

ROUTING SLIP

BRANCH OF WILDLIFE REFUGES

DATE: 9/16/1949

MR. SALYER _____

MR. KRUMMES _____

MR. DUMONT _____

MISS BAUM _____

SECTION OF HABITAT IMPROVEMENT:

~~MR. GRIFFITH~~ REG 1121

~~DR. BOURN~~ WSB 10-264

MISS COOK _____

SECTION OF OPERATIONS:

~~MR. BAIL~~ _____

~~MR. REGAN~~ _____

DR. MORLEY

SECTION OF LAND MANAGEMENT:

~~MR. KENT~~ _____

~~MR. ACKERKNECHT~~ la

SECTION OF STRUCTURES:

MR. TAYLOR _____

MR. JOHNSTON _____

STENOGRAPHERS:

NARRATIVE REPORT

REFUGE: CRABORCHARD

PERIOD: MAY - AUGUST 1949



CRAB ORCHARD NATIONAL WILDLIFE REFUGE

REFUGE STAFF

E. E. Crawford	- - - - -	Refuge Manager
C. W. Nelson	- - - - -	Maintenance Foreman
H. T. Gualdoni	- - - - -	Refuge Clerk
J. T. Clayton	- - - - -	Maintenance Man (Gen'l.)
W. F. Meneese	- - - - -	Maintenance Man (Gen'l.)
Lee Bush	- - - - -	Maintenance Man (Gen'l.)
Ernest May	- - - - -	Towerman

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I. GENERAL

Weather Conditions

Lacking statistical weather data, we can only report our general impression of nature's climatic offerings.

We assume that our general weather for the report period was as near normal as one might expect. Unusual occurrences of rain, drouth or high and low temperatures were not experienced. There were times when the weather characteristics seemed to portend a prolonged dry spell that would burn up crops. Actually, though, a normal rainfall would come along just in time to give our crops their needed life blood.

Water Conditions

Crab Orchard Lake has shown no extremes in fluctuation. Monthly averages were as follows:-

Month	Spillway Level - 405.0		
	1947	1948	1949
May	----	405.8	405.6
June	----	405.4	405.1
July	----	405.8	405.0
August	404.0	404.8	404.9

We have had much better success at holding Little Grass Lake at a more constant level than we did this time last year. This water regulation has been aided by no unusual run-offs and less manipulation of our valves by the public. We have been able to hold the level at 12 to 14 feet below spillway level.

Fires

Our fire incidence has been less this report period than at any time since we have taken over this refuge. Actual fire hazard has been as great as any. Perhaps our recreational users are being a bit more careful and trying to heed our public talks and newspaper warnings.

As refuge crews have been working in some of the more remote parts of the refuge and thus have been hard to contact in case of fire, it has been necessary to call on our industrial brethren for

quick suppression work. To these men we give our thanks.

A tabulation of our fires and fire losses follows:-

Fire No.	Date	Cause	Suppression Man Hrs.	Cost	Habitat in Acres	Total Acres
49-6	6-16	Berry Pickers	5	\$ 6.20	3 A.- Pine	3 A.
49-7	7-4	Motorist	1	1.00	.5 A.-Grass	0.5A.
Totals		2-smokers	6	7.20	3 A. Pine .5 A. Grass	3.5 A.

II. WILDLIFE

Migratory Birds - (See Forms NR-1 and NR-1A)

General field work and patrols this period have brought to light a few interesting wildlife observations that have materially built up our biological files. Strictly biological excursions by Bush and Crawford have been rather limited but with enough frequency to bring to light need for more summer biology work on the refuge.

Populations and Behavior - Geese - as indicated in our appended NR-1 form, we had some rather late tarrying geese this spring. Twenty-one (21) canadian geese lingered with us until May 10. The eleven (11) call geese that belonged to Mingo Refuge, and had flown from the pen, spent the spring exploring Crab Orchard Lake. Two of the eleven were paired birds and much to our surprise presented us with a hatch of four goslings. This brood and family has fared well and can be often seen in flight over various parts of the refuge. One (1) snow goose and six (6) blue geese remained with us until the 12th of May. The snow was an adult and the blues were all immature birds. Ducks - where as reported almost negligible for the same period a year ago, were more common this year. The common mallard has definitely been established as a permanent resident and breeder on this refuge. Three known and observed broods were brought off and through to flight stage. Two known and observed nests were taken by human predators. Bush did observe, on August 31, a concentration

of 412 mallards in typical molt habitat and he reported that a large percentage were males in the eclipse plumage. Blue-winged teal had seemingly no more than left here when 9 apparently non-breeding males re-appeared on the refuge June 24th. Blue-wings have been observed daily since then. We are confident that within two years blue-wings will adapt themselves to our habitat and we will have a nesting use of the refuge. Woodduck - have been elusive as far as continual summer observations. Observers know they are present but locating them for census and observation has been difficult. Bush did find a concentration of 123 "Woodies" at the mouth of Crab Orchard Creek on August 31st. A great number of these birds were flightless, thus indicating local hatch. The coot can now be recorded as a breeding species on this refuge. Like the Blue-winged teal, we rather imagine that the coot will become adapted to our habitat and thus be a common breeding bird.

Other Waterbirds - The NR-1A form gives in detail the species present on the refuge during the report period. We shall report herein only on the unusual. Pied-billed grebe has, this summer, been recognized as a permanent resident and probably breeding on the refuge. Again we have had the double-crested cormorant with us for the summer but have been unable to locate nesting birds. As reported last period, we had 110 active nests in our Great Blue Heron rookery. The young apparently all came off in good shape. (Note on this rookery:- one of the graduate students at Southern Illinois University is contemplating a research problem on this particular heronry. This should, if the problem is approved, give us some good observations on this phase of refuge biology). Observations on all the other members of the heron family were much more common this year than in the past.

As reported last period, the numbers of nesting woodcock ~~that~~ that we had on the refuge this season continued to impress us. No effort was made to definitely census the woodcock on the refuge but from observation, we would conservatively estimate 200 on the refuge throughout the period. Amongst our shorebirds, the outstanding observation, for the period, was the presence of least tern on the refuge for the first sight record.

Food and Cover - Agricultural crops will be discussed under Section III of this narrative. Natural food and cover has been sufficient for the use demand. We have noted this season that we are getting a pretty general outcropping of shore-line emergents in the Carex and Cyperus families. This natural growth is making material progress in slowing our shoreline erosion. In fact, other than a few isolated spots of shore line that will have to be manually corrected, our erosive shorelines should be pretty well healed in the matter of two to four more years.

Upland Game Birds - (See Form NR-2)

Populations and Behavior - Refuge field crews are finding more and larger broods of bob-white quail this year than in either of the two previous years. Climatic conditions were such that apparently all of the June-July nesting pairs had successful hatches as there has been little indication of late August nesting. We haven't had verification by the quail research men but we believe the broods are running slightly more in numbers of birds to the brood. Whereas past years broods have averaged 12 birds to the brood, we feel the average this year is between 13 and 14. Our China-pheasants are still with us and field personnel have observed 3 broods of 7, 6 and 8 birds each. The writer rather hopes the "Chink" doesn't get to be a problem species with us. There are those locally whom having been encouraged by the success of the China pheasant the past two years are advocating a heavy stocking of Area II. The writer feels we have a wonderful game bird in our bob-white and why put the "chink" in on his range.

Food and Cover - Upland game bird food has been in abundance this period, with a bountiful supply of weed seeds. Cover is equally as good.

Big Game Animals

Population and Behavior - Our observations on our deer have been rather hit or miss and no definite attempt has been made to accumulate factual data. Field crews often report single deer seen. No one has reported fawns. We did have the loss of a fine 4-point buck in June. As indicated in the attached photo, he just didn't jump well nor high enough and hung himself in a 4 foot fence.

Food and Cover - No factual observations of note.

Fur Animals, Predators, Rodents and Other Mammals -

General observations of the species under this heading are such that we feel no necessity for setting up a permit fur harvest this season. It is felt that refuge personnel can handle the trapping of individuals doing measureable damage.

Mink - Observations have been few but some can be expected to migrate into the refuge this winter.

Gray Fox - Present but not too numerous.

Red Fox - Present but not too numerous.

Raccoon - Abundant and should be harvested or live trapped for restocking elsewhere in the state.

Skunk - Present but not too numerous.

Opossum - Present but not too numerous.

Muskrat - Our two year protection is apparently bringing this species back. Sight observations are not uncommon now.

Fox and Gray Squirrel - Both species seem abundant this year. There is a good nut-mast crop making so they should fare well.

Rabbit - Very abundant.

Woodchuck - Seemingly increasing to the point of abundance.

Predacious Birds - (See Form NR-1A)

Predacious species were present as indicated in our Form NR-1A but no attempt has been made to census numbers by species. We did watch, with interest, our pair of great horned owls and their two young. Our pair of ospreys and their nest, in the second year, were kept tab of. The parent ospreys only raised one young this year.

Fish

Local fishermen have had just enough fishing success in Crab Orchard lake to encourage them. Little Grassy lake has been tops all season and some very nice bass catches have been brought in.

During the week of July 9th to 15th Mr. A.D. Holloway, Ass't. Regional Supervisor for Game Fish and Hatcheries, in Region IV made an intensive fishery survey of our waters. We do not have a report of Mr. Holloway's findings or recommendations. The writer was able to spend enough time in the field and in "chit-chat" with him to draw some conclusions of our own:-

Our guess was correct in that Crab Orchard is showing a normal fishing trend for artificial lakes and is past its prime; and that Little Grassy is just hitting its peak.

Our commercial fishing program of last spring didn't fail due to inadequacy of the permittees. Carp are far from being numerous in the lake and I believe showed no sign of reproduction.

Our problem fish in Crab Orchard is the hickory shad.

Maintaining good fishing is going to be difficult and expensive on Crab Orchard but rather simple on Little Grassy.

During Mr. Holloway's visit we did have a minor kill of hickory shad in one bay of Crab Orchard. Close to a car-load of shad turned bottom-side up due probably to low oxygen content in the water.

III. REFUGE DEVELOPMENT MAINTENANCE

Physical Developments

Work accomplishments during the report period were primarily by refuge staff as monies were not available for any great amount of wage employee labor.

Project 53

Refuge Maintenance

- Service repairs to Jeep, Chevrolet Sedan and Ford Sedan.
- General maintenance of grounds around buildings and interiors.
- Mowing and blading of roads, trails and picnic areas.
- Interior touch-ups to Quarters Nos. 1, 3 and 8.
- Construction of two pipe gates for public closure areas.
- Construction of 45 feet of metal and wood picnic tables for "Group" picnic area.
- Spraying of 62 Acres lotus beds.
- Construction of recognition sign for Negro recreational area and Little Grassy Lake.
- Removal of two defunct water-tanks at west end of lake.
- Routine servicing and preventive maintenance of all equipment.

Job No. 5187

Negro Beach Construction

Work was completed on this unit by the final water and sewer installation, servicing of power to the area and final touches to the swimming area proper. The beach was officially opened May 28th.

Project 10Soil and Moisture Conservation

- Stabilization plantings and grading were made to approximately 3-1/4 miles of shoreline.
- A total of 21 acres of waste land was rehabilitated, adequate drainage provided, gulleys leveled and land seeded to cover.
- Three stock ponds serving as stock water and siltation areas were developed and are working nicely.

Project 11Fire Protection

A greater percentage of refuge efforts were spent on work giving us more adequate fire protection than any other work item.

One much needed fire trail in the south and east portion of our Area II was opened up and made passable. This job required installation of two bridges, re-decking of one 60 foot bridge and installation of 6 culverts. A total of 3-1/4 miles were in this one trail.

Another much needed trail in the southwest corner of Area II, 1-1/2 miles long was opened up and necessitated construction of one bridge, one ford and installation of two culverts. This particular trail gives us access to one of the largest and oldest pine plantation blocks.

Plantings

Aquatic and Marsh Plantings - Our shoreline stabilization efforts were continued. We have kept our various shoreline plantings under close observation and can record the following results:-

River bulrush - 70% survival and plants are running and spreading in nice shape. No indications of the species seeding this year.

Willow Cuttings - 40% survival that will no doubt be lowered with fall and winter wave "tipping-out" action.

Bald Cypress - 10% survival and not too adaptable unless planted in solid, close blocks.

Millet seeding - We are getting a nice stand of millet on some of our shorelines this season. Difficult to tell whether this is from our plantings or native volunteer stock.

Little Grassy lake was seeded this year to 150 pounds of Sago seed. No results are apparent at the present time.

Upland Plantings - Our upland plantings were confined to experimental plantings of buck-wheat as a possible cover crop in corn and seeding of rehabilitated lands to a mixture of lespedeza bicolor, seresia, korean, timothy, red-top and blue grass. One of our farmers is trying winter vetch as a cover crop in his corn this year.

Cultivated Crops - At the start our cropping year didn't look too promising. It was feared that upland corn would fail and we would be relying upon our bottom-land corn for feed this winter. Actually our entire corn crop is better than average. We can take some credit on the basis of our selling our farmers on improved land practices, especially fertilization. Present grain outlooks are for our corn to average better than 40 bushels to the acre. Our past winter wheat crop gave a much better yield, averaging 17 bushels to the acre rather than the 11 bushels per acre last year. Our soy-bean crop will probably be somewhat lighter this year than last.

Most of the governments share of wheat was used to compensate the farmers for liming costs. In several cases we were thus able to pay off the full fertilization costs. The soy-beans not used to defray fertilization costs will be left standing in the field. We on the ground feel that practically all of our corn should be left standing in the field this year and knocked down as used and needed by the geese. If we get anywhere near the flight we had last year, and we should get an increase, there should be no surplus left in the field come spring. This will also save us handling and loosing so much in the grainary.

IV. ECONOMIC USE OF REFUGE

A more complete tabulation and narrative of the economic use of the refuge will be given in the next narrative report.

Grazing - Pastures have held up in surprisingly good shape. The grass is a little short on some pastures and some permittees have seen fit to pull and sell some stock.

Haying - Our haying demand hasn't been as great as expected - probably due to short growth and the fact that a lot of local stock owners, being scared of the future market, don't propose to winter over many head.

Other Uses - Tabulated below is the return from our concession contract, paid at the rate of 3% of the gross:-

Facility	May	June	July	August	Total
Refreshments	18.77	59.39	79.92	20.01	178.09
Gas & Oil	11.64	13.80	18.37	9.89	53.70
Dock, Boat & Motors	43.72	44.55	53.51	32.36	174.14
Bait	5.80	5.67	4.96	3.14	19.57
Equip. & Repairs	46.55	25.60	8.41	6.33	86.89
Swim (Colored)	.46	1.05	1.01	—	2.52
Swim (White)	2.70	47.44	61.94	5.41	117.49
Gun Club	9.75	—	14.35	24.19	48.29
Misc.	—	1.53	2.76	5.64	9.93
TOTALS	139.39	199.03	245.23	106.97	\$690.62

V. FIELD INVESTIGATION OR APPLIED RESEARCH

Canada Goose Project

Once again our employee geese have gone AWOL by means of regaining their flight power. This is getting to be an old story with us now. With their freedom, two geese blessed us with four young as reported. Frankly, the geese look awfully nice moving around Crab Orchard Lake and are a source of enjoyment to many. On the other hand we know they would come a "cropper" to some of our unsportman-like hunters if we left them on the loose so we are again attempting to trap them up.

Cooperative Quail Research Program

The quail men of the Illinois Natural History Survey have now completed the first year study on our quail. We have before us a copy of their annual summary report from which we will quote a few findings here-to-fore not reported in these narratives:-

"74 broods averaged 12.7 birds per brood
 70 coveys averaged 13.0 birds per covey
 157 bob-white were banded during the year ...
 132 banded quail were juveniles, 25 mature ...
 Sex ratio on basis of 100 is 135 males to 100 females."

The nursery that the research boys have in isn't the success they

expected. This office had forewarned them that they were undertaking a job that is a job alone. As we prophesied, the nursery had to give into research and is now pretty much a weed forest with lespedeza bi-color and multiflora rose for understory.

Ornithology

Lee Bush has come in with some good "birding" this report period and has added two more "firsts" to our Crab Orchard check list, making a total of 222 species. The new species are:-

Least Tern
Bell's Vireo

VI. PUBLIC RELATIONS

Recreational Uses

We wish we had some way of censusing, accurately, the human use of this refuge and its recreational facilities. To we, on the ground, we can visually record the increased public use each year by means of turf being worn off areas around the lake, auto trails made off the beaten path, tent camps in some of the darndest places, boats tied and hidden in new places along the shoreline and just general impressions and remembrances of crowds in past years. To convert this visual use into numerical figures stops us. We can "guesstimate" but with no known degree of accuracy.

4th of July weekend there were local "guesstimates" of 40,000 to 65,000 peoples on the refuge. Our concessionaire, having been located on the lake since 1940, says that use was more intensified this year than in any previous year. Some indication of increased use is borne out in the tabulation of returns from our concession, especially in such items as refreshments, gas and oil sales, boat rentals and bait sales.

Actual use of our white swimming beach dropped off a little this year and the beach was closed early in August due to local polio scare.

The negro beach, opened this year for the first time, can be classed as a colossal flop, as far as use. Whether the negroes just aren't swimmers or their economy caused them to pass it up, we don't know. It is really too bad that it hasn't worked out, for actually, the Negro beach, as finished, is the better of the two beaches and swimming areas.

Our group permit picnic area has brought more favorable comment this summer than any recreational development we have established since we took over here. This seems rather ironical as it was accomplished and set up with no special funds, just a few man days to fence it off, construct three banquet size picnic tables and give it a little local publicity in the paper. We have had groups from the minimum allowed size 25 to groups of 800 on the site. Group use has ranged from church groups, barbers, boy scouts, miners, American Agronomist Association, Flying Farmers, factory and industrial groups, family reunions, district conventions (Phillips Petroleum, Florists Telegraphers), womens clubs, Elk clubs and veterans groups reunions. Some days the area was used by two groups - one in the afternoon and another in the evening. Group picnics lasted from a few hours to 2-1/2 days, in the case of the district convention of Phillips Petroleum employees. Each and every group has been highly complimentary of the provision of the area and have suggested creation of at least one or two more, as it was necessary to turn some groups down due to our policy of first come first serve on ~~instance~~ of reservations.

We are happy to report that we had only two drownings on the refuge this year. Both drowning victims were young men swimming in places other than at our guarded beaches.

During the period of July 15 to 27th, two representatives of the National Park Service were on the refuge conducting a recreational survey. The purpose of this survey is to set forth a logical plan for the ultimate recreational development of this refuge.

Refuge Visitors

A log of visitors, with business of importance, for the period were:-

Date	:	Name	:	:	Title	:	Purpose of Visit
May	:		:	:		:	
5	:	Kent Keller	:	:	Former Congressman	:	Discuss refuge oper-
	:		:	:		:	ations.
15	:	L. Schwartz	:	:	Director Conserv.	:	Tour of refuge with
	:		:	:	Dept., Illinois	:	party of 16 heads of
	:		:	:		:	divisions & Governors
	:		:	:		:	Advisory Board
25	:	Steward & Ravine	:	:	FWS Fish Hatchery-	:	
	:		:	:	Rochester, Ind.	:	Pick up Ammon. Nitrate
June 1	:	Father Link	:	:	Director-Lecturer-	:	Trail Rangers, Inc.
	:		:	:	Audubon Society	:	Mature trails

Date	Name	Title	Purpose of Visit
June			
1	G. Parsons	Ill Pub. Welfare	Trail Rangers, Inc.
4,6,7	F.C. Gillett	FWS - Ref. Super.	Refuge Inspection
6,7	H. Regan	FWS - Section Oper.	Refuge Inspection
10	Hon. P. Douglas	U.S. Senator (Ill.)	Inspect Refuge
10	Dr. D.W. Morris	Pres. S.I.U.	Inspect Refuge
11	Tom Evans	Wildlife Institute	Inspect Refuge
27	Durward Allen	FWS - Biologist	Quail Research Prog.
27	W.N. Wandell	Proj. Leader, INHS	ditto
July			
7-8	F.N. McGarry	FDAMP- Army Eng'r.	Mine disposal
7-8	C. Brennan	Corps Eng'r. Army	ditto
7-8	Capt. Webster	Army Eng'rs.	8-man mine disposal Squad
9-15	A.D. Holloway	FWS Game Fish Hatch.	Fisheries Survey
14-15	V.C. Conover	FWS Game Agent	Unload Fireworks
14-20	F.C. Gillett	FWS Refuge Super.	Ref. Adm. & Development
17	Jim Silvers	FWS Reg. Dir. Reg. IV	Visit & Tour Refuge
17-20	W. Krummes	FWS Asst. Chief, Ref.	Refuge Inspec. & Recreation
17-20	F. Kent	FWS Asst Chief Counsel	ditto
15-22	G. Thompson	NPS Recreation	Develop recreational
15-22	C. Jeffers	Planners	plan for refuge
Aug.			
15	A.G. Huey	FWS Reg. Eng'r.	Eng'r study of Refuge
16	Dr. H.B. Mills	Dir. Ill. N.H.S.	Visit refuge quail
16	W.N. Wandell	Ill. N.H.S.	research project
16	Capt. J. Ramos	Army Ind. Hygiene	Ammon. Nitrate Poisoning
22	V.C. Conover	FWS Game Agent	Waterfowl Regulations
	Mrs. J. Simpson		
31	Mr. Johnson	Chicago, Mill Creek	Fox hunting on Area
	Wacker, Rogers	Hunt Club	III of refuge

Refuge Participation

Refuge personnel, as indicated, participated in the following public meetings as representatives of the Service:-

- May 4 - The manager attended the regular monthly meeting of the Crab Orchard Sportsmens Association. Another fairly hot meeting over waterfowl regulations.

- May 7 - The manager attended the public waterfowl hearing, as called by the state, at Cairo, Illinois. Main purpose of this meeting was to give local farmers and club owners (especially the Lansden boys) a chance to express some rather ugly feelings towards the Service over the closure of their lands to the slaughter of geese.

- May 12 - The manager, attended the Services public waterfowl hearing in Peoria. Meeting as conducted by Regional Director Janzen was very orderly until one of the Lansden boys popped up and off again. (They should declare an open season of those two Lansden boys).

- May 15 - Crawford and Bush personally conducted the new State conservation director, plus 16 chiefs and sub-chiefs of divisions and his 5-man board over the refuge.

- May 26 - Crawford and Bush led a class of 14 ornithology students from S.I.U. on a bird walk on the refuge. Class had just returned from a trip to Reelfoot Lake where they had observed a heronry and looked for the pileated woodpecker. Here in practically their own back yard, we were able to give them a closer look at an active heronry and to top it off were able to show them a nest of pileateds with with two half-grown young in it.

- June 1 - The manager attended the regular monthly meeting of the Crab Orchard Sportsmens Ass'n. and listened to representatives tell the members of how they had told the Service, at the waterfowl meeting. Again one of the Lansden boys popped up and added his 2¢ worth.

- June 10 - The manager personally conducted the Honorable Senator Paul Douglas for a tour of the refuge.

- June 16 - The manager was guest speaker at the Midwest Agronomist Association Association picnic on our group picnic area.

- July 6 - The manager was guest speaker at the noon luncheon of the Marion Lions Club. We based our talk on the Theme "A Century of Conservation".

- July 6 - The manager attended the regular meeting of the Crab Orchard Sportsmen Association. A meeting devoid of color.
- July 13 - The manager was guest speaker at the Phillips Petroleum Company district convention picnic.
- July 19 - The manager, along with Messrs. Krummes, Kent and Gillett of our Service and Thompson and Jeffers of the National Park Service, sat in on a public hearing called by us to discuss the recreational development of the refuge.
- July 26 - Bush conducted the Jackson County Conservation Work Shop group of teacher over the refuge.
- Aug. 3 - Nelson attended the regular monthly meeting of the Crab Orchard Sportsmen's Association. No fireworks - he reports.
- Aug. 10 - Nelson, represented the Service at a formal flag raising at "The Haven".
- Aug. 18 - Nelson conducted the Williamson County Conservation Work Shop group of teachers over the refuge.

Hunting

Legal game during this report period has been squirrels. Hunters success has been about average. We have had reports of squirrels being poached along our east boundary but have had no success at meeting the individuals.

Fishing

Has been pretty well covered under Section II of this narrative.

Violations

No apprehensions made this report period.

VII. OTHER ITEMS

Personnel

There have been no personnel changes this report period. We keep hoping, and we hope not in vain, that we will get the Jr. Manager and Conservation Aid appointments promised.

Forced sick leave and needed annual leave has pretty much disrupted work schedules this report period.

Miscellany

The Army Engineers finally put their mine disposal crew in here this summer. The Captain in charge and an eight man crew found and disposed of approximately 400 M-4 mines. Some of the mines were discovered in places where we have been mowing around and its a wonder we haven't had a serious accident. We are much pleased that the "bloomin" things have been removed. We sincerely hope that they didn't miss too many.

Photographs

A few miscellaneous photos are included as dressing to this report.

Date Submitted --- September 9, 1949

Eugene E. Crawford
Eugene E. Crawford
Refuge Manager

Approved by Regional Office:

[Signature]
Acting Regional Director

SEP 13 1949

WATERFOWL

Refuge Crab Orchard Refuge Months of May to Sept. 1, 1949

(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	Estimated for Period
I. <u>Swans:</u> Whistling swan									
II. <u>Geese:</u> Canada goose	-----	-----	-----	-----	21	5/10	1	4	25
Cackling goose	-----	-----	-----	-----					
Brant	-----	-----	-----	-----					
White-fronted goose	-----	-----	-----	-----	1	5/12	-----	-----	1
Snow goose	-----	-----	-----	-----	6	5/12	-----	-----	6
Blue goose	-----	-----	-----	-----					
III. <u>Ducks:</u>									
Mallard	-----	Permanent Res.	412	8/31	-----	-----	3	14	412
Black duck	-----	-----	-----	-----	-----	-----	-----	-----	-----
Gadwall	-----	-----	-----	-----	-----	-----	-----	-----	-----
Baldpate	-----	-----	-----	-----	-----	-----	-----	-----	-----
Pintail	-----	-----	-----	-----	-----	-----	-----	-----	-----
Green-winged teal	-----	-----	-----	-----	-----	-----	-----	-----	-----
Blue-winged teal	9	6/24	19	8/31	-----	-----	-----	-----	19
Cinnamon teal	-----	-----	-----	-----	-----	-----	-----	-----	-----
Shoveller	-----	-----	-----	-----	-----	-----	-----	-----	-----
Wood duck	-----	-----	123	8/31	-----	-----	20 ?	100 ?	123
Redhead	-----	-----	-----	-----	-----	-----	-----	-----	-----
Ring-necked duck	-----	-----	-----	-----	-----	-----	-----	-----	-----
Canvas-back	-----	(1 lone male has remained on refuge all summer)	-----	-----	-----	-----	-----	-----	1
Scaup	-----	-----	-----	-----	-----	-----	-----	-----	-----
Golden-eye	-----	-----	-----	-----	-----	-----	-----	-----	-----
Buffle-head	-----	-----	-----	-----	-----	-----	-----	-----	-----
Ruddy duck	-----	-----	-----	-----	-----	-----	-----	-----	-----
IV. <u>Coots:</u>	-----	Permanent Resident)	-----	-----	-----	-----	1	5	7

SUMMARIES

Total Production:

Geese 4
 Ducks 118
 Coots 5

Total waterfowl usage during period 594

Peak waterfowl numbers 594

Areas used by concentrations Grab Orchard Lake

Principal nesting areas this season Grab Orchard Lake
shores and flooded woods.

Reported by Crawford & Bush

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 Concentrations: 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.

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Grab Orchard Refuge

Months of May to September 1 1949

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Common Loon					1	5/15				3
Pied-billed Grebe			Permanent Resident							2
D.C. Cormorant			54	5/14				?	?	70
G.B. Heron			500	8/15			1	110	220	500
Am. Egret			300	8/15						300
Little Blue Heron			75	8/15						75
E. Green Heron			350	8/15				70	4	350
Am. Bittern			4	8/15						4
B.C. Night Heron			40	8/15			??	??	?	40
Y.C. Night Heron					1	5/28				1
II. <u>Shorebirds, Gulls and Terns:</u>										
King Rail			12	7/15				2	3	12
Virginia Rail				?						3
Sora Rail					5	5/5				5
Killdeer			Permanent Resident							??
Am. Woodcock			?	?				??	??	200
Upland Plover			?	?				??	??	450
Spotted Sandpiper			?	?						2
E. Solitary Sandpiper										2
Herring Gull										15
Common Tern										100
Least Tern										2

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u>					
Mourning dove - - - - -					16,000
White-winged dove					
IV. <u>Predaceous Birds:</u>					
Golden eagle					
Duck hawk					
Horned owl - - - - -	Permanent Resident			1	2
Magpie					8
Raven					
Crow - - - - -	Permanent Resident				4000
Cooper's Hawk - - - - -	Perm. Resident				
Red-tailed Hawk - - - - -	Perm. Resident				
Red-shouldered Hawk - - - - -	Perm. Resident				
Broad-winged Hawk - - - - -	Perm. Resident				
Marsh Hawk - - - - -	Perm. Resident				
Osprey - - - - -				1	1
H. Sparrow Hawk - - - - -	Perm. Resident				4
Reported by <u>Crawford & Bush</u>					

INSTRUCTIONS

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

3-1752

Form NR-2

(April 1946)

UPLAND GAME BIRDS

1613

Refuge Crab Orchard RefugeMonths of May to September, 1949

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Bob-white Quail	15,400 acres of reverting fields, agricultural lands, plantations and fence rows on Areas I and III	8	??	??	4 M - 3 F	--	--	--	2300	
	20,000 acres of same on Area II	3.5	105	2000	1.35 M- - 1.0 F.	--	--	38	5714	
China Pheasant	???	??	3	40	4 M - 1 F.	--	--	--	90	

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.

REFUGE GRAIN REPORT

Refuge Grab Orchard Refuge

Months of May thru August 1949

(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 USE		
				TRANS- FERRED	SEEDED	FED	TOTAL		SEED	FEED	SURP.
Corn (ear)	3314	---	3314	(Converted to shelled corn 1750)				1564	---	1564	
Corn (Shelled)	320	(See above)		---	---	---	---	1145	---	1145	
Beans, Soy	88	---	88	---	---	---	---	88	---	88	
Wheat	174	28	202	---	---	---	---	202	---	202	
Oats	84	---	84	---	6	---	6	78	---	78	

(8) Indicate shipping or collection points.....

(9) Grain is stored at Refuge & Grainaries

(10) Remarks Weavels have caused severe loss in stored corn and wheat.

NR-8a

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 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.
- (4) A total of Columns 2 and 3.
- (6) Column 4 less Column 5.
- (7) This is a proposed breakdown by varieties of grain listed in Column 6.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters grainary", etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.



(1) Wildlife Class from S.I.U. dragging for bob-white nests. 5/28/49



(2) One of eight tent camps on one of the points on Crab Orchard Lake

6/16/49



(3)

Construction of bridge on East fire-trail. - 6/7/49



(4)



(5) 4-Point buck that didn't jump high enough on a four foot high fence

6-21-49



(6) Directional sign to Little Grassy Lake. Bush is attaching the Department's slogan sign.

7-1-49



(7)

Cooperative farmer, G. Samuel, combining a nice stand of winter wheat. This particular field averaged 19 bu. to the acre.

6-30-49



(8)



(9)

Another use of and on the refuge. Immersion services
of the Herrin Nazarene Church

7/3/49.



(10)



(11)

Lee Bush and A.D. Holloway mixing derris poison
for use in fishery survey

7-12-49



(12)

Directional sign to Negro beach. Radio pickup in
background.

7-1-49.



(13)

"Cookie" bar-b-queing ribs (300 lbs.) for the Phillips
Petroleum picnic. Photo taken on the Group picnic area.

7-13-49