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SALTON SEA NATIONAL WILDLIFE REFUGE

AND

WATER DEVELOPMENT AREAS

NARRATIVE REPORT

MAY - AUGUST-1951



UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

BRAWLEY, CALIFORNIA

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REFUGE PERSONNEL

Regular

Edward J. O'Neill	Refuge Manager
Clyde W. Stewart	Foreman - Farm Operations
Jerryl W. Sexton	Clerk-Typist
Will T. Wesley	Maintenance-Man
Jose Barros	Maintenance-Man
Alfred W. McFarland	Tractor Operator
Melvin Ford	Tractor Operator
W. Carl Ford	Tractor Operator
Chesley H. Williams	Tractor Operator

Temporary

John Barros	Irrigator
Sylvester Barros	Irrigator
Ray W. Bennett	Tractor Operator
Raymond L. Gash	Carpenter
J. W. Hamilton	Dragline Operator
William E. Hoff	Laborer
Leon Lesicka	Laborer
William L. Lynch	Irrigator
Owen Schutt	Irrigator

≡ NARRATIVE REPORT *

I. GENERAL CONDITIONS

A. Weather Conditions

The hot weather conditions this period were seemingly felt more by folks than last year.

A total of four tourists perished from heat exhaustion and a known number of at least nine Mexican field hands and wet backs collapsed and succumbed to the rigors of stifling July and August hot, humid weather. The shade of the nearest tree and the cool, refrigerated bar rooms were indeed popular with the people that remained in the valley during the summer.

On August 26th renegade rain clouds, which apparently worked in from the Gulf of California, dumped torrents of water over the west-central portion of Imperial Valley causing widespread damage.

Approximately two inches of rain fell south of the refuge's Unit I. Not much precipitation perhaps, for some regions where vegetation is abundant; so sudden was the storm on the adobe soils of the desert, a near deluge resulted. Canals carrying a normal load of some 4,000 second feet received the run-off until dirt banks were topped and holes ripped in the system. Highway 99, west of Westmorland and Highway 80 near Seeley were covered with three feet of water.

Business houses at street level were flooded. Many cars were washed off the highway into the desert. Traffic came to a standstill.

In Brawley, ill-natured hotel guests waded about the lobbies in six inches of water. South of refuge headquarters homes were filled with water and mud three feet deep when the West Side main canal broke through. Hundreds of tons of baled hay floated away to lower land. One large apiary of honey bees along Highway 99 was completely afloat.

Two days later, under clear skies, crews began repairing the damages, train schedules were resumed and everywhere citizens were digging out of the ole car for the first trip to town. The Imperial Irrigation District reported numerous modern concrete structures reduced to rubble by raging waters. Many drains and canals were packed tight with sand and clay debris. The Irrigation District estimates indicated a total damage of \$53,000 to irrigation installations alone.

Unit II of the refuge received about one inch of rain with no damage. When the swirling, muddy water subsided, all buildings

including the office at headquarters, contained four to six inches of clay and water. Stacked lumber was washed out into the fields north of the storage lots. Along the entrance road here and there small ponds of stranded fish were found where flood waters had been. Drowned Cottontails and Jack Rabbits lay dead over much of the area. Many surviving jacks later succumbed to the sticky clay which adhered to feet and legs until the animals became exhausted.

Material loss on the refuge was nil, but the storm set farming operations back some three weeks as all hands turned to road repairs and general cleanup of stubborn yellow clay, from tools, floors, etc.,

Tabulated below is the weather data for the period as compiled by the El Centro Naval Air Station at El Centro, California.

<u>MONTH</u>	<u>MAXIMUM</u>	<u>MINIMUM</u>	<u>PRECIPITATION(Inches)</u>
May	112°	61°	0
June	115°	69°	.15
July	113°	68°	1.02
August	111°	63.5°	Trace

B. Water Conditions

Early in June the Imperial Irrigation District completed final details on the New River proposed channel and cut the diversion plug which was sending all flowage through the north portion of Unit I.

Through the period the muddy river flowed due north and remained in its man-made channel, carrying heavy silts some four miles farther out into deeper waters of Salton Sea.

C. Fires

No fires occurred on the area during the period.

II. WILDLIFE

A. Migratory Birds

1. Population and Behavior

The first days of the period saw only an estimated 1,280 ducks and coots present. As the weeks passed population figures steadily lowered until by mid June, 80 Cinnamon Teal, 30 Shovelers, 8 Redheads, 10 Scaup, 20 Ruddy Ducks, 20 Fulvous Ducks and 10 Pintails represented the total duck population. At the same

time, two White-fronted and two Lessor Snow Geese were present, apparently cripples which couldn't migrate.

Fulvous Tree Ducks showed up the last days of the previous period. By June 30th some 40 were here; one month later, 200; and at the close of the period there was more than 300 present. This species again nested on the refuge with a fair percentage of successful broods.

During the summer Pintails dropped as low as three individuals in mid-July; at that time Cinnamon Teal were down to ten; one Baldpate was seen and a total of 50 Ruddy Ducks was all that could be found on the units.

The last two weeks in August witnessed the first influx of birds when 400 Cinnamon Teal, 28 Baldpates and 3,200 Pintails showed up. By the last of the period 4,570 Pintails, 300 Green-winged Teal and 1,200 Cinnamons were present. Together with the Ruddy Ducks, Coots and Shovellers the list brought the waterfowl population up to 7,150.

2. Shorebirds, Gulls and Terns

Shorebirds, which remained and nested at Salton Sea this summer, included Killdeer, Black-necked Stilts and Avocets.

Wood Ibis returned to the valley in May when a few early migrants showed up. By July 28th some 2,200 were here. A peak of 3,000 occurred the week of August 20th.

During June, Mr. John Parish of the State Fish and Game reported the occurrence of a single Roseate Spoonbill at the Hazard Area, east of Unit II.

3. Marsh and Water Birds

Great Blue Herons, Egrets and Cormorants again nested in Unit I utilizing the flooded Athel trees as in previous years.

4. Food and Cover

The diversion of New River, with its concurrent drying of Unit I and creation of a new delta area out in Salton Sea, made the general refuge area very attractive for shore and marsh birds.

B. Upland Game Birds

This season appears to us to have been the most successful in several for upland birds. Quail and Pheasant both survived well on the refuge areas.

Hatchery-reared birds, as released by local State Fish and Game Department men, found excellent acclimation in the vast acreages of Cotton and Castor Beans being grown over the valley.

The hatchery chicks have survived well and by the end of the season it is proposed by the State to release about 10,000 birds in the valley.

C. Other Birds

1. Population and Behavior

On June 6th members of the Salton Sea Atomic Energy Commission Base reported the occurrence of a Brown Pelican on Salton Sea.

The White Pelican-Tern nesting colonies on Salton Sea were again visited with AEC escorts and some 200 young were banded in June.

2. Food and Cover

No change noted.

D. Fur Animals, Predators, etc.,

No change noted.

E. Fish

When New River was diverted the resultant ponds left a large number of fish stranded. Rescue efforts resulted in obtaining a large number of Mullet for transfer back to New River. Most of the Mullet didn't survive the handling, muddy waters and high temperatures involved. Some small ponds were inaccessible for transfer of game species which were lost outright. A large number of Carp stranded in fract 11 of Unit I died also.

Nearly 100 Carp were rescued by the men on their own time, in support of a proposal to release them in a flooded park or gutter at Brawley for the children to scramble over. The Carp were held in an irrigation ditch until all died while local city dads argued over the technicalities of right-of-way, use of city water, etc.,

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

The lawns and most of the plantings at sub-headquarters continued to survive through the period. Alkali in some spots has come to the surface noticeably.

Excavations were completed, forms set and a concrete floor was poured for the Armico metal building at sub-headquarters. Due to irrigation of alfalfa adjacent to the site, water rose to within 42 inches of the surface forestalling the grease pit portion of the floor. During July erection of the building was started and by the end of the period this structure was nearing completion.

A wooden, platform-combination storage shed was constructed at sub-headquarters for vehicles, seed and grain storage. All of the roofing was from lumber and shingles salvaged at Van Nuys one year ago.

The P&H dragline, during the period, was employed clearing and constructing six miles of service ditch and two miles of deep drains. During August the first mile of levee was constructed for water impoundment in Tract 12 of Unit I.

In Unit II, 300 acres of land west of Red Hill were surveyed, marked and contours constructed with bulldozers. By early July all concrete drops and pipe were installed and after planting the area in Wild Millet the unit was flooded.

It is of passing interest to note that the contoured area about Red Hill presents a few problems. This area is bisected by an old river diversion levee. The land west (Sea front side), which might normally be lowest, is 2.44 feet higher than the land east of the levee. Furthermore, the north side of the tract, which would normally be lower than the south, is nearly 2 feet higher since it was once the Alamo River delta. In order to flood the area it was necessary to construct a ditch parallel to the Vail 1/2 canal and cross the district drains with a flume.

The new contoured marsh area at the north end of Unit I received flooding during the period. On the upper contours Wild Millet and the transplanted bulrush flourished. By the last days of the period it was well evident that Cattails would eventually strangle all attempts to create a natural marsh area for Alkali Bulrush if the Cattails are not controlled next spring. On the other hand, geese will perhaps utilize every acre of Cattails produced on the new areas.

Tract 15, Unit II was flooded under free leach water contract with the Imperial Irrigation District. After 90 days, if the area is sufficiently free of salts, it will be drained and farmed. This, provided the Lea Act Committee does not decide to open the area to shooting, in which case it can be re-flooded.

Leveling work by carryall scraper in Tract 13, Unit II was completed after a great number of breakdowns with tractors and equipment.

Some 25 miles of boundary was patrolled, signs tightened or replaced, and encroaching vegetation trimmed back in preparation for the September dove hunting season.

B. Plantings

1. Cultivated Crops

(a) Unit I.

The barley crops mentioned in the previous period reached maturity satisfactorily and will be left standing for later use by wintering ducks and geese. August floods swept over a portion of Tract 3 damaging much of the mature barley. The moisture received gave birth to a bumper crop of Russian Thistle.

The Tract 25 area, which was planted to Sesbania for a cover crop, produced poorly due presumably to the lack of soil aeration for so long a period during leaching. The crop was disked under and the land was being prepared for alfalfa toward the end of the period.

Tracts 5, 7 and 8 were all being prepared for a barley crop which will be planted next period when cooler weather permits.

A total of one mile of irrigation ditch was hand cleaned and boxes installed for future use.

(b) Unit II.

Alfalfa irrigation was confined strictly to night work during July due to the danger of scalding the crop. With fresh water contours and summer cover crops to be watered, the undertaking was more practical than ever before.

Tracts 1 and 2 were united to form one large 160 acre field thus reducing ditch cleaning problems. The tract was planted to Sudan grass and thus far a fair yield has resulted. It is proposed to mow the crop down for utilization when the various barley fields are gleaned of all feed. There is definite need for such crops which can be withheld until late winter.

A total of 400 acres was deep tilled, landplaned, and re-bordered during the period.

Irrigators cleaned three miles of irrigation ditch twice during the period and installed boxes and checks in one mile of ditch.

IV. ECONOMIC USE OF REFUGE

A. Grazing and Haying

Livestock grazing to remove surplus alfalfa was continued until May 24th. Early in May haying by permittees was initiated to remove rapidly growing hay until late June when a seed crop could be developed.

Intermittently, throughout the period some 6,952 head of sheep were grazed and later 148.8 tons of alfalfa hay were removed from the various tracts used last winter by waterfowl.

Several times during the spring and summer cattle from the Vail Ranch broke out of pasture and entered the Tract 18-19 alfalfa. When wet, the crop on the headlands was killed out by trampling.

V. PUBLIC RELATIONS

A. Recreational Uses

No facilities on the area.

B. Refuge Visitors

<u>NAME</u>	<u>DATE</u>	<u>IDENTIFICATION</u>	<u>PURPOSE</u>
Mr. Wilfred Anderson)	5/2	FWS - R.O.	Inspection Tour
Mr. William Krummes)	5/2	FWS - C.O.	Inspection Tour
Dr. Moyes (Party)	5/2	FWS - C.O.	Inspection Tour
Mr. William Anderson	8/18	S. F&G Dept.	Duck Banding

C. Other Items of Interest

During June the Brawley News carried a story of Refuge developments with pictures of the newly constructed levee in Tract 29, Unit I.

When the north portion of Unit I, where New River formerly was, began to dry, vegetables of all varieties which had been dumped into the stream began to flourish.

'Tis perhaps a pity that the tin cans, bottles, etc., from upstream, which came to rest on the refuge, couldn't likewise have produced of their kind. In place of being a problem, the refuge staff would have been lavishly supplied with all brands of canned goods, beverages, medicines, several domestic animals, tires and even an automobile!

D. Refuge Participation

In July a talk on "waterfowl management" was given to the Brawley Lions Club.

On May 2nd the board meeting of the Imperial Irrigation District was attended and the Service lease for operational lands and additions thereto was presented.

Respectfully submitted,

Edward J. O'Neill
Refuge Manager

APPROVED:

WATERFOWL

Refuge Salt Lake Months of May to August 1951

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced	(6) Total
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total for Period
I. Swans: Whistling swan								
II. Geese: Canada goose Cackling goose Brant <u>White-fronted goose</u> Snow goose Blue goose								
III. Ducks: Mallard..... Black duck Cadrall Baldpate..... Pintail..... Green-winged teal.... Blue-winged teal Cinnamon teal..... Shoveller..... Wood duck Redhead..... Ring-necked duck Canvas-back Scaup..... Golden-eye Buffle-head Ruddy duck..... <u>Falvus Tree Duck</u>	28 10	8/20 8/10	6 28 3600 10 400 100 15 250 60 300 950	5/5 8/20 8/25 8/10 8/20 5/27 5/12 7/6 7/21 8/25 5/5	14	5/5		10 50 4,000 50 1,000 300 150 1,300 800 350 1,500
IV. Goot:.....								

(10)

(20)

(50)

(20)

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 9,510

Peak waterfowl numbers 5,739

Areas used by concentrations Refuge Development Units.

Principal nesting areas this season _____

Reported by _____

Edward J. O'Neill, Refuge Manager

INSTRUCTIONS

(1) Species:

In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.

(2) First Seen:

The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.

(3) Peak Concentration:

The greatest number of the species present in a limited interval of time.

(4) Last Seen:

The last refuge record for the species during the season concerned in the reporting period.

(5) Young Produced:

Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(6) Total:

Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

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

MIGRATORY BIRDS

(other than waterfowl)

Refuge Salters Sea Months of May to August 1945

(1) Species Common Name	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production		(6) Total Estimated Number
	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young
I. Water and Marsh Birds:									
Western Grebe	Previous Period	4/12	9	4/12					
Black-crowned Night Heron	"	5/2	11	5/2					
Glossy Ibis	"	4/12	400	4/12					
Wood Ibis	800	6/15	3000	6/20					
Florida Gallinule	Previous Period	5/2	50	5/2					
Clayton Rail	"	4/12	3	4/12					
Sora Rail	"								
Cormorant	"		50				1		3000
II. Shorebirds, Gulls and Terns:									
Least Sandpiper		8/25	300	8/25					
Long-billed Curlew		4/30	950	4/30					
Wilson's Phalarope		7/29	600	7/29					
Willet		4/16	30	4/16					
Avocet		7/14	20	7/14					
Lesser Yellowlegs		7/7	60	7/7					
Black-necked Stilt		6/2	1600	6/2				16	
Laughing Gull		6/15	20	6/15				6	
Caspian Tern		6/15	10	6/15				3	
Gull-billed Tern		6/15	200	6/15				20	
Sooty Tern		8/14	300	8/14					
Long-billed Dowitcher		8/20	4,000	8/20					
Killdeer			50					2	

(over)

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

Reported by

Edward J. O'Neill, Refuge Manager

INSTRUCTIONS

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

UPLAND GAME BIRDS

Refuge ~~Salton Sea~~ _____ Months of May to August, 1951

(1) Species Common Name	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number Broods Obs'd.	Estimated Total		Hunting	For Re-stocking	For Research		
	NO CHANGE IN STATUS NOTED SINCE PREVIOUS PERIOD									
	Pertinent information not specifically requested. List introductions here.									

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

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

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

REFUGEE GRAIN REPORT

Refuge Saltton San Nat'l Wildlife Refuge Months of May through August, 1951

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF			(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*	
				Transferred	Seeded	Fed		Total	Seed
BARLEY	72		72				72	None	
MILK MAIZE	30		30	20			30		
SUDAN GRASS	60		60	60			0		
WILD MILLET	362		362	162			200		

(8) Indicate shipping or collection points Saltton San Nat'l Wildlife Refuge, Brumley, California

(9) Grain is stored at San Diego, California

(10) Remarks None

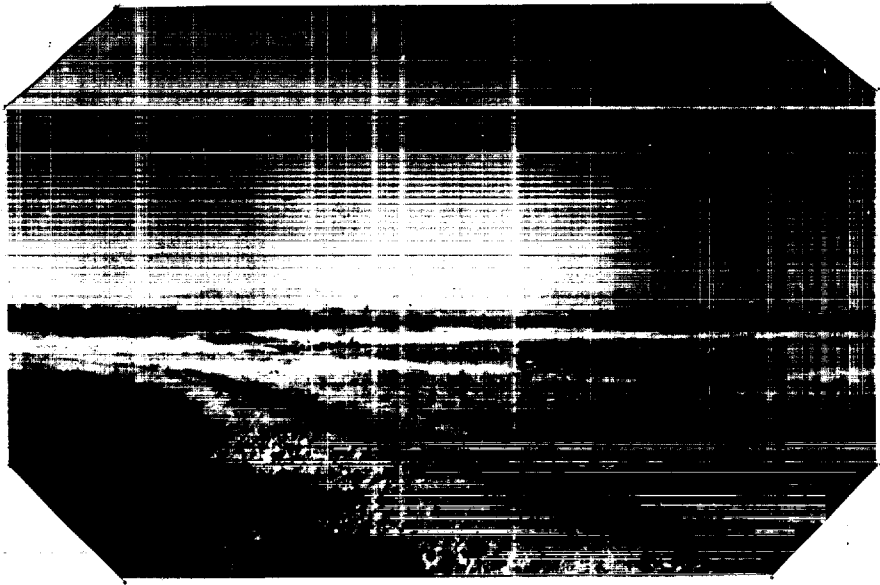
*See instructions on back.

REFUGE GRAIN REPORT

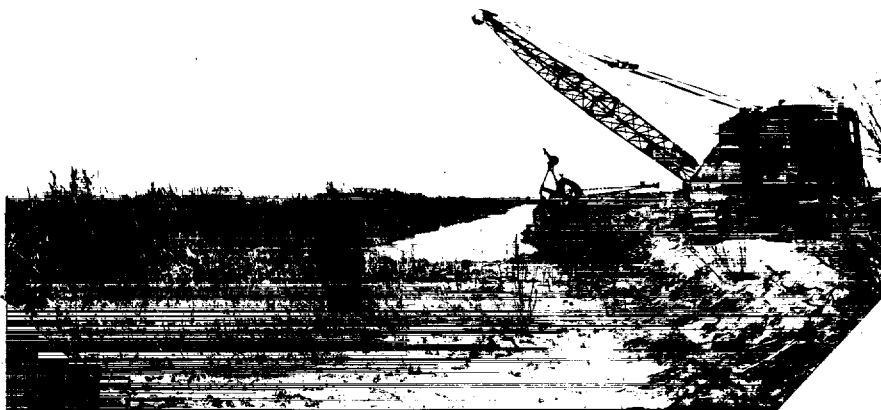
This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (2) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (3) A total of columns 2 and 3.
- (4) Column 4 less column 5.
- (5) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (6) Nearest railroad station for shipping and receiving.
- (7) Where stored on refuge: "Headquarters granary," etc.
- (8) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.



Tract 27-29 Unit I, Developed Marsh Area (Aug. 1951)



During August the first mile of levee was constructed
for water impoundment in Tract 12 of Unit I. (P & H
Dragline -- Operator Hamilton)

