,443 days without a lost time accident.

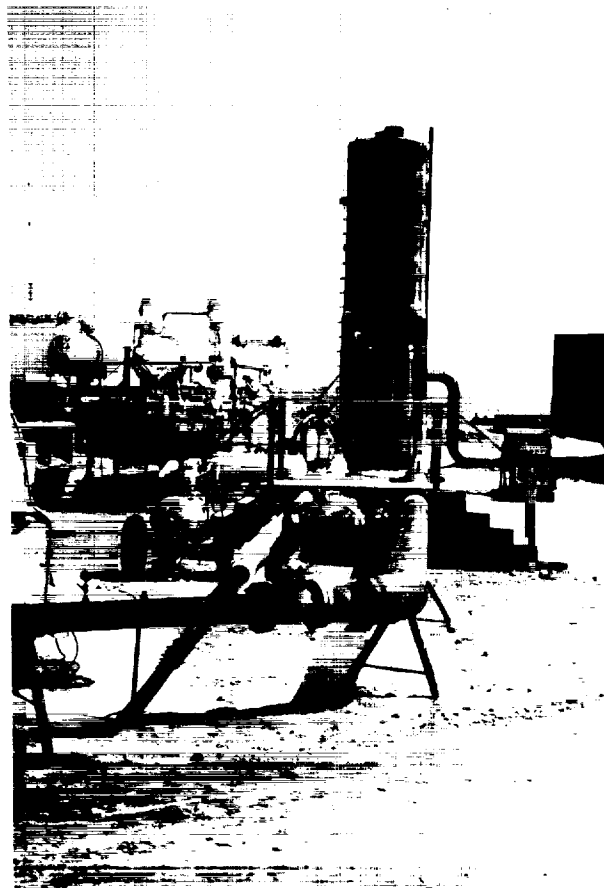
Two accidents occurred during the last half of the fiscal year. Neither were lost time accidents.

VII. OTHER ITEMS

A. Items of Interest

The San Diego Gas and Electric Company and Magma Energy Incorporated continues research and testing at their geothermal well site one mile south of headquarters. An additional well was drilled and the well head sealed off for the present time approximately 200 feet east of the refuge headquarters site. This well is on private land and the companies propose a second well $\frac{1}{4}$ mile north, also on private land, however bordering the refuge.

Problems to date for the companies include being unable to transfer heat in the heat exchangers for any length of time, since mineral deposits on walls of the pipes plug up the system. We have been monitoring the operation and thus far conflicts with wildlife populations have been either minimal or non-existent.

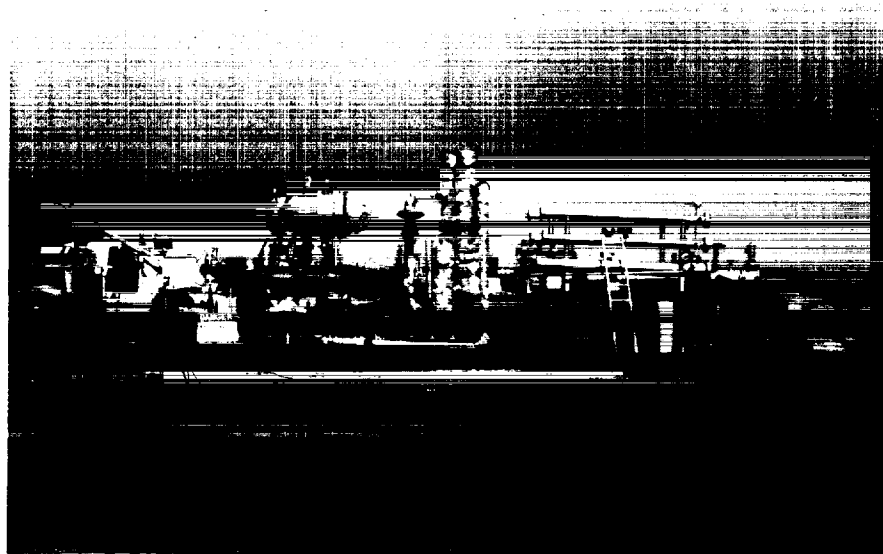


MAR 75

Pipe leading from well head to experimental heat exchanger equipment.



Magma Energy's geothermal well head, drilled to a depth of about 2,500 feet, located one mile south of refuge headquarters.



Experimental heat exchanger equipment testing the use of geothermal brine to heat iso-butane into a gas which would then propel the turbine. The use of live steam is not possible at the present time due to the corrosiveness of the brine on turbine blades.

SIGNATURE PAGE

Submitted by:

Stephen R. Vehrs

(Signature)

Refuge Manager

(Title)

Date: 3/7/75

Approved, Regional Office:

Date: _____

(Signature)

(Title)