

ROUTING SLIP

DIVISION OF WILDLIFE REFUGES

DATE: June 4 1946

MR. SALYER

SECTION OF HABITAT IMPROVEMENT:

MR. ELMER

~~Mr. Griffith~~ REG 6-7

MR. KRUMMES

~~Dr. Bourn~~ WSP 6/7/46

MR. DEWENT

POAD 9/19

~~Miss Cook~~ JWC 6-26-46

SECTION OF OPERATIONS:

SECTION OF LAND MANAGEMENT:

Mr. Regan

~~Mr. Kent~~ Mr. Krummes ZK 6/27-

Mr. Ball

~~Mr. Ackerknecht~~ Mr. Dickson WA 7-3

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SECTION OF STRUCTURES:

STENOGRAPHERS:

~~Mr. Taylor~~ WV 8/23

9-24-46 at

REMARKS:

OKEFENOKEE NATIONAL WILDLIFE REFUGE

JANUARY - APRIL 1946

NARRATIVE REPORT & ANNUAL SUMMARY OF ACTIVITIES

Return to:

MISS COOK

OKEFENOKEE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

JANUARY - APRIL 1946

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OKEFENOKEE NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

JANUARY - APRIL 1946

I. GENERAL.

A. Weather Conditions.

	<u>Precipitation</u>		<u>Max. Temp.</u>	<u>Min. Temp.</u>
January	3.32		81	25
February	1.76		79	31
March	5.02		87	35
April	3.09		96	50
Total	<u>13.19</u>	Extremes	<u>96</u>	<u>25</u>

Precipitation for the period averaged about normal. Temperatures averaged somewhat below normal for January and February, about normal for March and above normal in April.

B. Water Conditions.

Water levels continue to remain above normal. The only previous year in which water levels have been higher during this period (since the water gauges were installed) was in 1942. Since July 1945, the average monthly water level has not dropped below 121 feet at our Cornelia gauge. We have had no similar experience since the gauge was installed.

While the high water levels have made it comparatively easy to travel by pole boat within the swamp, it has made most of the refuge roads and trails very nearly impassable. It would also appear from our records that such high levels discourage the ducks and wading birds from using the refuge. On the other hand the fire danger within the swamp has remained low and fires on the outside are more easily confined to areas between branches and the swamp.

C. Fires.

The continued high water levels during this period had much to do with a reduction in the number of fires on refuge lands. However, our increased patrol activities plus the elimination of one of our greater hazards, Oliver Thrift, have also contributed to a large extent in reducing the number of fires. We are quite sure of the latter reason because the International Paper Company had about the usual number of fires on their lands adjoining the refuge, except in the area formerly burned by Oliver Thrift.

So far, we have had 7 fires, of which 6 were in the northwest part of

the refuge. This compares with a total of 15 fires on refuge lands during the same period last year. The seven fires, however, burned a total of 730 acres compared to 205 acres last year, and an average of 104 acres per fire compared to 8.5 acres per fire last year.

The same high water level that helped to reduce the number of fires reduced our efficiency in getting to the fires and has prevented the use of the fire truck on the fires. Another factor that contributed to the increase in the average size of the fires was the fact that we have had to break in 3 new fire standby men in the northwest part of the swamp. The first was drafted, the second was either unable or unwilling to learn and the third started work a short time before the first fire in his area.

The first fire occurred just across the canal from the Cornelia Headquarters on Sunday, February 24, with high shifting winds. It was apparently started by carelessness, just across the canal from the boat landing, and quickly spread over refuge lands to the outside. By the following morning the fire had been completely encircled by fire lines and backfires from these lines contained the fire until it was out. This was our largest fire, burning a total of 385 acres of refuge lands and about 400 acres of private lands.

Fires #2, 3 and 4 were set out within a radius of 1/2 mile on lots 48, 25 and 26 on March 2 and 3. Fire #2 burned about 30 acres, Fire #3 about 200 acres and fire #4 about 15 acres. On fire #3 our standby man experienced difficulty in getting to the fire with enough men, and while the damage was not great, it was our second largest fire.

Fire #5 came into the northwest part of lot 469 from private lands and burned approximately 20 acres on March 10.

Fire patrolman Beverly experienced difficulty in getting to fire #6 on March 4, but received assistance from the International Paper Company crew that was fighting a fire on their lands in the lower part of lot 22. Our fire burned some 75 acres in the north part of lot 22 and it was apparent that both fires had been set out by the same party.

Fire #7, on April 13, came into the northwest corner of lot 48 from private lands and burned about 5 acres adjoining fire #2.

All 7 fires occurred in areas where we had planned to carry out controlled burning operations. No controlled burning was done because (1) insufficient personnel was available last summer and fall to map the areas and plan the burning units, and (2) the refuge manager was detailed to the Boston Regional Office during the greater part of the ideal burning seasons and upon his return the Coleman-Lanier case required the major part of his attention until it was too late to burn.

We have received good cooperation from the International Paper Company fire crew, the Charlton County TPO and the Superior Pine Products Company. Spotting and reporting fires, however, remains our most serious

problem and the greatest stumbling block to more efficient fire suppression. The only solution to this problem is the installation of 3 towers on refuge lands and 2-way radio communication.

II. WILDLIFE.

A. Migratory Birds

1. Populations and Behavior

For several reasons, our wildlife observations during this period have not been made with satisfactory frequency and we do not have as much information as we might have had normally. We do have some very definite data from the waterfowl inventory which has required a drastic revision in our methods of estimating the total number of waterfowl using the area.

In former years the annual census has been taken by 4-2 man crews in pole boats in the four major waterfowl areas within the refuge. Disregarding the fact that the waterfowl and wading bird concentrations vary in location with fluctuating water levels, the number of birds seen on an estimated 20% of the habitat was multiplied by five to arrive at the total estimated population. It is apparent that this system has produced an error running as high as 200%.

Due partly to the personnel situation at the time and partly to the desire to try out a waterfowl census of the Okefenokee by air, the 1946 census was taken by the refuge manager in a chartered Piper Cub plane from the local airport. The results were so startling that I had Mr. Edwards go with Tom Chesser into Chesser and Chase Prairies the following day to make a check count where I observed about 95% of the ducks using the area.

A comparison of the two methods showed that only about 1/2 the number of ducks were observed by pole boat as were seen in the same area from the air. In addition the trip by air proved conclusively that, except for wood ducks, almost the entire waterfowl population was concentrated in Chase and Grand Prairies.

It was also apparent that there was an actual decrease of 80% in the numbers using the refuge. We believe that this was partly due to the abnormally high water levels of the past few months and partly to the general decline of the duck population in this flyway.

The same high water levels have either reduced the population of wading birds using the refuge or concentrated them in the more inaccessible parts of the swamp. At any rate, fewer Herons, Egrets and Cranes have been seen than at any time during the past few years. The Wood and White Ibis have been seen frequently since March but not in the numbers of previous years.

Woodcock and Wilson's Snipe are occasionally observed around the border of the refuge and are apparently using the area in about the same numbers as in the past two or three years.

Mourning doves were frequently seen in the usual numbers until the middle of March and occasionally observed since that time.

2. Food and Cover.

Aquatic and marsh vegetation seemed to be somewhat less abundant than last year - probably due to the high water levels through the winter.

3. Diseases.

No diseased birds have been found in the Okefenokee Refuge;

B. Upland Game Birds.

1. Population and Behavior.

Bob-white quail have been observed on the east side in about the usual numbers. On the west side we have had more frequent reports of larger coveys than at any time in the past 3 years.

Wild turkeys remain scarce with one or two being occasionally reported, and signs more frequently seen. Since most of these are observed around the edges of the refuge, it is quite probable that poaching on the outside is at least partly responsible for holding the population down.

2. Food and Cover.

There does not appear to be much change in the availability of food and cover for upland game except in those areas where fire has reduced existing "rough". The area covered by fire #1 should produce both food and cover for an increased population of quail.

3. Disease.

No diseased birds have been reported.

C. Big Game Animals.

Deer and bear signs are frequently seen and the animals themselves occasionally observed. As the period ended, we began to hear of bear depredations in bee yards. We are making an effort to complete construction of bear traps and a carrying cage. When these are completed it is proposed to live trap the bears and turn them over to the State Game Department for release in North Georgia.

D. Fur Animals.

Raccoon signs continue to be numerous but we have not had as many sight reports as usual.

Reports on otters are scattered, but they^{at} can be accounted for by

the high water rather than any reduction in population.

E. Predaceous Birds.

Hawks, Osprey and Eagles have been observed in about the usual number, with the possible exception of a slight increase in the number of Marsh hawk.

F. Fish.

During the period only 6,358 fish were taken by 1690 fishermen. This is about 1/2 the number of fish and 477 more fishermen than in the same period last year. This is the second year of "no closed season" and we will be interested to see how the balance of the season compares with last year. We feel that the abnormally high water had a tendency to scatter the fish over the prairies and thus reduced the opportunity for catching as many as last year.

G. Alligators.

From our observations during this period we have come to the conclusion that alligators are more plentiful this year than at any time in the past 3 years. There seem to be more 'gators in the 3 foot class than I have ever seen and just a few days ago Edwards and Coleman observed a total of 37 'gators on and in the vicinity of Billy's Lake. We think this is due in no small measure to the increased accent on law enforcement over the past two years and the almost total absence of "raids" during that time. The very fact that there are so many 'gators in accessible places greatly increases the "raid" hazard and we are making every effort to head off or apprehend the poachers before they make serious inroads into the increased population.

III. Refuge Development and Maintenance.

A. Physical Maintenance.

Since Mr. Edwards' arrival in January he has, in addition to his enforcement work, taken an active interest in the maintenance work on the refuge and has been in closer contact with the work than the refuge manager. The balance of this section is, therefore, compiled by Mr. Edwards from his records.

Considerable time was spent by refuge personnel during the period in an attempt to maintain and crown the road leading into the Cornelia headquarters from the State highway and continuing on to the boat house and residence #3. However, the method of pulling a weighted drag over the road with a tractor did not prove successful inasmuch as it was impossible to crown the road in this manner and hard rains would continue to gully the road in the center. A blade type scraper is needed to place the road in a crowned state so that water will drain to either side.

On the western side of the refuge an attempt was likewise made to crown the road and fill holes. This road leads through the Pocket on to Jones Island from Griffis Camp and, like the Cornelia road, is traveled constantly by visitors and tourists. A slip type scraper was borrowed for use in filling the holes in the road but this method proved slow and unsatisfactory compared to the progress that could be made with a blade scraper.

As no dump truck was available, personnel were required to haul dirt in pickups and stake body trucks to fill holes. This required considerable time in shoveling the dirt into trucks and then out again.

It was necessary to haul a large amount of dirt to fill in around the culverts that were installed along the Cornelia roads during the preceding period. In places piling was driven to hold the earth from washing around the culverts.

The Cornelia headquarters area required a great amount of hand labor to maintain the lawns. Weeds and grass had to be out by hand. Considering the 8 miles of roadside between the headquarters and the State highway, where it is necessary to keep the weeds and grass out, this task assumes huge proportions to be accomplished by hand labor.

On the west side weeds and small saplings were out along the sides of the 7 miles of road through the Pocket and Jones Island to Billy's Lake.

A small tractor with mower blade is needed for the maintenance of lawns at Cornelia and keeping clean and orderly the sides of the road ways.

In an effort to reduce the fire hazard at Cornelia, palmetto and brush was controlled burned in areas where personnel did not have time to out obnoxious vegetation. Pine needles and grasses were raked away from the boat house and other buildings to secure them against fires.

Approximately 30 miles of fire lines were plowed on the eastern side of the refuge with the new fire plows. Lines were plowed around the headquarters area (Cornelia), through the adjacent woods, to protect the area from fires.

A gate was erected in the fence to permit entrance of fire-fighting equipment into Loyd's Island. About 6 miles of fire lines were plowed on the island.

It was necessary to replace log supports in the shelter over the gasoline pump at Cornelia and while in the process of doing so the shelter was rebuilt and new roof installed.

The flag pole at Cornelia was lowered to the ground by use of tractor and cables. The pole was then scraped, painted, top pulley repaired, and the pole again raised.

Window frames, door frames, doors and other trim were painted on Residences #1 and 2, the service building, oil house, pump house and private garages adjacent to residences.

New posts were fitted to the large refuge signs at Folkston and at the Cornelia road entrance. The signs were cleaned and painted. Numerous other smaller directional signs were painted and some new ones erected where needed.

About 60 new posts were put in the fence line on the eastern side of the refuge. Some new wire was put up to replace parts rusted out.

Toward the latter part of the period completion of the overnight patrol cabin at Billy's Bay on the Suwannee Canal commenced. All that remained to be done to this cabin at the close of the period was to screen same. This cabin will provide shelter for patrolmen and a place of concealment for observation of the refuge area nearby in an attempt to apprehend alligator hunters on the canal and in adjacent prairies.

The Suwannee Canal was cleaned of logs and bushes. Several trees were removed that had almost fallen across the canal.

Two plywood pole boats were constructed by the refuge maintenance man for use in the prairies and dense part of the swamp.

Two box type bear traps were built by the maintenance man and Mr. Andy Ray for the purpose of live-trapping bear that were killing cattle on lands adjacent to the refuge.

A great deal of time was consumed in the repair and maintenance of outboard motors. These units are used ^{extensively} ~~extensively~~ for patrol to the prairies on the eastern side and into the Big Water area on the western side.

The motorboat "Anhinga", FWS-176, was raised from the water in the boat house and supported on iron rails. The hull was cleaned and painted. The strut was removed, straightened and rebored to accommodate a standard rubber bearing in lieu of the special size expensive bronze bearing. The gasoline tank was removed and cleaned, a new motor tail shaft oil seal was installed, the fuel pump of the motor was overhauled and the motor given a general tune-up.

Three plywood pole boats and two outboard hulls were cleaned and painted. One large outboard hull was removed from the water and was being permitted to dry out at the close of the period prior to cleaning, overhauling and painting.

Refuge cars and trucks kept breaking down despite continued maintenance being given them by personnel. This is to be attributed to poor refuge roads, poor roads adjoining the refuge and the age of the vehicles.

Since no extra or spare vehicle was available it became necessary to continually spend considerable sums of money in order to keep the old Ford sedan bearing license #I-17144 operating. This vehicle is completely worn out and unsafe to operate.

The Pontiac sedan, transferred to this station from the Reelfoot Refuge, bearing license #I-17290, was placed in a garage for installation of a new motor, steering repairs, etc. before it could be considered safe to operate. At the close of the period the car was still in the garage.

Two attempts were made to repair the motor in the 6-cylinder Ford pickup, license #I-17274, large sums of money being spent each time but the motor will not hold up. This truck is in storage awaiting replacement or installation of a new motor when funds are available.

During the period a complete overhaul was given the motor in the Hudson car bearing license I-17268 at an approximate cost of \$90.00. This vehicle is holding up fairly well, considering the condition of the roads over which it must pass but the car is not suited for refuge patrol work or travel.

Both large Dodge stake body trucks, licenses Nos. I-17126 and I-17128 were used as fire standby trucks during the period for hauling tractors and pulling the fire plows when going to fires. At times it became necessary for the patrolmen to use these huge trucks for transportation to and from areas of the refuge for patrol purposes due to lack of other smaller vehicles.

The Chevrolet stake truck, license #I-17273, carrying a tank and fire pump was stationed at the northwestern area of the refuge as a fire standby truck. After several unsuccessful attempts, large 7:00x20 wheels were procured to replace the small 6:00x20 wheels with which the truck is equipped. The small tires would not carry the tank load of water on the truck and would not provide sufficient chassis clearance for travel over the poor roads leading into and on the refuge.

Two other Ford pickup trucks, licenses #I-17270 and #I-17272 were kept in condition during the period by constant maintenance. These vehicles equipped with water tanks and pressure pumps were used by patrolmen for fire fighting and transportation. The motor in truck I-17272 was given a complete overhaul in a commercial garage.

The Caterpillar tractor, license #I-16909 broke down while being used to repair the road through the Pocket and Jones Island and was placed in a commercial garage for repairs.

The Cletrac tractor, license #I-16983 was used during the period to pull fire plows and as emergency power for pumping water at Cornelia when the electric supply was out off due to line breaks. This tractor is in need of a clutch when funds are available.

IV. Public Relations.

A. Recreational Uses.

There were a total of 2185 visitors to the refuge during this period. Of this number 1690 were fishermen and 495 tourists, and professional

and amateur naturalists and photographers. This is the greatest number of visitors for this period since the Okefenokee became a refuge. The previous record was 1894 in 1943.

Our former chief guide at Cornelia, Albert Gay, returned from the Navy on March 6 and has since taken up the guide duties again. It is anticipated that a special permit will be issued to cover his activities and charges therefor.

In order to provide for more orderly use of the refuge for both recreation and study, the refuge manager recently submitted revised "Supplementary Regulations for the Administration of the Okefenokee Refuge". Recreational facilities will undoubtedly be used increasingly by visitors to the refuge and we must be prepared to handle the activity with the least possible criticism from the public. It is the writer's opinion that this can be done only by placing the recreational use plan and revised regulations in effect and by enforcing the provisions impartially.

During this period, the Okefenokee Association, Inc. started work on the boat run and road system at Cowhouse Island. Fairly good progress has been made on this work and a manager for the park has been appointed. It is anticipated that the Park will be formally opened and dedicated sometime in October, 1946, at which time they hope to have the Governor of Georgia and perhaps the Governors of adjoining states as well as members of Congress and other prominent personages present to take part in the ceremonies.

The Fish and Wildlife Service is permitting the use of a strip 600 feet wide along the west side of Lot 27 for use by the Association for a service road, roadside beautification and a boathouse.

The refuge manager has conferred with Dr. W. C. Hafford and William Dodson, President and Manager, respectively, of the Okefenokee Association, at frequent intervals during this period concerning the construction of the park facilities and cooperation between our organizations.

B. Visitors.

After spending three months on and in the vicinity of the Okefenokee Refuge, Mr. and Mrs. P. J. Haddock, of Wanakena, New York, left early in January enroute north. Mr. Haddock is an instructor at the New York State Ranger School and was interested in studying wildlife refuge management and forestry practices in this vicinity while on his sabbatical leave.

On January 4 and 5, Mr. Paul Kreager, Manager of the St. Marks National Wildlife Refuge, visited and assisted in the administration of the Okefenokee Refuge during the absence of the refuge manager. On January 21 and 22, Mr. Kreager returned to confer with the refuge manager and discuss events of the previous 2 months.

Game Management Agent Parker Smith assisted the refuge management on the Coleman-Lanier case from January 11 to January 14, and was most helpful.

From January 13 to January 18, Mr. A. C. Martinsen, of Rheems, Pennsylvania, visited various parts of the refuge with the refuge manager. One entire day was spent on the canal and Chase Prairie. Martinsen was formerly CCC Superintendent on the Moosehorn Refuge in Maine.

Mr. Andy Ray was detailed to the Okefenokee Refuge from January 18 to February 5 to assist us in setting up a bear trapping program.

On January 27, Mr. Allan D. Cruickshank of the Audubon Society conferred with the refuge manager relative to his proposed April trip in the Refuge. While he did not contact us at the time, we understand that he made arrangements with Lem Griffis and returned sometime during April.

Assistant Regional Director Moore and Regional Game Management Supervisor Davis arrived at the Okefenokee on January 22 and remained until January 29 working on the Coleman-Lanier case and incidently doing a brisk business with dove violators. Mr. Moore also designed and constructed a scale model bear trap during his visit.

Special Agents Bruce Greene and J. B. Gray, of the Federal Bureau of Investigation, entered the Coleman-Lanier case on January 23 and worked almost constantly on the case until March 4. While they, perhaps, should not be classed as "visitors", we conferred frequently with them and were mighty happy to have them "about".

On January 31, Dr. and Mrs. Grinnel, of Cornell University, visited the refuge office and we arranged for a trip into the swamp for them on the next day. Heavy rains made the road impassable from Folkston to Cornelia, however, and they were unable to make the trip.

From February 3 to February 5, Mr. and Mrs. Cherbonnier (formerly President of the Ralston-Purina Company and now with the National Audubon Society) were provided with boats and guides for trips into the swamp.

Dr. Clarence Watson, Federal Aid Supervisor, Region 4 and Mr. Parker of the Chicago office, visited the refuge manager on the evening of February 6. We have extended an invitation for a longer visit next time.

On February 18 Regional Director Silver visited the refuge office to discuss law enforcement and personnel problems.

Regional Refuge Supervisor Miller made an inspection of the refuge on March 6, 7 and 8 and conferred on various refuge problems with the personnel.

Mr. and Mrs. William Chenery (Publisher of Collier's Magazine) arrived on March 13 and were escorted out the canal for a day's trip by the refuge manager.

On March 22, Mr. and Mrs. Fleetwood and party (Piedmont Refuge) conferred with the refuge manager, inspected the Cornelia headquarters, and had a short trip out the canal.

On March 23, Mr. Edwards entertained a party of Atlanta artists with a trip out the canal. The party included Walter C. Hill, Travers Hill, Ben E. Sute, Elizabeth P. Oliver and Nell Shute.

Mr. Stover, formerly with the Okefenokee CCC Camp, stopped in the office on March 26 for a short visit with the refuge manager.

On March 30 we had the pleasure of entertaining Mrs. MacArthur and Mrs. Key of the Atlanta Regional Office, Mrs. MacArthur's mother, Mrs. Belmore of New Hampshire, and Mrs. Norris, formerly of the Regional Office. A trip out the canal, with Mrs. Barrett as official hostess and "guides" Edwards and Schaefer, and a fish fry presided over by "Bill" Edwards ably assisted by Mrs. Key and Mrs. Barrett, provided the highlights of the day. We are looking forward to a return visit as well as future visits from other Regional and Chicago office personnel.

Messrs. C. R. Ellis and Harold Stein, National Boy Scout Executives, were issued overnight permits to camp in the Okefenokee Refuge on April 6 and 7. Their visit was for the purpose of securing data and obtaining information for presentation to Scout Troops.

On April 8, former Senator and President of the Wildlife Federation, Fred M. Walcott, of Connecticut, Mr. and Mrs. Alexander King of Atlanta, Georgia, and Miss Whittemore of Boston, Massachusetts, arrived at the refuge and arrangements were made for them to stay at the refuge. Mr. King had to return to Atlanta the following day, but the rest of the party remained until April 15. We provided the Senator and his party with guides, boats and motors and enabled them to see considerable territory on the east side as well as one trip from Billy's Lake to Big Water on the west side. Senator Walcott expressed keen interest in Okefenokee and its future development.

C. Refuge Participation.

On January 6, L. B. Wolfe, Acting in Charge, conferred with members of the Waycross and Ware County Chamber of Commerce at Cowhouse Island relative to the establishment of the Okefenokee Park.

Dr. W. C. Hafford, President of the Okefenokee Association, had as his guests, Messrs. Edwards, Ray and Schaefer, at a Lions Club meeting, in Waycross on January 22. After presenting the three Fish and Wildlife Service men, "Doc" persuaded Andy to tell his "I'll do the same damned thing for you, brother, "story", much to the amusement of those present.

The refuge manager represented the Okefenokee National Wildlife Refuge at the annual meeting of the Waycross and Ware County Chamber of Commerce on March 15.

The Credit Women's Breakfast Club of Waycross invited the refuge manager to speak at their meeting at 7:00 A.M. on April 18. With great trepidation he accepted and while the 25 members present were most charitable in commenting on the talk, he is convinced that only the invitation to be refuge guests at some future date, saved the situation. 7:00 A.M. is a h--- of a time to try to make a speech.

D. Fishing.

Fishing has gradually improved from a low of 217 fish caught in January to 4599 caught in April. The total fish caught during the period, 6358, is far below the total of 12024 fish caught last year, and the 13,341 caught in 1943 when the season was closed during the last two weeks of the period. In 1945 fishermen caught an average of almost 10 fish per person, in 1943, 7.8 per person and this year less than 4 per person. It is quite possible that the abnormally high water this year has scattered the fish over the prairies and with lower water levels the take would have been greater.

E. Violations.

This portion of the report is now, and will in the future, be compiled by the Refuge Enforcement Agent.

On January 13, Refuge Manager Schaefer returned to this station from Boston, where he had been serving as Acting Regional Refuge Supervisor, for the purpose of conferring with District Attorney, J. Saxton Daniel and Assistant District Attorney Green B. Everitt relative the trial of Oliver Thrift, charged with the murder of Bryant Crews and Joe Martin, Refuge Patrolmen. At the conference it was pointed out that Thrift offered to plead guilty and accept a life sentence. The Dept. of Justice felt that it would be wise to accept the plea of guilty providing it met with the approval of Manager Schaefer and the Service. The refuge manager concurred in the acceptance of the guilty plea provided Thrift was given a life sentence on both counts. Schaefer was informed that parole for Thrift would not be possible prior to thirty years on each count.

In Federal court in Waycross on January 14, Oliver Thrift was sentenced to life imprisonment on two counts after entering a plea of guilty. Judge Lovett levied the sentences. Thus was concluded the most brutal murder ever to occur on a national wildlife refuge.

Just prior to Manager Schaefer's return from Boston, Patrolman Coleman apprehended Josh Lanier and H. D. McCrary of Fargo, Georgia, on January 8 in possession of fire arms and dogs on the refuge in the act of hunting deer. Two days later on the evening of January 10, Lanier

accosted Coleman in a small general store in Fargo in an attempt to persuade Coleman not to testify against him that he (Lanier) was hunting on the refuge. When Coleman refused to discuss the matter, Lanier became angry and started to attack Coleman. As Lanier charged at Coleman a kerosene lamp, the only light in the small store, was knocked over and put out. As Lanier was known to carry a fire arm inside of his shirt Coleman, fearing he would be killed, drew his Service revolver and shot Lanier five times. Lanier died shortly after he was shot.

Later, in the same night, Coleman was arrested on a charge of murder, sworn to by Lanier's widow. Patrolman Coleman was taken into custody by Sheriff Wooten of Clinch County and placed in the Homerville jail.

Upon Manager Schaefer's return from Boston to Waycross he immediately concerned himself with the release of his patrolman from jail and in securing defense witnesses. Coleman's arrest had been reported to the Regional Office in Atlanta, Georgia and through that office to the Central Office in Chicago. Manager Schaefer decided no investigation of the affair should be made until it was ascertained whether or not the F.B.I. would conduct an investigation, therefore no further attempt was made at that time to have Coleman released under bond from jail.

January 18, William R. Edwards, former manager of the Lacassine Refuge in Louisiana, reported for duty to Manager Schaefer in Waycross as a Refuge Enforcement Agent assigned to Okefenokee. Manager Schaefer discussed the Coleman situation with Edwards and it was decided some action should be taken to have Coleman released from jail. Accordingly, the Regional Office was called by 'phone and some action requested immediately. Roy Moore, Assistant Regional Director and William T. Davis, Regional Law Enforcement Supervisor arrived in Waycross on January 22 and advised the F.B.I. had taken over the investigation. Special F. B. I. Agents Greene and Gray contacted Manager Schaefer on January 23 and discussed the situation. The Department of Justice men expressed their desire that Coleman remain in jail until their investigation was completed.

Coleman remained confined in jail until February 2 when he was arraigned before Judge Smith in Clinch County court at Nashville, Georgia. Judge Smith ruled there was no evidence of murder as charged and released Coleman under \$7500.00 bond on a charge of manslaughter.

The Clinch County Grand Jury meeting on March 4 returned a "no bill" against Coleman and the charge was voided.

Witness affidavits had been completed against H. D. McCrarey, at the close of this period and forwarded to the Regional Office for handling and further processment. McCrarey was apprehended, in company with Lanier, hunting on the refuge on January 8.

Agent Edwards, on March 15, apprehended Arnold Johnson of Youngston, Ohio trespassing on the Cornelia refuge area at about 8:00 P.M. Upon apprehension Johnson acted queer and nervous but advised he merely wished to see the swamp and had hitchhiked to the refuge. No prosecution was recommended after Edwards and Manager Schaefer conferred.

While patrolling the Chase Prairie area on the night of March 18, Patrolman Wolfe, Ammons and Coleman in company with Agent Edwards apprehended Karl Lane and Messrs. Manning, Finney and Starkey setting up overnight camp on Floyd's Island without permit required. The party was ordered to break camp and brought to the Cornelia headquarters at 3:00 A.M. the following day. After conferring with Manager Schaefer, Agent Edwards recommended no prosecution since members of the party were confused as to necessary permits required. Manager Schaefer questioned those apprehended and instructed them that further violations of refuge regulations would bring about recommendations for prosecution.

Patrolmen were instructed to check sport fishermen leaving the boat landings at Cornelia and Billy's Lake but no evidence of over limits were discovered in the taking of fish. Numerous persons were apprehended returning to the boat landings after darkness and were courteously warned they should leave the refuge by sundown in the future.

Enforcement

Taking into consideration the size of Okefenokee, the class of violator and the danger to patrolmen involved, Manager Schaefer and Agent Edwards entered into numerous conferences and discussions regarding the problem and the safety of the patrolmen. The following resolutions were decided upon:

1. Patrolmen should be equipped with first-class side arms and be trained in their use. (As soon as cartridges and targets are available this will be carried through.)
2. Patrolmen should be trained in arrest, apprehension, search and seizure in accordance with law enforcement standards. (This is being carried on under Edward's supervision.)
3. Patrolmen have been instructed to use caution when advancing on or stalking violators, to keep separated when patrolling in dense cover, to fall to ground and roll to cover, if fired upon, and to immediately disarm all persons arrested or apprehended.
4. Patrolmen have been instructed to not discuss patrol policies or plans with anyone other than refuge personnel and at no times in public places.

It was decided to use the squad method of patrol as soon as possible. Patrolman Coleman is being transferred to Waycross from Fargo to team up with Patrolman Wolfe. Another patrolman is needed to work with Ammons on the eastern side of the refuge. Until the position is or can be set up Ammons will patrol with Agent Edwards or maintenance man Gay. At times patrolmen will be shifted on assignments to work with each other in order that the entire refuge area will be learned by each man. Assignments considered dangerous will be supervised by Agent Edwards or Manager Schaefer. At all times it is intended to have a superior number

of men when arresting dangerous violators.

8- As soon as possible a standard uniform will be adopted by refuge personnel for use on patrol and appearance in public on official duty. The adoption of a uniform will command respect for the officers and will prevent criticism of the Service.

9- Approximately once a month personnel will be called into meeting at which time they will be instructed by Manager Schaefer on refuge policy and equipment maintenance. Agent Edwards, at these meetings, will instruct and discuss on policy of patrol and enforcement.

Agent Edwards has been instructed by Manager Schaefer to set up and maintain a complete violation and enforcement file. This file will be completed during the first part of the coming period.

It is hoped the Service will allot sufficient funds to the refuge office for the purchase of patrol supplies and equipment with which to properly train personnel in offensive and defensive patrol tactics. Okefenokee is a large and dangerous area to patrol. Every attempt will be made to efficiently patrol the area with available personnel. It is suggested, however, that every consideration be given to the assignment of one more patrolman to the refuge.

V. OTHER ITEMS

A. Items of Interest.

On January 9, Walter H. Ammons entered on duty as Laborer-Patrolman with headquarters at our Cornelia headquarters. He fills the vacancy left by Joe Martin who was killed on his second day of duty in June, 1945.

After nearly two months on detail in the Boston Regional office as acting refuge supervisor, the refuge manager returned to Waycross, on January 13, for the Thrift trial, only to find the problems of the Coleman-Lanier case awaiting his attention. During his absence, Patrolman Wolfe was acting in charge and, with Mrs. Barrett (Clerk-Stenographer) handling most of the administrative details, turned in a good job.

A long-felt need for a trained man to handle law-enforcement work on the Okefenokee Refuge was finally satisfied with the assignment of William R. Edwards as Refuge Enforcement Agent on January 18, 1946. Mr. Edwards' primary job is to head up our enforcement work under the general direction of the refuge manager and, in addition, to act as refuge manager during his absence. "Bill" walked into a tough spot at an inopportune time (right in the middle of the Coleman-Lanier case) and the fact that he has "waded right into" his job and been of ~~unesti-~~ *inestimable* mable help to the refuge manager in maintenance and public relations work as well as devoting considerable energy to familiarizing himself with the areas, augers well for the future.

From January 26 to February 2, Mr. Edwards traveled to the Reelfoot Refuge by train and brought back, with some difficulty, a Pontiac Sedan for our use. Unfortunately, the car is still in a local garage awaiting major repairs.

The urgent need for replacement trucks prompted the refuge manager to spend February 26 and 27 at Camp Blanding, Florida in an effort to locate suitable equipment from surplus property. The available trucks were in almost as bad condition as ours and we made no attempt to have any transferred.

As the period ended, the refuge manager was plating lot lines on aerial photographs of the refuge preparatory to drawing up a new refuge map, type mapping the areas and making a preliminary timber survey.

Respectfully submitted

Walter P. Schaefer

Walter P. Schaefer
Refuge Manager

May 11, 1946.

Date May 27, 1946

Approved ARTHUR F. MILLER
By: M. K. Shurber

OKEFENOKEE NATIONAL WILDLIFE REFUGE

ANNUAL REPORT

Since the last annual report, 59.47 inches of rain have fallen at our weather station at Cornelia and at least that much more over the rest of the swamp. The good results of such an abnormal rainfall has[^] been a lessened fire hazard and good travel conditions by pole boat. At the same time, so much water is unfavorable for maximum use of the refuge by wading birds and waterfowl, makes travel conditions by car and on foot very difficult, and, by permitting fish to scatter over the prairies, reduces the take of fishermen.

The waterfowl census provided us with startling information. For the first time it was made by plane and about 75% of the area covered. From observations made on the trip it became obvious that the previous method of making the census by pole boat had introduced large errors in counting the total number of birds using the refuge. It was estimated, however, that there was an actual decrease in the waterfowl population of approximately 80% from 1945.

The high water levels of the past year have also been unfavorable for the wading birds and as a result there have been drastic declines in the population of our herons, egrets and cranes.

During the period covered by this report, 11 fires have burned a total of 991 acres or an average of 90 acres per fire. The number of fires has been drastically reduced, but the size of the average fire has increased considerably. This was caused partly by high water levels which made access to the fires with motorized equipment impossible and by the necessity of hiring and training 3 different men in the worst fire area. I think

it is worth noting, however, that there have been no fires in the area formerly burned by Oliver Thrift since the day he was incarcerated.

Fishing during the past year has varied from poor to excellent. A total of 41,120 fish have been caught by 5446 fishermen, an average of approximately 7.5 fish per man.

In addition to the 5446 fishermen, there have been 1206 visitors to the refuge for other purposes. This makes a total of 6652 visitors for the year and is, I believe, the highest number since Okefenokee became a refuge. The predicted influx of post-war visitors is definitely on the way, as the record of the 2185 visitors during the past four months indicates. This is an increase of 15% over the previous high made in 1944.

The struggle to maintain and repair our worn-out equipment has gone on throughout the year. The cost of maintenance and repair of motor vehicles alone, since July 1, 1945, now stands at approximately \$1900.00, and we have two major repair jobs to be done now that will cost a total of over \$500.00 and for which there are no funds available.

In spite of the addition of several items of equipment during the past year, we are still severely handicapped by the lack of sufficient tools and equipment. Aside from a quite considerable list of hand tools, we badly need a tractor-mower and graders to maintain our headquarters area, recreational areas and roads.

For most of November, all of December and part of January, the refuge manager was detailed to the Boston Regional Office as acting Refuge Supervisor. During the absence of the refuge manager the refuge was operated by a combination of Laborer-Patrolman Wolfe, Clerk-Stenographer Barrett, and Refuge Manager Kreager of the St. Marks Refuge.

The tragic murder last June of Patrolmen Crews and Martin and the necessity of finding and breaking-in new men as replacements, has handicapped the refuge administration throughout most of the year. We now have all the authorized patrolmen positions filled and with the addition of Refuge Enforcement Agent Edwards, our efficiency should show a marked increase. Since Coleman was attacked by and forced to kill Josh Lanier in January, we have concluded that a squad plan of patrol was necessary for the safety of the men. To be fully effective, and still leave the refuge maintenance man free to carry on his maintenance and repair work, we should have one additional patrolman for the east side.

Among other measures being taken for greater safety of the men are the following: patrolmen are to be equipped with first-class side arms and be trained in their use; patrolmen are to be trained in the techniques of arrest, apprehension, search and seizure in accordance with law-enforcement standards; patrolmen have been or are being instructed in methods of advancing on or stalking violators, to fall to the ground and roll to cover if fired upon, and to immediately disarm all persons arrested or apprehended; patrolmen have been instructed to not discuss patrol policies or plans with anyone other than refuge personnel, nor in public places at any time.

We will not countenance the promiscuous use of firearms by our personnel but events of the past year have already shown that our men must be prepared to act positively in any given set of hazardous circumstances.

The murder of Bryant Crews and Joseph Martin brought about the arrest and successful prosecution of Oliver Thrift who was sentenced to life imprisonment on two counts by Judge Lovett in Federal Court in Waycross on January 14, 1946 after entering a plea of guilty to the charge of

murdering the men from ambush.

Although McCray L. Coleman, Laborer-Patrolman, spent three weeks in the Homerville jail, for killing Josh Lanier, while the Department of Justice completed their cases, he was released and later cleared by the action of the Grand Jury in returning a "no bill" on the warrant charging him with manslaughter. There is a possibility that the case will be brought up again before the next Grand Jury. If it is, and Coleman is again freed, as we anticipate he will be, the action will close the case, since two Grand Jury actions equal an acquittal. In the meantime, the F.B.I., as well as this office, ^{is} are keeping close watch for developments.

It is rumored that these two cases have formed the basis for a rather convincing argument among violators, "When they kill us, we get them - but when we kill them, it's O.K.":

Respectfully submitted

Walter P. Schaefer

Walter P. Schaefer
Refuge Manager

May 11, 1946.

APPROVED:
ARTHUR F. MILLER
134: M.K. *Shurben*
5/22/46

WATERFOWL

Refuge Okauchee Months of January to April 1948

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total Estimated for Period
	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	
I. Swans:									
Whistling swan									
II. Geese:									
Canada goose									
Cackling goose									
Brant									
White-fronted goose									
Snow goose									
Blue goose									
III. Ducks:									
Mallard			493	1/30	6	2/20			690
Black duck			357	1/30	115	1/31			480
Gadwall			12	1/31	12	1/31			15
Baldpate			5	1/31	5	1/31			5
Pintail									
Green-winged teal									
Blue-winged teal									
Cinnamon teal									
Wood duck		Resident	33	1/30					1000
Red head									
Ring-necked duck			20	1/30	20	1/30			25
Canvas-back									
Scaup									
Golden-eye									
Buffle-head									
Ruddy duck									
Hooded Merganser			10	1/30	10	1/30			25
IV. Coot			2	3/29	2	3/29			2

(over)

SUMMARIES

3-1750
Form NR-1
(Nov. 1945)

Total Production:

Geese..... Total waterfowl usage during period.....

Species	First Seen	Peak Concentration	Last Seen		Young Produced	Estimated Total
			Date	Number		
Ducks.....						
Geese.....						
Coots.....						

Peak waterfowl numbers.....

Areas used by concentrations.....

Principal nesting areas this season.....

Reported by.....

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.

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

MIGRATORY BIRDS
(other than waterfowl)

Refuge Okefenokee Months of January to April 1946

(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:										
Water Turkey		Resident	2	4/10						200
Ward's Heron		"	5	1/30						750
American Egret		"	20	1/30						1000
Little Blue Heron	1	2/26								50
Eastern Green Heron	1	3/29	2	4/24						100
Yellow-crowned Night Heron	1	1/30								10
Wood Ibis	10	4/4	10	4/4						100
White Ibis	31	3/21	31	3/21						500
Florida Crane		Resident	34	1/30			3	2	2	300
II. Shorebirds, Gulls and Terns:										
Woodcock	Both species occasionally seen but no specific observations available for this period.									
Wilson's snipe	Both species occasionally seen but no specific observations available for this period.									

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove		15 2/26	10 3/6		5000
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow					

Reported by.....

INSTRUCTIONS

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

Refuge OkefenokeeMonths of January to April, 1948

(1) Species	(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'vd.	Estimated Total		Hunting	For Re- stocking	For Research		
Bob-white Quail	There is no possibility of obtaining exact figures for this species or for wild turkeys. During this period several large coveys have been observed, and it would appear that there has been a slight increase over last year.									
Wild Turkey	This species is occasionally observed around the border lines of the refuge but more often only signs are seen. Does not appear to be on the increase.									

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

Okefenokee

April 30, 1948

(1) Species Common Name	(2) Density Cover Types & Total Acreage of Habitat	(3) Removals Acres Per Animal	(4) Disposition of Fur						(5) Total Popula- tion			
			Hunting	Fur Harvest	Predator Control	For Re- stocking	For Research	Share Trapping Permit Number		Trappers' Share	Refuge Share	Total Refuge Furs Shipped
Raccoons	300,000 Ac. Timbered swamp and marshes		There is no possibility of obtaining exact figures for any of the species listed on this form. Coons are common throughout the swamp and, though they are not seen in great numbers, signs are common and indicate that this species is at least holding its own.									
Otters	250,000 Ac. marshes and timbered swamp		Otters have been observed occasionally during the past year.									
Gray Squirrel			Both species are frequently observed on the refuge. They appear to be increasing									
Fox Squirrel			slightly.									

REMARKS:

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i.e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) **SPECIES:** Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)
- (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, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) **REMOVALS:** Indicate the total number under each category removed since April 30 of the previous year. Also show any removals not falling under heading listed.
- (4) **DISPOSITION OF FUR:** On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market and the total income to the refuge by species, including share-trapped furs and furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) **TOTAL POPULATION:** Estimated total population of each species reported on as of April 30.
- REMARKS:** Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

REFUGE GRAIN REPORT

Refuge Okefenokee

Months of January thru April 1946

(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
No Grain on hand, received, or used during this period.										

- (8) Indicate shipping or collection points.....
- (9) Grain is stored at.....
- (10) Remarks.....

REFUGEE GRAIN REPORT

NR-8a REFUGEE 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.

(8) Indicate shipping or collection points

(9) Grain is stored at

(10) Remarks