# EARLY HISTORY OF PATUXENT WILDLIFE RESEARCH CENTER (circa 1948) by Dr. L. B. Morley

A REPORT ON THE HISTORY AND DEVELOPMENT OF
THE PATUXENT RESEARCH REFUGE

## Introduction

In the short span of twelve years the Patuxent Research Refuge has become an important institution in the program of wildlife restoration. It is a monument to those who have helped make it possible because they believed that research was a basic necessity. The Refuge was developed during the critical years of the depression and continued to progress through the turmoil of World War II. History was accelerated and little opportunity was given for the recording of events.

Permanency has come to the Patuxent Refuge and with it organization and unfaltering progress toward the designed destiny. The period of confusion is past and the early construction scars have heeled. The function of the Refuge will remain an existing accomplishment, but the original incidents and events concerned with its founding and development already have become legendary. It is appropriate that the facts be recorded and that the history of the first national Wildlife Experiment Station be complete.

## Purpose

The riotous squandering of our most valuable and priceless heritage, our natural resources, is appalling when we compare the duration of our national history with that of civilization. Many are cognizant of the recreational and economic importance of wildlife, and with the endless problems concerned with maintaining or restoring it, but too few, having no selfish or partisan interests, can or will contribute what is demanded.

The new conception of wildlife requirements recognized the need for research as a prerequisite of building and administering an intelligent and practical program. The term research has a magic ring and an obscure meaning for many, but it means simply, knowledge gained from very hard work and numerous disappointments. The Patuxent Research Refuge, consisting of lands, water areas and buildings is a laboratory for the study of the numerous wildlife problems. The phases are unlimited--the problems being answered today will give way to new ones arising tomorrow.

The need for a research area near the Nations's capital where specialized wildlife investigations could be carried on under the guidance or leadership of our country's foremost scientists was recognized by J. N. Darling, Chief of the Biological Survey, and his successor, Dr. Ira N. Gabrielson. The vision and foresight of these two

men were translated into action by Dr. Gabrielson in the spring of 1936.

## Preliminary Planning and Development

The year 1934 was momentous one in that the Biological Survey under the leadership of J. N. Darling, had embarked upon the greatest expansion and development program in its history. It was a year of opportunity and the Service was making a tremendous effort to provide for the immediate and future requirements of wildlife conservation. The Department of Agriculture, with the assistance of a Civil Works Administration grant, was busily engaged at Beltsville, Maryland, in transforming their blueprints for a National Agricultural Research Center into a reality. The various Bureaus of the Department were encouraged to transfer their research activities from Washington, D.C. to Beltsville, and unusual opportunities were offered as an n inducement.

Mr. Darling was an enthusiastic conservation propagandist and his ideas were factious. The opportunity to establish an experiment station came as a result of this and what appeared to be an over expansion in land acquisition of the Beltsville project. Dr. Rexford G. Tugwell, Under Secretary of Agriculture, and Dr. B.N. Bressman, Scientific advisory to the Secretary, were interested in conservation and sympathetic with the needs of the Bureau. There were both of material assistance in acquiring the first area and later in the development of the Patuxent Research Refuge.

In the early spring of 1934 the Bureau was invited to inspect a tract of land lying along Beaver Dam Creek for its suitability as a wildlife area. Mr. Darling and his staff committee, after going over the land with Dr. B. W. Sheets, Project Director, decided that our Bureau could carry on worth while experiments at the Beltsville Farms. The original idea of the station visualized a demonstration area stressing the importance of the relationship of wildlife to agriculture. The Resettlement Administration had embarked upon a national program of retiring submarginal land from agriculture and the Bureau had the golden opportunity of demonstrating through the science of game management the most practical uses of waste land.

The first offer of 100 acres was declined and Mr. Darling in a memorandum of March 27 to Dr. Bressman requested a minimum of 500 acres. An informal allocation of a tract of 700 acres was made by Dr. Tugwell following this request and preliminary work was stated in early April. Fire lands and other incidental clearing work under the direction of W. L. McAtee was accomplished with CWA labor furnished from the project directed by Dr. Sheets. The labor was available from the duration of the project.

Mr. Darling, on May 8, 1934, made formal application for the allocation of land comprising the Beltsville Wildlife Demonstration Area. The Bureau was advised by S. H. McCrory, Coordinator, on May 18, that the project and the boundaries had been approved by Dr. Tugwell. Considerable interest was aroused both within the Bureau and in other agencies, and many new opportunities for practical use of the area became apparent.

A committee, with Mr. Rudolph Dieffenbach as chairman and a project director were appointed by the Chief to coordinate and direct the activities of the experiment station. Topographical and soil surveys were made. Areas were plowed and planted with a great variety of plants which would furnish a winter supply of feed for the wildlife on the area and information on the selection and utilization of the different varieties. A census of the wildlife was taken. Cleaning and piling of brush was done to provide cover for game. Plans were made for a dam on Beaver Dam Creek which would flood the marsh land and serve as a resting or breeding place for waterfowl, beaver, muskrat and fish. The headquarters for the station were designed by Mr. Amos B. Emery, Bureau Architect, and his staff. Plans and provisions were made for a caretaker's house, a laboratory building, storage barn, small game bird propagation plant with complete service facilities and specifications were written in preparation for letting the work by contract.

In the area of land allocated to our Bureau several tracts totaling approximately 425 acres had been acquired, the remaining 374 acres were either under lease, under option, or were in the process of being condemned. We had been assured that money was available in the general fund for the acquisition of all of the lands in question. It developed, however, that the Department did not have either sufficient funds to purchase the land or to complete the work on the Beltsville laboratory buildings that were under construction. The Bureau in allocating NIRA funds had reserved construction money for the station but the additional required land purchase was not and could not be made available. The Department had included several requests for the project in their applications for the allotment of PWA funds but there was little indication by July 1935 that any approval would be granted.

Mr. Darling had become somewhat discouraged from past reverses and he was beginning to lose interest in attempting to maintain a wildlife area in the midst of an agricultural experiment station. The Bureau of Plant Industry had made application for the transfer of 30 acres of the tract to be used for longtime pasture studies. Approximately 15 acres of the most desirable wooded area had been also thinned and fenced by Animal Industry for goat pastures. We has also been advised that the Park Service was expected to build a scenic highway through the center of the tract. The futility of attempting to adapt our plans and program to this tract under such conditions was obvious, and consideration of the Patuxent area was a natural development.

It was indeed fortunate for all concerned that circumstances prevented the first wildlife demonstration area from becoming a reality. Those familiar with the tract, in referring to the attached map, will have difficulty in reconciling it with the present swine area and the developments of other agencies in the vicinity.

Although the first location was abandoned, the purpose and plans were, with the help and assistance of many individuals and agencies, to be eventually realized in the Patuxent. The Resettlement Administration under the direction of Dr. Tugwell had acquired a large tract of land in Prince George's County, Maryland, and had begun construction on Greenbelt, a low-cost housing project. The area between Greenbelt,

the Beltsville Research Center and the Patuxent River was marginal in type consisting of woods, and abandoned or unprofitable farms. Mr. Alexander Ruhl, Project Manager of the Administration's field organization, had a large portion of the tract under option and they were making surveys in preparation for purchase. Dr. Tugwell, following the collapse of the Bureau's plans for the Beltsville project, suggested the transfer of our activities to the Patuxent area. Mr. Darling was involved and engrossed with problems of a national scope and with the dissatisfaction of the outcome of the first venture he found it difficult to work up much enthusiasm for a second tract of private ownership.

Dr. Gabrielson, then Assistant Chief of the Division of Wildlife Research, was requested to investigate the situation and see what could be developed. Subsequent to a visit of the Patuxent area on August 14, 1935, with Dr. Bressman and the other members of the Departmental Committee, Dr. Gabrielson wrote Mr. Darling the following:

"The area tentatively assigned to the Biological Survey is infinitely better than the one previously given us. I am sure, if given this area and some money with which to develop it, we could make a wonderful wildlife demonstration area here. I intend to follow this up and have plans developed for the area in the immediate future."

"Gabe," as he is affectionately called by all who have worked with, or know him, had the vision that this station could be to wildlife conservation what the Rothemstead Experiment Station in England is to agriculture. He spent innumerable weekends from this time through the period of construction and development in tramping the area with members of this staff to familiarize himself with the refuge and to plan for the future.

The Bureau took over the Patuxent with the verbal consent, understanding and assistance of Dr. Tugwell, Dr. Bressman, Mr. Wallace Richards and others of the Resettlement Administration, and with the assurance that the land would be acquired as scheduled. Mr. Harry A. Nelson, Director of the Beltsville Research Center, during a conference with Dr. Bell, had pledged full cooperation. The center administered three CCC Camps and it was agreed that labor would be devoted for much of the improvement work as soon as title to the land was vested in the Government. The success; of this project seemed assured from the first.

Proper protection against poachers and trespassers was considered to be an essential and primary provision in setting up an experiment station. Mr. Darling in a letter of September 17, 1935, to Mr. Harry Nelson, suggested that the entire Beltsville Center be set up as a game preserve by an Executive Order. This proposal was enthusiastically endorsed by the Director of the Center and many of the agencies concerned, with the exception of the Bureau of Animal Industry. The Pathological Division of BAI in a news article went so far as to publicly criticize, as a disease hazard, the Bureau's proposal to establish an experiment station in the vicinity. Numerous conferences were held and much correspondence was exchanged on the subject, but the matter was becoming dissentious and was dropped by Dr. Gabrielson soon after he became Chief of the Bureau.

Although trespass regulations were necessary, "Gabe" felt that they would have more significance if they were supplemented by a boundary fence that was difficult, if not impossible to climb. He had conceived a plan to action for acquiring the fence and requested that estimates for material purchase and construction of the entire boundary fencing of the type desired be prepared. An opportunity was offered a short time later for Dr. Gabrielson to discuss the importance and necessity of fencing for the area with the Resettlement Administration. Dr. Tugwell was in complete accord with the plans and agreed to give the request favorable consideration upon receipt of the estimates. "Gabe," having anticipated the standard reply to a request for funds, promptly placed the estimates on the desk before Dr. Tugwell for his approval. A commitment, inadvertently had been made and Dr. Tugwell being also a man of action and being amused by the situation approved the estimates and instructed Dr. Bressman to allocate the necessary funds.

Officials of the Resettlement Administration during that period were inclined to be generous because their appropriation appeared to be the "horn of plenty" and they had little or no cognisance of the over-all cost of their program. Mr. George Nichols, Suburban Resettlement Division Architect, had been assigned to develop plans for the Biological Survey, Forest Service and other agencies at Beltsville. It was anticipated that upon the completion of Greenbelt sufficient funds might remain for the Construction Division to carry on work for other units. Dr. Gabrielson had, on his first visit to the area, been captivated by Snowden Hall with its surroundings and had decided thereupon that this was the location for our headquarters.

Snowden Hall - Patuxent Research Refuge before remodelling

The old house had been a colonial homesite located on a country road long since abandoned and although isolated was an ideal location. The residence appeared to be vacant and Dr. Gabrielson on one of his early visits wishing to inspect the house had found that it could be entered through a second story window by means of a decrepit ladder. We leaned later that this dwelling was occupied intermittently by the owner, Miss Alice Hopkins, a prim and precise elderly lady who coveted privacy and

objected to what she considered were Government snoopers. To complete the early plans, and with the encouragement of the Bureau Chief, some of our personnel became accomplished second story men. Preliminary sketches and drawings designed to harmonize with the old manor house were made for the station by Mr. Nichols and his staff. This general plan was adhered to by the Bureau architects when working drawings and specifications were made preparatory to construction.

Mr. Ruhl and his organization had completed their surveys and it appeared that acquisition of the Patuxent area would be complete by the mid-summer or early fall of 1936. The Resettlement Administration granted the Bureau's request for authorization to occupy the area in lieu of an Executive Order transferring the property. A log residence of recent construction and in good condition was acquired with the Holst tract in April 1936.

It was occupied by the Refuge Superintendent on May 15 and the development program for the Patuxent was started the following month.

## Description and History of the Area

The Patuxent Research Refuge, and area of 2,679.15 acres, was established by President Roosevelt in Executive Order No. 7514 of December 16, 1936. The Order as published in the Federal Register, Volume I, No. 198 of December 18, 1936, incorporated the land in Prince George's County purchased by the Resettlement Administration and the land in Anne Arundel County to be acquired by the Bureau in a later transaction. The property is bounded on the north by Fort George G. Meade and by the Beltsville Research Center on the south. The headquarters is located in the extreme northwest part of the tract approximately 5 miles from Bowie and 6 miles from Laurel, Maryland. It is easily accessible from Washington by high ways through Laurel, Bowie, or the Research Center.

The name for the station was selected by Dr. Gabrielson as being most appropriate because it was simple, had rhythm and was descriptive of the area and the work to be carried on. Changes in the name for the station have been suggested from time to time but the name and the association will endure.

The largest of two fenced units of the Refuge is approximately 1,500 acres and extends along the Laurel-Bowie Road for a distance of 3 miles. The Patuxent River separates the Anne Arundel portion of 432 acres from the headquarters and remainder of the Refuge in Prince George's County.

The second unit of 700 acres containing Cash and Redington lakes extends south-southwest from the Laurel-Bowie Road for a little more than 2 miles along Telegraph Road. A third unit of approximately 60 acres bounded by the Laurel-Bowie and Jerico Park Roads lies at the eastern extremity of the Refuge. The unit is unfenced and thus far has served no purpose in the research program, but it was an important source of gravel for early construction work and clay fill for the dam at Cash Lake. A Special Use Permit, approved June 7, 1948, was granted to Disney-Bell Post No. 66, American Legion, Bowie, Maryland, for community use of a 6-acre triangle located on the southern tip of the tract one-half mile from Bowie.

The units combined form a rough crescent or "L" shaped area to partially encompass the Forest Service and other units of the Research Center. The Refuge is irregular in shape; is about 5 miles in length and varies in width from on and three-fourths miles to about one-third of a mile. It has 16 miles of boundary of which about 15 miles are under fence.

Approximately one-third of the area is open farm land that has been or is under cultivation; about one-third is upland woods and the remainder varies from wet lowland to marsh or swamp. The upland woods consist of mixed stands of pitch and Virginia pine, deciduous trees of which oaks predominate and a great variety of shrubs. The woods of the lowland are primarily sweet gum, beech, blue beech, pin oak, red maple, river birch, and tulip poplars. The Patuxent River divides into numerous meandering channels and is bordered by flood lands that are permanently swampy and by extensive woodlands that are subject to overflow.

The upland woods and much of the bottom lands have been timbered within the past seventy-five years and are in second growth. Many fine specimen trees, that were either inaccessible or too large for the early sawyers and the mills to handle, remain undisturbed in their environment. Two such giants located in the Patuxent lowlands, an overcup oak (Qerous lyrata) with a circumference of 15 feet, 5 inches, and a river birch (Betula nigra) with a circumference of 11 feet, 5 inches, have been recorded with the American Forestry Association as the largest living specimens of their kind.

The woods have been carefully protected against the ravages of fire and except for roads or trails, planned clearings, and selective cuttings, remain undisturbed and retain their natural beauty with an abundance of colorful flowers, shrubs, and trees.

Of the twenty-two separate tracts comprising the refuge, one was transferred from the Bureau of Animal Industry; eleven were transferred from the Resettlement Administration by Executive Order; eight were Service acquired under condemnation proceedings; and a small one of four-tenths of an acre was obtained by the exchange of fifty cords of slab wood. The Barton Tract, No. 131, a small diamond-shaped property of approximately 3 acres lying along south Telegraph Road on the Forest Service area, was never acquired and is still privately owned. A tiny triangle of .15 acres extends across the road into the fenced area of the Refuge and has previously been counted into our acreage.

The records as maintained by the lands Division are as follows:

Refuge Lands

| Tract No. | Name | County | Acreage | Cost | Acquisition | Date |
|---|---|---|---|---|---|---|
| 4 | Hayden | P.G. | 23.65 | 976.46 | TR-BAI | 6/27/36 |
| 96 | Hoffman | P.G. | 421.28 | 4,634.08 | TR-RA | 12/17/36 |
| 97 | Sparks | P.G. | 4.25 | 119.00 | TR-RA | 12/17/36 |
| 99 | Kluckhuhn | P.G. | 375.69 | 15,309.37 | TR-RA | 12/17/36 |
| 100 | Perkins | P.G. | 90.87 | 2,953.27 | TR-RA | 12/17/36 |
| 104 | J.B. Knowles | P.G. | 121.39 | 7,283.40 | TR-RA | 12/17/36 |
| 105 | Hance | P.G. | 71.76 | 9,185.28 | TR-RA | 12/17/36 |
| 112 | J.W. Knowles | P.G. | 92.48 | 5,456.32 | TR-RA | 12/17/36 |
| 114 | Holst | P.G. | 386.61 | 15,851.01 | TR-RA | 12/17/36 |
| 120 | Hall | P.G. | 2.52 | 606.95 | TR-RA | 12/17/36 |
| 123 | Harding | P.G. | 240.42 | 6,611.55 | TR-RA | 12/17/36 |
| 145 | Hopkins | P.G. | 415.90 | 23,290.40 | TR-RA | 12/17/36 |
| 14 | Kuhl | P.G. | 0.40 | --- | Exchange | 2/21/41 |
| 5 | A.A. County | A.A. | 159.09 | 1,475.77 | Cond. BS | 3/1/40 |
| 6 | Repetti | A.A | 20.85 | 466.55 | Cond. BS | 3/1/40 |
| 7 | Knight | A.A. | 55.55 | 1,016.56 | Cond. BS | 3/1/40 |
| 8 | Glatfetler | A.A. | 28.41 | 724.46 | Cond. BS | 3/1/40 |
| 9 | Volkmer | A.A. | 131.63 | 3,170.97 | Cond. BS | 3/1/40 |
| 10 | Turner | A.A. | 7.62 | 328.98 | Cond. BS | 3/1/40 |
| 11 | Hanus | A.A. | 2.39 | 88.43 | Cond. BS | 3/1/40 |
| 12 | Melikin | A.A. | 26.39 | 395.85 | Cond. BS | 3/1/40 |
| Total Acreage and Cost | | | 2,679.15 | 99,954.42 | | |

## Early History of the Area

A representative commissioned by Lord Baltimore to inspect the Patuxent Territory as to its suitability for colonization reported back that it gave promise of being both fruitful and prosperous. An early History of Maryland in discussing the wildlife of the colony reported that the upper regions of the Patuxent abounded with game and fish. Turkeys, pheasants, woodcock and other game birds were numerous and flocks of turkeys numberings more than a hundred birds were frequently seen. Deer were found in great numbers and were so tame that they could be easily approached and almost touched. The entire Chesapeake region witnessed the migration of immense flocks of waterfowl and pigeons. The waters in the vicinity of the bay were said to be so black with ducks that 15 to 20 birds were easily killed with a single shot. Clams, oysters, crabs, fish and other sea food could be had by the early settler with a minimum of effort.

A site on the refuge near the old mill race on the north side of the Patuxent River is the reported location of an early Indian village or encampment. That Indians roamed and hunted the area intensively is evidenced by the numerous relics that have been found and added to the refuge collection.

The lands comprising the refuge are traced back to several original grants from Charles II patented through Lord Baltimore and his agents to the various settlers. The different manors or parcels of land known as "Robin Hood's Forest", "Duvalls Delight", "Moores Industry", "Contention", "Talbotts Adventure", Batsons Vineyard", "Friendship" and others came eventually to be controlled by the families of two early arrivals, Richard Snowden and Mareen Duvall.

The Snowden family of Maryland was founded by Major Richard Snowden of Wales who held a commission under Cromwell and immigrated to the colony in 1658. In 1679 he purchased a tract of iron ore land on South River and in 1686 was granted "Robin Hood's Forest", a tract of 1,976 acres, later to be incorporated in Snowden's "New Birmingham Manor." Ten thousand acres were owned by 1719, including Snowden Hill, the site of the refuge headquarters.

Richard, the second, discovered a rich iron ore deposit on the manor, and since the production of raw material was encouraged in the colonies by Great Britain, he built on the Patuxent near Laurel in Prince George's County the first iron works in Maryland. The Snowden forges were well known here and abroad and were a source of considerable wealth. Richard Snowden built Birmingham Manor in 1690, and it was the home of a family who held or were heirs to a vast estate extending for more than a distance of 50 miles from South River to and beyond Sandy Springs, including land mow lying in Anne Arundel, Montgomery, Howard and Prince George's Counties.

Birmingham Manor was one of seven mansions, including Snowden Hall, built at various times for members of the Snowden family. The main part of the house, under which was a cellar stocked with the customary fine drinks of the day, was two stories with an attic. The lower portion of the building was built of keystone brick and the second floor and upper portion were of frame. The brick and the oak for the hand-carved woodwork were imported form England and transported up the Patuxent by barge. The river at that time was navigable for a considerable distance and was important and necessary as a source of supply, for travel, and for the shipment of iron, tobacco and other products. It was a common practice in the timbering operations of a later date, carried on in the bottom land, to dispose of the tree tops and trimmings by throwing them in the stream. Although the river has long since become silt filled, and has split into numerous channels as a result to these practices, evidence of wheel-worn pack trails on the banks still remain.

The manor was located on the old Post Road in the Robin Hood's Forest section of Anne Arundel County facing Snowden Hill, overlooking the Patuxent valley, and after standing for 200 years was completely destroyed by fire in 1892. During the fire the portion of the wall above the mantel over the fireplace , usually covered by a painting, cracked open from the heat revealing momentarily a secret compartment for papers and parchments long since hidden by Richard Snowden. Material of great historic value was lost.

The old Post Road and Black Bridge across the Patuxent, a successor of an earlier crossing, were used constantly by us in the construction of fences and roads on the Anne Arundel part of the refuge. The earlier bridge was of wood, with high sides, and covered with a heavy protecting coat of tar, hence the name "Black Bridge", a designation that will endure so long as the crossing is maintained.

Other Snowden family homes were built in Prince George's County at early dates but no formal division of the land had been made by 1790, and the individual property holdings have not been traced previous to that date.

Montpelier, presently the home of Breckenridge Long, built approximately in 1750 by Thomas Snowden, is several miles from the Refuge and is a show place of Maryland. Snow Hill, Oaklands, Avondale, Fairlands, and Walnut Grange are other mansions in the vicinity that have been preserved and are of local interest.

Snowden Hall was the home of the late John Snowden, a prominent and prosperous farmer in the county until his death about 30 years ago, a grandson of Resin Hammond Snowden, and the last direct descendent to occupy the mansion.

The original mansion built in the early part of seventeen hundred, on the hilltop now occupied by the refuge headquarters, as the home of one of the Snowden family was destroyed by fire about one hundred and fifty years ago. The house was rebuilt as "Rose Cottage," a one story structure with dormer windows, around 1812 or 1816, from handmade brick some of which are said to have come from England. The story has been told that the lady of the mansion was most embarrassed during a trip to England to learn that only tenants lived in cottages and that on her return she "raised the roof" to make Snowden Hall the colonial dwelling that it is. Although the building was remodeled with handmade brick from another structure on the place, the former roof line can be easily discerned.

The Hall had two stories and a full basement with windows about three feet above ground. An extension of frame construction on the south end of the house served as a porch and summer kitchen. Although the house has the typical double arched fireplace chimneys on each end, its characteristic colonial appearance is modified by a low pitched, rather flat roof.

One colonial innovation that stimulated curiosity and disconcerting questions from visitors, until its removal, was a large, metal, inverted, funnel-shaped arrangement and down spout placed under a bedroom window on the back of the house. It had been installed as a substitute of more modern plumbing for the convenience of the colored chambermaids of that day.

The exterior and interior walls are more than a foot thick and are constructed of soft red brick and lime mortar. The mansion had a large center hall and open stairs with four large bedrooms upstairs. Each of the rooms, with the exception of the small one at the head of the stairs, was heated by an individual fireplace. The main dining room was served by a dumb-waiter from the kitchen in the cellar where the cooking was done over a large open-hearth fireplace. The basement with its hard-packed sand-clay floor contained the wine cellar or other storage and provided living quarters for some of the house servants.

Snowden Hall, surrounded by large trees, faced northeast toward Birmingham Manor and stood overlooking the Patuxent and the crop fields that had taken several generations to clear and enrich. The terraced formal gardens were located on a slope at the rear entrance of the mansion.

The family were large slave holders and Snowden Hall on a Sunday morning was the gathering place of more than a hundred slaves to hear the mistress read from the family Bible. Joe Snowden, a colored man of ancient age, who had been born and raised as a slave at Snowden Hall, was still living in the tenant house as a caretaker for the property when it was acquired by the Government.

## Goodwood

The Kluckhuhn tract, a part of the original grant known as "Moores Industry," was patented October 21, 1718, to Charles Duvall and was the home of his descendants until 1906. The family was founded by Mareen Duvall, a fleeing immigrant from Nantes about 1650. He came as one of 150 adventurers brought over by Colonel William Burgess and settled on the south side of South River to become one of the most successful merchants and planters of that region. The land records of Anne Arundel and Prince George's Counties show that this Huguenot planter held a vast estate. Telegraph Road, so called because it was the location of the first telegraph communication system, is roughly the division line between the domains of the Snowden and Duvall families.

Charles Duvall built as his first home in the early part of seventeen hundred a small brick structure which was later included in a frame structure to form a "T" shaped extension to the main house. In colonial days, Goodwood, built about 1760, and renamed Gladswood in 1860 by Dr. Charles Duvall, was undoubtedly one of the most beautiful estates of its time.

The mansion, a large two-story structure of frame construction with its rambling extension, was surrounded by numerous ancient and massive English boxwood plants, most of which had been sold before the Government acquired the property. The stairs and other interior woodwork were a hardwood of the appearance of cherry, and the drawing room was finished with elaborate hand-carved panelling of the same material. The lawns to the front and rear were covered with large hollies and other fine specimen trees. The terraced formal gardens, extending from the lawn in the rear of the house to the spring at the foot of the slope, were renowned for their great variety of beautiful flowers and shrubs.

A great number of slaves were required to work the broad expanse of level land lying along the Patuxent. A landing on the river below Duvall Bridge, the crossing for Telegraph Road, was used by the family to export the abundant crops of tobacco and other products.

The property was sold and passed into other hands about 1906, following the death of the owner, Dr. William W. Duvall. The mansion was eventually occupied by tenant farmers and deteriorated rapidly from abuse. The dwelling, slave quarters, and other outlying buildings were later condemned and razed by the Government. Bricks salvaged from the original structure were used for reconstruction work on Snowden Hall and the large boxwood plants were moved and utilized in landscaping.

## Development Projects and Costs

The Patuxent Research Refuge was founded during the depression but the program of development and construction under emergency grants was advanced years beyond the normal expectancy. A corresponding effect in the acceleration of the research accomplishments also resulted. This was made possible by the good will of many interested individuals and the whole-hearted cooperation of the numerous contributing Federal agencies.

The financial assistance given by the Works Progress Administration, Public Works Administration, Civilian Conservation Corps, National Youth Administration and the Selective Service System was essential in providing labor, material and equipment for the physical development. The training programs and the useful work accomplished under these projects were of great benefit to the community welfare during the critical years.

The expenditures for the fiscal years from 1936 to 1949 for construction and development have been supplemented by regular appropriations authorized for this work. Regular funds have been expended primarily in providing for operations and maintenance or other necessary facilities required in connection with research projects. Records for the National Youth Administration project were maintained by the state organization and were not available. They were not considered as essential since the project operated on the Refuge principally as a training program.

## Construction and Development of the Refuge

### Fiscal Year 1937
### July 1, 1936 - June 30, 1937

Titles for several tracts of the area were vested in the Government by the early spring of 1936 and the Bureau, with the consent of the Resettlement Administration, took over the administration of these holdings on May 15. Many of the preliminary plans were completed by this time and estimates for boundary fence construction had been approved by Resettlement Administration officials.

A purchase order in the amount of $12,214.86 was prepared June 15, 1936, and the several car loads of fencing material arrived a month later. A 7-foot woven wire, 1-inch diamond mesh of lawn type design had been selected for the boundary fence because it was of good appearance and the smallness of the mesh with no toe hold made it almost impossible to climb. One lesson was learned from the purchase of this material that prevented the duplication of a similar mistake in future operations. The fencing had been ordered in 20 rod rolls and considerable difficulty was encountered in the more remote parts of the area in handling the long lengths and rolls weighing more than a thousand pounds. A galvanized T type steel post, 10 feet long, was selected and used for line posts, except for an occasional white-oak post set in concrete to provide a more rigid construction. A 12-foot park and paddock type gate, hung on steel posts, was placed at all road and drive entrances to the refuge.

The fence line was staked out early in June by Bureau engineers and the clearing and brushing of a 10-foot strip along this line was started immediately. Twelve miles of line clearing and the cutting of approximately 1,000 oaks for

braces, corner and line posts was carried on by a large crew of enrollees from Beltsville CCC Camp A-4. The camp superintendent, Mr. J. L. Stearns, a forester with a knowledge of and a keen interest in wildlife, rushed this work to completion by October. A large portion of the boundary line was heavily wooded and the operation was an extensive one. Trees along the right-of-way were cut level with the ground with the exception of the line trees or those on proposed boundary line roads where stump removal was required. Dead and tying trees, or those that might later create a hazard for the completed fence, were removed along the entire line, both on Government and private property. The timber was removed for lumber or fire wood purposes and the brush was piled to improve wildlife habitat.

Construction of the fence was started soon after arrival of the material. It was considered as a sub-project of the Greenbelt WPA construction program and Superintendent "Pat" Parkins selected a project engineer, Mr. John Calley, to direct the supervise the work. A minimum of 80 colored WPA laborers, locally recruited, were regularly employed on the project. Fencing along the main roads and highway was a comparatively simple operation, but progress on the interior boundaries was accomplished under most trying conditions. Trucks were used in transporting men and material wherever possible by since a tractor was not available for the work, considerable quantities of heavy materials were transported by hand for some distances. These difficulties were aggravated in the marsh or swamp areas.

One problem was created by some of the wildlife on the area and although extremely amusing, it affected the working efficiency of the Negro laborers. A pair of bobcats had been frequently seen by local inhabitants and were known to inhabit the vicinity of the refuge. One day during the period of construction one of the animals, disturbed in a pile of brush along the line, was forced by fate to circumstance to select right-of-way through the center of a group of Negro workers. Fortunately no bones were broken in the riot but needless to say little work was accomplished the rest of the day. From that time on until the job was completed the flushing of a rabbit or the sudden snap of a tree branch was sufficient to start a new panic.

The work was completed in the latter part of November 1936, but additional construction and repair were required in the lowlands following winter and spring floods. In purchasing material for the overflow areas near the Patuxent, it had not been anticipated that small mesh fencing would collect leaves and make an almost impervious dam. Several thousand feet of fence on the north boundary of the refuge was flattened as a result of this oversight.

Since most of the damage resulted from free floating trees and other heavy debris rather than the pressure of water, a control method was attempted. A guard fence of extra heavy mesh was installed and anchored to standing trees just above the line and the boundary fence was strengthened with additional solid line posts heavily guyed. This afforded only temporary relief from the problem. The guard fence had been placed on private property and had to be later removed when the owner raised strenuous objections to the resultant piling of trash and debris on his property. The main fence survived until the next heavy flood threw the full weight of the accumulated material against it. The wire and posts were removed and used in other locations. A decision was reached that no further efforts would be made to reconstruct this line until such time as a suitable control dike to eliminate the maintenance problem could be constructed. This short distance remains the only unfenced portion of the boundary lines of the principal units.

No efforts were spared by the Resettlement Administration project supervisors to make the construction as perfect as possible and to provide the Bureau with exactly what was wanted or required. Barbed wire was placed at the bottom of the fence and the structure was made to conform to gullies and rough terrain to make the best appearance and to eliminate or discourage the encroachment of the area by dogs or trespassers.

The management and administration of the refuge during the fiscal year 1937 was complicated by a few private holdings within the area and by previous owners and tenants, even though they had consented to vacate, that could not be dispossessed without creating undue personal hardships. The majority attempted to cooperate, due in part to the fact that almost without exception they had been encouraged by the Resettlement Administration land appraisers to believe that they might be retained and employed on the refuge. A one-armed tenant living on the Kluckhuhn tract was particularly tenacious and was inclined to take advantage of his physical handicap and the moderate attitude of the Bureau. It was not until almost a yea later when CCC boys and removed a large portion of the roof,

following condemnation of the residence by a Board of Survey, that the family became discouraged and vacated the property.

The refuge personnel consisted of the superintendent, a laborer, Richard A. Peed, and a one-armed farm owner, Frank Hance, who was employed half-time until the following year. It became increasingly evident in this particular case that the physical handicap was only a minor one and Mr. Hance was given a full-time appointment and served with the Bureau until his retirement in 1942. This small staff was kept exceedingly busy on duties that had little opportunity of becoming routine during the early part of the development program.

Many of the abandoned crop fields were reverting rapidly and limited agricultural operations were undertaken in the spring of 1937 to combat the reproduction and to meet our feeding requirements. Surplus saddle horses acquired from the War Department were used intensively during this period in covering the refuge. Although a farm tractor had been purchased, a team of draft animals were required for farm use. Sufficient crops were raised to meet these needs and the surplus grain was used for feeding waterfowl on the Potomac during severe weather.

A number of quail that had been maintained at the University of Maryland for experimental work by the Section of Disease Control were moved to the refuge in the spring of 1936. Several hundred birds were propagated and raised in the back yard of the superintendent's home during the following two summers. The first experimental work to be conducted on the area was done by Miss Phoebe Knappen. A series of quail were used on a test to determine the acceptability and toxicity of various seeds and berries reported as important quail foods.

Kennel and nest boxes for fur animals were constructed and pens were assembled with the assistance of CCC boys. Thirty foxes, a number of ferrets and mink were acquired and maintained as test animals for disease experimentation.

Intensive studies of the flora of the refuge carried on at this time by Mr. Neil Hotchkiss were the basis for the publication of Wildlife Leaflet BS-154 on this subject. A series of twenty-four experimental ponds were planned for the study of aquatic and marsh flora. They were informally named as the "Frog Ponds" by "Gabe" and were constructed in a small level field below Snowden Hall during the winter and spring of 1937. The ponds, excavated by CCC enrollees, varied in depths and treatments.

A well dug as a supply for the unit proved to be unsatisfactory and water was later piped from the headquarters system.

The Bureau is greatly indebted to the then present Director of the Beltsville Research Center, Mr. Harry A. Nelson, for his interest and cooperation in providing all possible available assistance. Results for projects of work, if approved by him, were forwarded to Superintendents William B. Catchings, Camp A-2 (Roads), Harry E. Hughs, Camp A-3 (General), or J. L. Stearns, Camp A-4 (Forestry). The CCC Camps were will organized under efficient leadership, and the excellent quality and quantity of the work performed on the refuge was a direct result of the high morale.

In addition to projects previously mentioned, the camps cleared, repaired and bridged 12 miles of horse and service trails for patrol work. Approximately 20,000 fruit and seed or nut-bearing trees were planted in a nursery on the Kluckhuhn tract, in hedge rows, or in the wooded areas. Entrance drives at the Log House were built and two acres surrounding the residence were landscaped, seeded and sodded. The abandoned country road, which was the only available entrance to Snowden Hall, was bridged, repaired and put in passable condition. Four miles of other service roads were graded and graveled. Forty-five undesirable buildings and structures condemned by the Board of Survey were razed. Usable materials were salvaged and a general clean up of the sites completed.

Several attempts were made, the first in the fiscal year 1937, and the second in 1938, to stock the refuge with wild turkeys but both plantings failed. Mr. E. Lee LeCompte, Maryland State Game Warden, supplied one gobbler and eleven hens for the first trial. The birds were game farm propagated and were so tame that they became a nuisance. They frequently joined poultry or turkey flocks in the neighborhood and on one occasion narrowly missed the stew pot when they usurped a local farmer's garage and roosted in and on a new automobile he had recently purchased. The birds were collected and moved to the lower unit of the refuge in the hope that the problems would be lessened. The turkeys developed the habit of leaving the area to feed at some adjoining farm and on their return they would parade up and down the Laurel-Bowie Road until an employee would unlock and open a gate for them. In several instances birds enticed from local flocks were driven into the refuge and had to be returned following complaints of exasperated owners. Their numbers eventually dwindled as they fell prey to predators and local poachers. A second group of twelve supposedly wild turkeys were obtained the following year from Missouri and released near Snowden Hall. They walked sedately up the old county road, out of the refuge, and into the woods. The remains of one bird killed by a fox along the road were found the following day but the balance were never seen or reported from that time on.

Plans had been drawn for a laboratory building and construction of other buildings had been proposed. Although we were in the midst of a depression and no one knew when or from where the money for the principal construction would come, everyone was optimistic and had confidence in the future of the Patuxent. A five-acre sod field was prepared and planted by the CCC in anticipation of our future needs for landscaping. There was no realization at that time that our requirements had been grossly underestimated, or that the sod would be used before the grass was firmly established. Fourteen refrigerators, two washing machines, and several stoves, declared surplus by the Federal Housing Administration, were brought in by truck from various locations in Pennsylvania and New York by the Superintendent and a laborer and placed in storage on the refuge for possible future use. The majority of the equipment is still in service operating efficiently.

**Fiscal Year 1938**
**July 1, 1937 - June 30, 1938**

The selection of the Snowden Hall area necessitated the construction of a new entrance road to facilitate the construction work and provide for future requirements. The Bureau of Public Roads was responsible for all roads on the center and plans and specifications for our proposed construction were prepared by this agency. Clearing of the right-of-way was started in the early spring of 1937 by Camp A-4.

Additional technical assistance was needed to speed the construction work and Marion C. Hutchins, a civil engineer from the Savannah River Refuge, was transferred to the Patuxent. In addition to providing funds for material and skilled labor from Bureau appropriations, the Service purchased four new dump trucks and moved in a small dragline from another project to supplement the contributions of the Beltsville camps. Construction was started in June by Camp A-2 and the road was graveled and opened to traffic the following February.

Grading and seeding of the shoulders and back slopes and construction of driveways and courts were completed the next year prior to Dedication Day.

An extensive marsh area along Cash Creek appeared to be suitable for a water impoundment and Dr. Gabrielson had selected a tentative location for a dam to be constructed whenever necessary funds became available. The plans and engineering details for the structure were worked out by Warren H. Hall, then with the Bureau of Agricultural Engineering.

Funds for the purchase of construction material for the dam were allotted in the fiscal year 1937 from Bureau CCC appropriations. Clearing on the lake site which was heavily wooded was carried on by Camp A-3 during the winter of 1936 and summer of 1937. It was hoped that the highly acid condition of the impoundment could be moderated by pulling the stumps and removing the alder clusters from the area to be flooded. Stump pulling and clean up involved in the clearing of the 60-acre site was a tedious and seemingly endless operation.

Preliminary construction on the dam was started in June 1937. Since the Bureau's dragline was required for construction work on the entrance road, arrangements were made with Superintendent Parkins of the Greenbelt project for the transfer of a power shovel with clamshell attachments. The location selected for the dam site was overlaid with soft mud approximately 10-feet deep. The specifications, in addition to sheet piling driven in the core, called for the removal of the muck to provide a solid footing for the base of the fill which was over a hundred feet in width.

A clamshell operator employed by a large sand and gravel company was hired for this operation. The new employee had an abundance of courage and confidence but little ability or experience. It later developed that the owner of the company had recommended the individual to the Bureau because he was a brother-in-law.

It was necessary to work the machine on heavy mats and logs which were placed under the tracks as it moved across the swamp. Everything went well until the machine was about two hundred feet from shore when in moving the equipment the operator became excited and proceeded to pull completely off the mats. A feeling of hopelessness and despondency is more or less a natural reaction for a supervisor to have when twenty-five tons of expensive equipment is buried in six feet of muck. The incident occurred at a most unfortunate time when not a single CCC enrollee was available for work. The Beltsville Camps, originally white, had been transferred to other locations and our work programs were delayed for several months awaiting the arrival of colored replacements.

The problem of extricating the machine fell to the small group then employed on the refuge. Efforts to winch the machine back on to mats and dry ground were eventually successful after more than a week of working neck deep in mud and water. The operator had explained that the accident was unavoidable because the equipment had stuck in gear and could not be released. When the machine had been completely and thoroughly cleaned and serviced it was again worked into position. The operation was resumed and in less than two hours, and to everyone's despair, the machine was again off the mats and in the mud deeper than before. The operator reached an immediate conclusion that working with sand and gravel was more desirable and much cleaner and lost no time in acting upon that decision.

The techniques were routine by this time and in repeating the procedure the clamshell was returned to shore. The employment, at a higher rate, of a more experienced operator was approved by the Central Office and the operation was completed without further complications.

The power shovel was recalled by the Resettlement Administration for shipment to their project in Cincinnati and further construction on the dam was delayed during the summer. The equipment was returned in the early fall and a permanent transfer of it to the Bureau was made. The excavation of the spillway and the construction of the sluiceway were completed during the winter by the camps.

The fill on the dam, although started in 1937, and delayed by the transfer of the camps and the lack of equipment, was completed in the spring of 1938 with the assistance of the refuge WPA project.

The gates were closed on July 1, 1938 and the lake filled several months later, but the water was drained on three different occasions during the following winter and spring in an effort to lessen the acid condition.

It was not until 1940 that Cash Lake was stocked with fish. Plantings of large mouth bass, blue gills, and crappie were made in July and December of that year. The grading, seeding, sodding, and the rock riprap on the face of the dam, the spillway, and sluiceway were finished early in the fiscal year 1939 as WPA projects.

Saw logs salvaged from the clearing operations on Cash Lake were hauled to the CCC sawmill at Beltsville to be used for miscellaneous work by the Research Center. The problem of hauling became acute and the mill was moved to the clearing site. It was anticipated that our future needs for lumber on the refuge would be great and it was soon realized that an excellent opportunity was being missed to provide for some of these requirements. A private sawmill was rented by the Bureau for a dollar a month, manned with CCC personnel and tractor, and located near Cash lake to cut in competition with the camp operated mill. The location of the camp mill on the refuge was mildly discouraged and after cutting approximately sixty thousand board feet it was removed and returned to Beltsville.

The refuge mill operated at Cash Lake during the summer and fall and was relocated in the winter near the log house to cut timber salvaged from the lowlands of the Patuxent. The CCC had made a general cleanup of this wooded area to remove windfalls, dead or dying trees and had snaked them into the mill.

Approximately a million board feet of lumber was cut during the next several year's operations. Structural lumber for every building constructed on the refuge, with the exception of the Merriam Laboratory, was cut on the area.

Although a WPA project had been approved and was operating on the refuge, the CCC continued to perform much useful miscellaneous work important to the development of the area. The two groups worked in close harmony, cooperating frequently on the same work projects and this coordination was responsible for many additional accomplishments. Clearing, general cleanup, wildlife habitat improvement and landscaping were projects best handled by the CCC. The camps graded and graveled two miles of new roads and cleared and grubbed an additional five miles of right-of-way for service roads.

The equipment building and barn on the Hance tract or farm unit were constructed as CCC projects with the supplemental help of skilled mechanics from WPA.

The residence on the Knowles tract, Quarters No. 10, was a sound structure of concrete block started by the previous owner, but left in an unfinished condition after the building was enclosed. A carpenter foreman, William Lloyd, was employed and the completion of this construction was undertaken as a CCC project.

The refuge headquarters and offices had previously been maintained in the Superintendent's residence at the log house but with an expanded program the arrangement could no longer be endured and the renovation was rushed to completion with WPA assistance to provide office space.

The building served as headquarters from the late winter of 1938 until the completion of the Nelson Laboratory in October of that year.

The Bureau WPA program under the administration of John Bell and Harold Regan was extended as a result of their efforts to include the Patuxent. Approximately a 200-man project was approved and started operation on December 7, 1937. The sudden approval of the project, with little or no advance notice, found the Bureau totally unprepared to cope with the problems immediately arising in connection with this project. The labor was recruited in the District of Columbia and it became the responsibility of the sponsoring agency to arrange for or provide transportation. The refuge did not possess any equipment suitable for this purpose and time or appropriations did not permit the purchase of or the extended rental of trucks. An urgent appeal to Superintendent Parkins of

Greenbelt resulted in the loan of several trucks with tarpaulins that were sufficient to meet the immediate requirements. Ten trucks, a bulldozer, tools, and large quantities of construction materials later transferred from Greenbelt contributed greatly to the successful operation of our project.

The project opened with the assignment of about 30 laborers, was increased to 125 in several weeks and reached the full quota early in January. The superintendent had contracted the mumps on the day prior to the opening day of the project and active supervision on his part was limited. The first group was assigned to the husking of a twenty-two acre field of corn and, although it required approximately 90 man days to harvest the field, it was regretted at the time that the refuge did not have more and bigger cornfields.

There was an abundance of work to be done and with the employment of capable supervisory personnel and better organization the project was soon functioning smoothly. Mr. Pearle Sisler, the first employee, was soon joined by John Anderson, I.J. (Whitie) Griezecki, John Trower, Charles Cummings, Whitney Keys, Randall Lusk and many others who contributed so much to make the project and the refuge a success.

The first major project, the renovation and reconstruction of Snowden Hall, was started in January 1938. This work required the graveling and repair of the old county road which was done at considerable expense by WPA hand labor. The road was at that time the only existing access to the Hall and the headquarters area and later, although replaced by the main entrance drive, it continued until recently to serve the refuge for the movement of heavy equipment and many other purposes.

Snowden Hall was originally built on a clay foundation and many of the lower course of bricks which were powder dry had crumbled away. The problem of first concern in repairing the building was to adequately underpin it with concrete. The walls had buckled out to some extent and it was immediately essential to tie them together securely with heavy steel rods as a precaution against collapse. The work, which necessarily had to proceed slowly, was accomplished with only one minor event. The base of the chimney and the fireplace of the basement kitchen collapsed but no one was injured and no damage was done in that it had been scheduled for rebuilding to provide for the furnace.

The Hall which was completed in the early part of the fiscal year 1939 stood vacant, except for temporary uses, until taken over for operation by the Department of Agriculture Welfare Association in July 1940.

The construction of the Nelson Laboratory, designed by Amos B. Emery and P.S. Munk Pedersen, was begun in February 1938. WPA funds allotted for non-labor items were limited and were required principally for transportation costs.

It was necessary, in most instances, to provide for projects with high material costs from other sources or funds. The building, completed in October 1938 at a total approximate cost of $35,000, was built by WPA labor with an allotment of $17,000 from regular appropriations.

The WPA restrictions and regulations accomplished the purpose of the program, although it made the operation of a construction project difficult. The limitation of non-labor funds encouraged the use of more relief workers in lieu of labor saving equipment or more economical and efficient methods of operation. The excavation of sand and gravel of suitable material from a pit on the refuge was carried on to reduce the cost of concrete work. Two machines were purchased and the refuge engaged in the extensive manufacturing of concrete blocks. These blocks were used for side wall construction, back-up for brick facing and many other purposes. In addition to the lumber out on the area, such miscellaneous operations enabled us to accomplish more construction work than would otherwise have been possible.

WPA regulations provided for the employment of a standard 5 percent supervisory staff with an extension to 10 percent by administrative approval. The transportation of a large group of men between the refuge and Washington plus the efficient supervision of the numerous work projects required a greater number of capable and reliable men than were available under a 5 percent allowance. The WPA administrative office, in acting upon the Bureau's request for an extension, through error granted a hundred rather than the usual ten percent exemption. The authority resulting from this mistake, although never excessively abused, was of direct benefit to the project and the local people of the surrounding community.

The WPA classification of men to the skilled trade rolls was an arbitrary procedure and the journeymen, or better mechanics, were regularly assigned to District projects. The refuge got carpenters that had purchased their tools at the ten-cent store and plumbers that did not know one pipe fitting from another. There remained only one possible solution to this problem to accomplish the building

construction. The better workers were retained or reclassified and competent local unemployed mechanics were hired and carried on the exempted supervisory roll.

The quality and quantity of the work performed by the refuge WPA project on the whole was excellent. The men were interested in the project and the laborers, with few exceptions, took pride in their work and the praise that they earned. Several labor unions attempted at various times to move in and dictate policies but after several rebuffs the refuge organization was left alone to function without trouble or disputes. Laborers were assigned by the District office and could be terminated by the project for any reason that rendered their services unsatisfactory. There was naturally an extremely large turnover but there were many men that were retained throughout the entire duration of the program.

One of the problems associated with the operation of a WPA project could not be eliminated or corrected and the procedure in dealing with it became routine. The workers were scheduled to equalize the daily average of men for the benefit of the work and the transportation problem. Ordinarily five trucks were used but for approximately three days following each pay period the system broke down and we took whatever could be hauled in two trucks. When the men arrived at the refuge they were carefully sorted, the sober ones being retained for work and the intoxicated ones being loaded back on to a truck for immediate reshipment to Washington. An attempt had been made to do the sorting in Washington but after several near riots it was discontinued upon the request of the police. The production schedule on the refuge was consequently geared to provide for post pay day celebrations.

The conditions on the refuge necessarily limited the amount of research that could be done on the area. Miss Knappen and Mr. Mays of the Section of Food Habits studied the effects of orchard spray on bird life and Mr. Hotchkiss furthered his work in connection with the surveys started the previous year. The experimental facilities for the Section of Disease Control were expanded to provide for the disease research being conducted by this section.

## Fiscal Year 1939
## July 1, 1938 - June 30, 1939

Many of the projects started the previous fiscal year were completed in the early summer of 1938, and numerous additional new ones were undertaken. The CCC continued the work program on the area, and one PWA and two separate WPA projects were being administered during this period. It was the year of most activity and greatest development on the refuge, our efforts being climaxed on the day of dedication when physically the refuge began to assume a finished appearance.

Clearing on a right-of-way for six miles of power line was completed by the CCC Camps. Material was purchased under this project and the line was constructed by enrollees with the assistance and supervision of an electrician furnished from the WPA roll. All buildings were serviced by this line and the electric current was furnished by PEPCO through the Beltsville Research Center at a much lower rate than it could have been obtained locally.

The stone work on the culverts of the main entrance road was completed and the shoulders and back slopes of the road were graded, sodded and seeded by the Camps.

Red bud, holly, dogwood and laurel were planted on the slopes to make the entrance drive more attractive. The camp stonemason built a stone entrance way and the WPA mill shop installed white picket gates and framework.

A combination PWA-WPA construction project for the refuge was approved in July 1938. The Bureau had made tentative plans to build a superintendent's residence, an assistant superintendent's residence, a four-family apartment house, two garages, one of which contained a shop, a caretaker's residence, a barn and a greenhouse. A request had been submitted on this basis but following the approval of the project a decision was made to construct a laboratory for the Unit of Disease Investigations. Funds allocated for the barn were to be used since a suitable structure had already been completed by the CCC and an additional similar building was not needed. The architect, Munk Pedersen, was very much afraid that the Bureau would be criticized for this procedure and consequently designed the laboratory with a characteristic barn-like appearance.

The building was plain and unattractive with small windows and an A type cupola. The cupola was removed the following year and converted into a dog house by the superintendent when the disease laboratory was extended and enlarged.

Construction on the caretaker's cottage, Quarters Number 9, was started in July immediately following the approval of the project. The old residence occupied by the Hance family was torn down while they were on an extended vacation in California and the cottage, a Bureau modified type F residence, was built on the same location.

The construction was completed late that fall and the home was occupied by the Hances following their return. Construction on the headquarters buildings started in August although only preliminary sketches had been prepared. The existing positions of the buildings were proposed by Mr. Darwin Swanson of the Resettlement Administration and approved by Dr. Gabrielson who was much interested in every detail. Excavation of the basements started soon after location and grade stakes had been set by Mr. Hutchins.

The unavoidable delays so characteristic of Government operations were held to a minimum for our project but they were, nevertheless, a problem. It was intended by the Department that a construction engineer be appointed, and that an organization be set up to correlate and coordinate all construction with the program of the units at the Beltsville Research Center participating in this program. The Bureau was ready to go and was impatient of any delay that could be escaped. Mr. Harry Nelson of the Secretary's Office, and former Director of the Center, was in complete accord with the desire for an early start and gave his approval. The refuge organization had been set up and was functioning before provisions for payment of the personnel had been made by the Center.

Mr. John Anderson, our construction superintendent, was striving to have all buildings enclosed by winter and he drove his men to the limit of their endurance to accomplish this aim. This was made possible by taking advantage of all opportunities that arose. The refuge project being the first to start was in a position to select the best qualified of the local workmen available for employment. A considerable quantity of structural lumber had previously been stacked on the site to allow for proper seasoning. Sand and gravel for concrete work from refuge pits were stock piled at the location ready for use. The operation of concrete block

making was started immediately to meet total requirements and to allow ample time for curing. Wood working machinery was rented at a nominal fee and a shop was equipped and operated under the direction of carpenter-foreman George Green. The mill was able to meet all construction requirements without delays and furnished frames, sash, doors, cabinet work and trim for every building under construction.

Two Bureau architects, Michael Sassani and Raymond Farrelly, were transferred to the Patuxent for general assistance and completion of the working drawings. In numerous instances, pressed for time, construction details were drawn or indicated on scratch paper and finished drawings and blueprints were made after the work was completed.

Numerous other phases of the work that had to be coordinated with the building construction, and completed before winter or the final grading in the spring, were pressing problems. A twenty-thousand gallon reservoir for the storage of spring water to meet the additional requirements was constructed as a part of the unit previously built to supply the Nelson Laboratory and Snowden Hall. Water mains and lines were laid, electrical service was extended, septic tanks and disposal fields were built. Service courts and driveways were staked out and put in passable condition to provide for the necessary traffic.

Grading was started in the fall but with the onset of winter the hilltop became a sea of mud and the work had to be postponed until spring. The present pleasing contours of the headquarters lawns are not a recognizable part of the original landscape. The footings of the Superintendent's residence, for example, were laid almost on top of the ground while only the roof line of the two garages was exposed.

A small mountain in the vicinity of the flagpole had to be disposed of and a power shovel with a small fleet of trucks worked constantly to move a huge quantity of cut and fill.

The refuge offices were moved into the Nelson Laboratory in October of 1938 and during the following spring several research units were provided with space and facilities. Dr. Don Coburn, Dr. William Armstrong, and Mrs. P.W. Wetmore set up a laboratory for the study of wildlife diseases, and a quail nutrition study was started by Ralph Nestler and W.W. Bailey. A fenced unit of four acres was built on the hilltop overlooking the headquarters area to serve as a quail propagation and experimental unit. The first enclosure built for the test animals of the Disease Control Section was relocated the following year to provide for the construction of the Merriam Laboratory.

The winter provided the opportunity to accomplish the miscellaneous work that had been postponed during the busier seasons. Three miles of service roads were graveled and approximately four miles of clearing along the fence line for a service road was completed by the Camp.

The water in Cash Lake was raised a foot above the normal level originally decided upon. This had a marked effect upon the flow line and consequently required considerable additional clearing. Only a small group of laborers who could be spared from other work were assigned for clearing under the direction of Supervisor Whitney Keyes. Mr. Keyes was impatient with the progress of the work and convinced the District WPA officials of the economy of starting a wood cutting project on the refuge to supply the needs of the D.C. relief wood yard. Approximately one hundred additional men were assigned to Mr. Keyes by the District and clearing on Cash Lake and of the site of Lake Redington was accomplished without cost to the refuge as a result of this salesmanship.

Considerable fence repair was required along the Laurel-Bowie Road to replace sections damaged by reckless or drunken drivers. Heavy tapered concrete gateposts were set at all entrances to replace the original light, inadequate steel posts. Because of their shape "Gabe" amused his visitors by pointing out that "The Washington Monument had pups."

A recreation and picnic ground located on the boundary near the headquarters area was developed to meet the increasing needs and demands of organized groups visiting the refuge. A spring reservoir, tables to seat 200 people, a barbecue pit, and a shelter house with fireplace were built as a WPA project.

Interior work on the buildings had progressed rapidly during the winter and the construction was scheduled for completion in early spring. Dr. Gabrielson had set June 3, 1939, as Dedication Day for the refuge and all efforts were devoted to meeting this goal. The grading and landscaping, the most difficult problems, were delayed time after time by extended periods of heavy rain. All available WPA and CCC equipment and man power were pooled in a combined effort to complete the grading, landscaping, and the construction of sidewalk, service courts, and driveways. An 80 foot, welded tubular steel flagpole had been ordered during the

winter but inquiries brought only promises of an early delivery. It was eventually shipped but as the dedication date drew near, the superintendent grew frantic over one missing flagpole. Invitations had gone out, programs had been printed and the flag raising ceremony had an important place in the schedule of events. On Sunday, May 28, the freight agent of Bowie called the refuge to advise that he had traced and located the pole. It had been shipped through Bowie to the end of a branch line in southern Maryland. Five days remained to bed the pole in a concrete slab, grade the area and lay sod. A long bodied, heavy duty truck borrowed from the Beltsville Research Center, was immediately dispatched, and late that day, to everyone's relief and pride, the Patuxent had a flagpole. The pole was set on the following day and the work went on without delays.

A large crew of WPA workmen started in at daybreak on the morning of Saturday, June 3rd, to lay sod from the flagpole to the porch of Snowden Hall. At 1:00 p.m. the last piece was laid, tools were picked up and the Patuxent was ready for its formal dedication.

The dedication of the refuge was sponsored by Mr. Carl D. Shoemaker, as Secretary of the National Wildlife Federation, and all expenses in connection with it were borne by his organization. The program and details had been planned and worked out by Leo K. Couch, Assistant Chief, Division of Wildlife Research. The refuge had been developed as a unit in the Department of Agriculture and it was proper that the dedication should be made by the Honorable Henry A. Wallace, Secretary of Agriculture, although the Bureau had been transferred to the Department of the Interior a short time previously. Addresses were made by several other guests, following the impressive flag raising ceremony conducted by a group of Boy and Girl Scouts. Many important officials and friends had been invited and approximately 400 guests were present for the dedication. The ceremonies ended with a barbecue served at the refuge picnic grounds.

A portion of the 400 guests attending dedication ceremonies

Left to right:  Dr. W. B. Bell, Walter Frazier, Senator Lynn J. Frozier, Leo K. Couch, Dr. H. H. T. Jackson, Carl D. Shoemaker, Ira N. Gabrielson, Senator Key Pittman, and Hon. Henry A. Wallace.

## Fiscal Year 1940
## July 1, 1939 - June 30, 1940

The transfer of the Biological Survey to the Department of the Interior affected only slightly the relationship between the refuge and the Beltsville Research Center. A cooperative agreement worked out by Albert M. Day, with officials of Agriculture had been approved on June 14, by the respective Departments. Electrical, telephone, and necessary mechanical services furnished through the center were continued. The good will and helpful co-operation of the Chief of Operations, C. E. Kelleher; the Administrative Officer, F. E. Ellis; the General superintendents, Earl C. Sanford and his successor C. A. Logan; and the personnel of their organizations continuing throughout the years has made possible the successful operation of the Patuxent Refuge. The demands on the Beltsville Camps for projects at the center had grown heavier and it was only logical that the sponsoring Department should receive the benefit of the labors of the CCC. The majority of the projects on the refuge had previously been completed with the exception of several miles of service road construction and graveling. The last of the Camp personnel was withdrawn in the fall of 1939 when all obligations had been discharged.

The transfer of the Bureau from Agriculture to Interior created a space problem in Washington that was to be solved by additional construction and the transfer of work to the refuge. The South Building of Agriculture, in which the Bureau was located, had been designed to provide the required facilities for laboratories in nearly every room. The Service was scheduled to move into quarters at the Department of the Interior and space suitable for laboratory work was not available. Under these circumstances only temporary or inadequate quarters could be provided for the largest research group, the Section of Food Habits. The proposed construction of a laboratory building on the Refuge designed to meet the needs of the work and adapted to the expensive modern equipment of the Section was approved by Dr. Gabrielson and Dr. Cottam.

The Bureau's solution of this problem was favored by the Secretary, Mr. Iokes, who was also Public Works Administrator, and a request for a PWA grant of $150,000 was approved in July 1939. Footings for the Merriam Laboratory were laid in August and construction for the addition to the disease laboratory was started several months later. The laboratories were designed and drawings prepared by the Division of Construction, under the supervision of W. H. Terhune and F. S. Munk Pedersen. An engineer of the Division, Edwin P. McDermot, was stationed at the Refuge during the major part of the construction.

Electrical service was extended, sewage disposal systems were installed and a deep well was drilled to meet the additional requirements of the new units. Construction, including grading and landscaping, was completed in the spring of 1940 and following installation of the equipment a large staff of the Section of Food Habits and the remainder of the personnel of Disease Investigations were transferred to the Patuxent.

Two WPA programs, a construction and a non-construction or general project were administered on the refuge during this fiscal year. Construction efforts were devoted primarily to work on the two laboratories and to increasing the service facilities.

The residence, Quarters Number 11, located near Cash Lake on the Harding Tract at time of acquisition, was a sound structure but was in a very much dilapidated condition. Trespassing on this unit was increasing and the need for a laborer-patrolman residing in the area was necessary to prevent or check the violations. The house was repaired and remodeled by WPA with the assistance of an allotment from regular appropriations.

A combination building consisting of a poultry house, stables and garage was also built. The quarters were first occupied by the family of Alvis K. Melton, a maintenance employee of the refuge.

The Bureau was forced to make other arrangements for the storage of a considerable quantity of exhibit material maintained for public relations work. A large tobacco barn on the Kluckhuhn Tract was converted into a warehouse with the provision of regular funds for purchase of materials. The exhibits were moved and stored at the refuge for a year, at which time they were disposed of by a Board of Survey.

Various incidental construction work and repairs of a minor nature to existing buildings was accomplished during the year. The headquarters buildings were weather stripped, an enclosed porch was added to the Assistant Superintendent's residence, and dog kennels with runs were built near the apartment house. The log house, vacated by the Superintendent when the headquarters was completed, underwent extensive repairs. Rats had tunneled under the footings of the unexcavated portion of the house and for several years had run riot in the residence. The construction of a full basement eliminated this condition and provided space for the installation of an adequate heating system.

The Service had started acquisition proceedings on the land in Anne Arundel County in 1939 and the Government took possession of it in the fall. Clearing of the more than three miles of boundary line to provide for the construction of the fence and a parallel service road was completed in the spring by the WPA.

Work on the service road was started in the winter and continued for the balance of the year. An allotment of funds was made under project NIR to cover the purchase of material for the fence and orders were placed before the end of the fiscal year.

## Fiscal Year 1941
## July 1, 1940 - June 30, 1941

The development and purpose of the refuge had been highly publicized and it had a large group of followers who were genuinely interested in its accomplishments and future. A master plan was prepared and put into effect, and with the transfer of the scientific personnel the Patuxent was well on its way toward becoming an important research institution.

All available quarters on the refuge had been filled and a waiting list was established. The extensive increase of personnel on the area created the need for and justified the operation of Snowden Hall as a service unit. A cafeteria began service in July 1940 and lodging was available for over-night guests, single

male employees, or graduate students stationed on the refuge. Furniture to equip the building had been constructed the previous year by the Bureau's CCC Camp at the Mattamuskeet Refuge and the other necessary equipment was furnished by the Department of Agriculture's Welfare Association. This agency operated Snowden Hall by a special use permit under the management of Mrs. Margaret Trombley until the spring of 1942 when conditions arising from the national emergency made its continuance impractical. The Hall, in addition to serving as a headquarters for the In-Service Training schools and other Bureau personnel, was patronized by a great many Center employees and visitors.

Dr. Gabrielson had long recognized the need for and been interested in providing In-Service Training for Bureau personnel. The refuge with its facilities and the close proximity to the Central Office afforded an ideal opportunity for such an undertaking. Mr. Leo Couch was given the responsibility of working up a program and the first school was held from February 24 to April 2, 1941. The first group of approximately 20 men attending were employees of the Branch of Wildlife Refuges and the Branch of Game-fish and Hatcheries. The enterprise proved so successful and was so enthusiastically endorsed by the instructors and students alike that a second was held immediately following from May 12 to June 14, 1941. The second school was attended by a slightly larger group made up principally of game management agents. The third and last session was held the following fiscal year from October 14 to November 21, 1941. The schools had increased in popularity with the various divisions of the Bureau and with field personnel. The requests for assignments to the last school had far exceeded the facilities. In-Service Training had proved its value and would probably have continued as a permanent program if it had not been interrupted by the national emergency. Programs of the first two schools are included to show the extent and scope of the course of instruction.

The refuge WPA project operated with a smaller group on a much reduced appropriation. The project, with the exception of those assigned to the miscellaneous work associated with maintenance and operation, was devoted to the service road and fence construction in Anne Arundel County. The refuge power shovel had been shipped to Bombay Hook the previous year and with considerable quantities of cut, fill, and gravel to be moved the work progressed slowly by means of trucks, a tipple, and bulldozer. A large portion of the boundary was subject to overflow from the river, or was permanently swampy and had to be corduroyed and diked to carry the road and fence.

A large quantity of culvert pipe was required for this work, and since the first allotment of NIR funds had gone for the purchase of fencing and material to construct reinforced concrete line or corner posts, a second request was made. Someone in the Central Office had raised a question concerning the necessity for what appeared to be an excessive amount of pipe and Mr. Roy Dillon, as Administrative Officer, felt obligated to see the conditions first hand before he approved the request. Consequently an inspection trip of the right-of-way was

arranged. Mr. Dillon's shoes became muddier as the going got tougher and when a point was reached where hip-boots or a bathing suit was sensible garb he was fully convinced that the estimates were justified. An allotment from Project NIR was made for the repair of a bulldozer and for the purchase of culvert pipe.

The working force of the WPA project continued to shrink throughout the year as the laborers were reassigned to important defense programs in the District. The refuge project was terminated without prior notice in April 1941 several days following an inspection trip of the District Administrator. There was a critical need for labor in defense work at that time and it later developed that the refuge had only been allowed to continue operations because the District WPA officials were under the impression that the project was made up entirely of physically handicapped relief laborers. An effort had been made to create a favorable impression on the Administrator during his visit but it had not been anticipated that the activity shown that day by the workers would be detrimental to the project to the extent that there was not sufficient time allowed to collect all of the tools from the work site. There was approximately one mile of fencing and service road remaining to be constructed at the termination of the project.

One amusing incident occurred in the spring of 1941, in connection with the WPA, that will be long remembered by the supervisory staff. One truck and crew of laborers assigned to the Anne Arundel project failed to show up at headquarters one evening at quitting time. This was most unusual but it did not cause any great concern until a quarter of an hour had elapsed. Trucks were dispatched and a thorough search of the refuge and roads on the opposite side of the river was made without any trace of the missing truck being found. The balance of the project workers were finally sent to Washington and the supervisors were held to meet any emergency that might have arisen. Night had fallen and after waiting for several hours the foreman of the lost crew finally made his appearance. It developed that even though the Patuxent River had been at flood stage for several days and Duvall Bridge was the only open crossing, the foreman, Maurice Thompson, to save time had attempted to cross on Black Bridge Road. The crew and truck had been stranded midway by the flood waters and a long rope was needed to pull them out. The entire scene was lighted and the truck appeared to be in flames when the relief crew arrived. Men plunged into the water and forced their way out to the vehicle to find the Negroes quite contented and comfortable. With a thousand feet of open water between them and dry wood they had built a fire on the bed of the truck and were methodically burning the truck body as additional fuel was required. The fire was extinguished and the truck was on dry land in a matter of minutes.

The closing of the WPA project found the refuge unprepared to continue operations with the small group of seven regular employees. The original group of three consisting of the superintendent and two laborers had been increased from time to time by the employment of Mrs. Pearle Sisler and Walter Quinstedt as clerks, Marcus Foster as janitor, and a laborer-patrolman Alvis Meton. It was

necessary to supplement this staff with the transfers of WPA employees to regular rolls. Three laborers, Noah Trombley, Howard Kerr and Maynard Thompson, a janitor, Frank Brown, a plumber, Maurice Thompson, a storekeeper and supervisor, John Trower, and "Whitie" Greesecki as an assistant to the Superintendent were employed. The refuge lost the services of a very capable employee in the sudden death of Charles Cummings from cancer in the spring of 1941. The WPA supervisory staff had been gradually diminished by the call of National Defense work and the refuge was soon to lose additional employees to this program.

The research work of the several units located on the refuge was progressing and the possibilities for increasing the scope of the studies seemed unlimited. A nursery of fruit and food-bearing trees and shrubs to be used for hedge-row studies was started in the spring of 1941 for the Division of Federal Aid. The nursery was later enlarged to provide for the propagation of evergreen shrubs used in landscaping work on the area.

The refuge during the year was host to various organizations and groups of visitors or friends. The National A.O.U. devoted one day of their meeting to visit the area and partake of a barbecue. A Service picnic, that will still be remembered by a great many, was held on October 5, 1940. The refuge had open house to better acquaint the Service personnel with the research studies and the area. A buffalo steak dinner sponsored by a group of administrative officers of the Service was served at Snowden Hall on January 25, 1941, for members of Congress of the House of Representatives. The affair was well received and enjoyed by all attending. A similar party and open house equally successful was held for the Senate on May 20, 1941.

## Fiscal Year 1942
## July 1, 1941 - June 30, 1942

This year, although it was in many respects only a breather, provided the opportunity to solidify the previous gains by putting the house in order. The possibility after the loss of WPA of building an efficient permanent organization sufficient and capable of handling maintenance and the unfinished development projects appeared bright for the future.

This illusion was shattered by the Declaration of War on December 7, 1941. The full effects and the implications of the struggle ahead were realized the following year.

A National Youth Administration project was operated on the refuge from July 1941 to May 1942. The program had little effect upon the progress of the refuge work but it did serve in providing useful training and experience for the local youth recruited from Laurel and Bowie. The project was small in numbers and

with considerable fluctuation in the assignments, it never became an important factor. The boys were used for maintenance or farm work and the girls were given duties in the laboratories and offices. The problems encountered in operating a project consisting entirely of teen-agers, however amusing, were often an impediment. The never ending questions and the tendency of the girls to collect in the file room to discuss past or prospective dates drove Mrs. Sisler, their supervisor, to distraction. John Trower in attempting to clear a field adjacent to the headquarters area with a small group of colored boys, if absent for a short time on hot days, would upon his return invariable find that the entire group had departed to the buildings for a shower.

The War Department, in connection with the Preparedness Program, had acquired an extensive acreage in Anne Arundel County for inclusion in Fort George G. Meade. A request by the Army for refuge land on the north side of the river was rejected and further designing on their part for this, or additional property, was counteracted by close cooperation with Ft. Meade officials. A firing range paralleling the service road and boundary fence had been established and work on the Anne Arundel portion of the refuge was carefully coordinated with the training maneuvers.

Traffic through the Fort on North Telegraph Road was cut off by the range and Western Union also, except for a short distance at the extreme southern tip of the refuge, removed and relocated their lines on private property. With the necessity no longer existing for maintaining Telegraph Road through the refuge as a public right-of-way, a petition for closure was filed with the Commissioners of Anne Arundel and Prince George's Counties. The rights and title for a portion of the road and half of the Duvall Bridge were conveyed to the Service on November 4, 1941, by action of the Board of Anne Arundel. The Petition to Prince George's County was at first rejected but later reconsidered and acted upon December 9, 1941. In a meeting with the Board of Commissioners, an informal or gentlemen's agreement was reached for the exchange of gravel from refuge pits for the County's one-half interest in the Duvall Bridge. The County later removed gravel and helped to enlarge a pit that eventually would be used as a pond.

The construction of several roads crossing through the refuge had occasionally been proposed and the Service found it necessary to be constantly on the alert to protect the best interest of the project. A Washington-Baltimore Parkway, which was under consideration as early as 1937, located east of the existing Washington-Baltimore Boulevard bisecting the Beltsville Center and crossing the refuge near the Headquarters, was planned for construction. The Service continued to obstruct this proposal but with the advent of War and a possible necessity for the road as a defense measure a decision on definite location was imperative. The objections of the Bureau prevailed and the Parkway was relocated a short distance above the north boundary of the refuge. The right-of-way has been acquired and although some construction was undertaken and is still underway the work is far from completed. The proposal to build a military road

on the approximate location of Telegraph Road to join Ft. Meade and the Beltsville Airport was discouraged by the Service before the plan had an opportunity to be seriously considered or gain support.

Palm Sunday in March 1942 is still vivid in the memory of Service employees that were living on the Patuxent. The rain of the previous day turned into snow at night fall and by 6 o'clock the following morning the refuge was completely isolated and all services had failed completely. The snow continued and the weather turned bitter cold. Roads were completely blocked and a score or more of trees had fallen across the six miles of right-of-way to hopelessly disrupt the power service and telephone communications. Every effort was made to meet the emergency but without heat, water, or electricity, some families, particularly those with babies or small children, suffered considerable hardship. Twenty-four hours had elapsed before service and normal operating facilities could be restored. A snow plow was purchased and extensive additional clearing along the power lines was done the following summer as measure of protection for the future.

The main entrance road into headquarters, which had been graveled at time of construction, held up well under all weather conditions but it was inclined to washboard and became very rough even with constant machining. The condition of the road did not tend to create a favorable impression of the refuge with visitors and the Service instructors for the In-Service Training school, particularly Mr. Henderson who had a new car, were far from complimentary in their remarks. A request for an allotment to provide an all weather surface treatment was favorably received and endorsed by the Central Office. Preliminary work was done and preparations were made to handle the job by contract but before bids could be opened, an order was issued prohibiting the use of asphalt for any work except defense projects. It appeared that the refuge must wait until the end of the war for its road but a dealer in Baltimore was located who had placed a strict interpretation upon the order and would deliver tar. A decision was reached to do the work immediately with refuge personnel and an appeal to Dr. A. C. Martin and Dr. Don Coburn brought additional help from the research groups. The roads and courts were graded, rolled, primed and surfaced in approximately a week with extra help and 12-hour shifts. The day following completion of the entrance road, the stop order was amended to include tar and all asphalt products.

The refuge was visited in March 1942 by Mr. George Reeves of the National Service Board for Religious Objectors with Dr. W. H. Larrimer, Staff Assistant for Forest Research, and a cooperative campaign for the allocation of a conscientious objectors camp got underway. The camps were operated by the National Service Board under the administration of the Division of Camp Operations of the Selective Service System. The Service Board was given the freedom and responsibility by Selective Service in selecting camp sites providing the projects chosen qualified as work of national importance. The refuge was visited frequently by numerous officials of the National Service Board and affiliated religious groups.

They were impressed with work programs of the refuge and the Forest Service Station, pleased with the tolerant attitude of the Patuxent personnel, and the possibility of using Snowden hall as Camp Headquarters was most appealing.

Arrangements were made with Mr. C. A. Logan of the Beltsville Research Center for use of the District Building as quarters for the Camp. The National Service Board upon advice of this threatened to break off negotiations and Dr. Gabrielson as a salvage measure approved the use of Snowden Hall on April 9. A joint request by the Service and the Forest Service was submitted to General Lewis B. Hershey, Director of Selective Service, on April 23. Conferences were held with Colonel Lewis F. Kosch and Mr. A. S. Imirie to work out financial and operating details. Order Number 34, establishing the Beltsville Camp Project, was issued May 13, 1942.

The Welfare Association had planned to close Snowden Hall on July 1, but the earlier termination of the Use Permit was agreed to. The mattresses, stove, refrigerator, and the other major equipment were purchased from the Association by the Service for the use of the camp. The dishes, utensils, bedding, and other items necessary to set up immediate housekeeping were sold to the National Service Board. Minor repairs and alterations were made to the building and it was taken over by the Director, Dr. Murvel Carner, and the first detail early in June 1942. It was several weeks or more before camp strength had increased sufficiently to release men for project work.

## Fiscal Year 1943
## July 1, 1942 - June 30, 1943

Effects of the war were beginning to be felt and fully realized in many ways but the research units were most affected by the loss of personnel and the resulting changes. Numerous projects related to the war effort were started and considerable reorganization was required. An air raid protection program was put into effect with Ralph Nestler serving as Chief Warden. Material shortages were anticipated and critical repair items were purchased and stocked for future use. Tires, gasoline and fuel oil were rationed and conversion of all heating plants to coal was threatened. Objections of the Service were overruled and the Central Offices were moved to Chicago on August 17, 1942 as a war measure. The personnel of the Section of Distribution and Migration of Birds and the Section of Biological Surveys were transferred to the refuge to occupy quarters in the Nelson Laboratory. Mr. Arnold Nelson came to the Patuxent Refuge to take charge of the research work as Assistant Chief of the Division.

The assignment of a C.P.S. camp relieved the critical personnel shortage brought about by the war and enabled the refuge, not only to carry on, but to actually advance the general development and maintenance program. The camp was set up to best utilize the education, training, and experience of the men

assigned. An original camp strength of 50 men was soon increased to approximately 70 by the provision of additional dormitory space in the Merriam Laboratory. The project was a cooperative one, and of the number of men available for work, a third were detailed to research and laboratory work, a third were assigned to maintenance or development projects, and the remaining third were allotted to the adjacent Forest Service Experiment Station. A great many of the conscientious objectors were college graduates, some with advanced degrees, and among them were qualified foresters, biologists and chemists who upon selection for a particular project were transferred by request to Patuxent. The quality of the work performed by these men was excellent, and the accomplishments were many. A few of the original group, Chandler Robbins, Clyde Vance, Ernest Ediger, and Robert Mitchell, later remained on to make a career of their work at the refuge.

The first C.P.S. work project was the salvage of saw logs and timber from the Beltsville airport. The Army, in the spring of 1942, had started to enlarge the existing air field and were engaged night and day in the construction of the base. In the extensive clearing involved the disposal of brush, firewood, and logs by burning was a slow and costly process. The refuge was given permission to salvage the saw logs, and the contractors gladly gave every assistance in the operations. The logs were hauled and stocked in a small clearing near the picnic ground and as the work continued through the summer into the fall a supply of lumber, sufficient to last throughout the critical war period was accumulated.

A saw mill and an antiquated tractor were borrowed from the Beltsville Research Center to carry on the work. A saw mill operator, Charles Lammers, was employed as a foreman-mechanic with Selective Service funds, and the mill ran constantly during the winter and spring. The slab pile, as it accumulated, was cut for firewood to serve a very useful purpose in supplementing the short supply of oil for Snowden Hall and the residences.

The conscientious objectors at first refused to work on the airport, to collect scrap metal or perform similar duties because they felt that they were making a direct contribution to the war effort. When they were assured that the projects were only salvage or clean up campaigns and would be carried on regardless of the war their consciences were cleared and no further questions were raised in connection with the work on the refuge.

Many of the boys had been drafted from farms and they were particularly useful in the expanded agricultural work on the refuge. Capable men were found for carpentry, painting, and mechanical repair work on equipment, but the duties of janitors had little appeal except during the winter, and reassignments had to be made constantly.

Steel for a movable tipple had been acquired and this equipment, used with trucks and bulldozers, made it possible to continue the construction and graveling of the service road in Anne Arundel.

This project and the construction of the boundary fence was completed by the end of the fiscal year. That part of the refuge adjoining Fort Meade was used extensively during the year by the Army in their maneuvers and the road and fence are in need of considerable repair as a result. The fence suffered major damage in several locations where inexperienced or careless drivers let their tanks get out of control.

The service road from the headquarters through the lower fields to the Patuxent River was constructed in the fall of 1942. A connecting road through the bottom land and swamp paralleling the river was planned, and although the right-of-way was cleared during the winter and some grading was done, the lack of material and sufficient equipment prevented the continuance of completion of this project.

## Fiscal Year 1944
## July 1, 1943 - June 30, 1944

In addition to important research projects being carried on in the laboratories, every available acre of productive land on the refuge was under cultivation as a contribution to the war effort. Land was prepared and other assistance was given to provide Victory gardens for refuge or Service employees and their families to help relieve the food shortage. The C.P.S. camp was making every effort to be as self-sufficient as possible and a large garden was worked as a camp project with great quantities of fruits and vegetables being canned. Pigs raised on garbage and grain were butchered to provide fresh and cured meats. Pasture fences were built and a stable was repaired for a herd of dairy cattle maintained by the camp. Farm feeds of all kinds were high in demand and scarce

in supply. The refuge grain surpluses exchanged with Beltsville for other services were of added importance.

The fuel oil supply had become critical and the refuge was ordered to convert the heating plants of the Nelson and Merriam Laboratories to coal. Stokers were purchased and installed and two hundred tons of stoker coal was stock-piled in the court at the rear of the Merriam Laboratory. A large crew of C.P.S. boys were required in overcoming the obstacles and inconveniences to keep the heating plants in operation. Coal had to be moved by wheelbarrows from the pile, chuted into a storage bin on the furnace room level, and reloaded to be shoveled into the stokers. The coal, wet from rains or snow would invariably clog the stokers and it had to be dried in small quantities on the boiler room floor. In severe weather the boilers were hand-fed during the day while fuel for use in the stokers at night was being dried. Sheet metal wood-burning stoves were installed in the fireplaces in several residences to help conserve the very limited oil supply. Hardship cases in the community were not uncommon but the situation on the refuge, although critical at times, was always endurable.

Trouble for the future was forecast by a break in the pipe trench of the Merriam Laboratory, but even though repairs could be made, the Service was prepared for the eventual construction of a service tunnel under the building. Necessary material for this work was at that time of such high priority that the refuge was fortunate in having the emergency postponed.

The saw mill continued to operate periodically during the year and lumber was stocked and stripped to season for future use. Lumber required in finish work, such as, flooring and doors was processed by private commercial mills but for the most, rough work material was planned by refuge personnel with equipment borrowed for the purpose. A large open equipment shed was constructed on the farm unit and the existing shed was rebuilt as a garage by the C.P.S. project.

The Lake Redington area had been originally cleared by a District WPA project but the work was discontinued before all of the timber and firewood could be removed. In standing idle it had become completely overgrown with sprouts, briers or other vegetation requiring recutting and extensive clean up before any construction work on the dam could be undertaken. The dam had been designed a year previous by William Taylor, the Service's Engineer, and was assigned a high priority in the work program. Approval of the project and an allotment of funds for the work followed an inspection trip by Selective Service Officials, Colonel Kosch, Mr. Amirie, and the Departmental Representative, Mr. John Shanklin.

Material shortages and lack of proper equipment required some modification and substitution in the construction details. Dynamite was used to secure a solid base for the clay core and heavy boundary fencing served as reinforcement for

the concrete work. A satisfactory deposit of heavy clay for the core and fill was located on Telegraph Road and construction on the dam was started in July with the use of a tipple, trucks, and bulldozers. A truck a minute could be loaded by this method of operation and the work progressed at a rapid pace. Although no alternative was possible an unsightly burrow pit connected with Lake Redington was created, but this scar, if not eventually healed by nature, can be corrected with some equipment work.

The problem of sluiceway pipe for this and other dams to be constructed in the future was solved by the transfer of surplus material from the Army. Fifteen hundred feet of surplus 30-inch bell and spigot cast iron pipe, in the custody of the Baltimore Headquarters of Army Engineers, was located in Pennsylvania. Although the Corps wished to dispose of the entire quantity, by transfer to the Service, John Trower was successful in negotiating for approximately 300 feet to be shipped prepaid to Bowie. On the arrival of the shipment it was discovered that the pipe had been loaded in gondola cars making it impossible to handle by manpower, the long lengths weighing several tons. The Pennsylvania Railroad was at that time operating a crane on some construction work in the Bowie Yard, however, so the situation did not appear to be entirely hopeless. Fortunately, the local agent was a friend of long standing and the construction engineer in charge, was an ardent fisherman and became immediately sympathetic to the problem after he had been extended an invitation to fish in Cash Lake. A box of cigars put the crane operator in a jovial mood and consequently the crane was moved to reload the pipe on refuge trucks.

The spillway and sluiceway were constructed, the slopes were graded and seeded, and the gates were closed on December 9, 1943. The lake was stocked with sunfish, crappie, and bass fingerlings the following summer. A great deal of miscellaneous road and clearing work was accomplished during the winter and spring of this year. Right-of-way was cleared for a connecting road from Lake Redington to Quarters Number 11 and the peninsula on Cash Lake. The front field on the Harding tract and the right-of-way along the interior boundary fence were also cleared. Many of the service roads were re-graveled and a new connecting road from the headquarters to the Laurel-Bowie Road was constructed through the Lammers' farm.

Line clearing was completed and construction was started on a fence for the sixty-acre gravel pit unit located at the south end of the area. Dr. Gabrielson intended to use this unit as a big game pasture, both for demonstration purposes and to arouse public interest in wildlife. Construction was never completed for lack of material.

The refuge had urgent need for additional residences on the area to provide for essential maintenance and scientific personnel. Plans for a unit on the J.W. Knowles tract consisting of two dwellings, a barn, garage, and poultry house, had been discussed and approved by the Division and the Director. A request for

authority to begin construction on the project was approved by the War Production Board on July 8, 1943, with an assignment of an AA-5 priority rating being made. It had been estimated that the dwellings could be built by C.P.S. labor and by using lumber and other material available on the refuge at an approximate cost of $3,500.00 each. Regular funds were not available and with the ruling of Selective Service, that their appropriations were not available for the construction of permanent buildings, the work was delayed and it appeared likely that the project would have to be abandoned.

The proposal was further discussed with Mr. Amirie of the Division of Camp Operations and it was decided that Selective Service was justified in reimbursing the refuge for an equal amount of regular funds expended on Lake Redington Dam and other strictly C.P.S. sponsored projects. Consequently, a compensating allotment was made, and work was started late in the fall of 1943. The priority rating expired in December before construction material of any consequence could be located or purchased, but no difficulty was encountered in securing an extension for the project. Footings and foundations for the first residence were poured in January 1944 and construction on the second residence began in the spring. Few, if any, of the C.P.S. assignees had done any construction work prior to the war and, although they were intelligent and capable, considerable time was required to give them proper training. The lack of experienced men plus the extreme difficulty in obtaining the necessary material had its effect upon the progress of the work and approximately a year was required to build each dwelling.

One factor influencing the selection of the site and the decision to build two houses instead of one was a fine spring of clear ice cold water with a flow of approximately 40 gallons a minute. A reservoir located about a hundred feet from one of the dwellings was constructed and a pressure pump to supply both dwellings was installed. A disposal field and a septic tank for the unit were also built that spring.

The Forest Service Nursery at Beltsville was being abandoned and the refuge was given a choice of desirable trees and shrubs before other agencies had an opportunity to make selections. A large quantity of young trees including a variety of oaks, maples, poplars, honey locusts, redbuds and flowering crabs were transplanted to the headquarters and other building sites in the spring. The loss did not exceed one percent and the rapid growth of these fine specimen trees has done much in adding to the beauty of the surroundings.

**Fiscal Year 1945**
**July 1, 1944 - June 30, 1945**

Although concrete blocks sufficient for both buildings had been made the previous winter, it was early summer before the dwellings were under roof and enclosed. The construction work on the two residences continued throughout the year, but efforts were concentrated on completing a unit at a time. Quarters number 12, started first, was completed and occupied by the Kerr family on January 5, 1945. The second residence, Quarters No. 13, was completed the following summer and was occupied in the next fiscal year.

The refuge personnel took great pride in the two dwellings because the construction had been accomplished principally by their efforts in spite of scarcities and other difficulties, and because much of the material in the structures had originated on the refuge. Sand and gravel for concrete work were obtained on the area and the concrete blocks had been made by the camp. The structural timber, the roof sheathing, much of the trim lumber, the oak flooring, and the pine paneling for dining and living rooms were all the products of the refuge sawmill. A bank-type barn with stables and hay loft, a three-car garage and other outbuildings were constructed a part of the unit during the spring and summer of 1945.

Blue Gill Lake, a three-acre farm pond, was built as part of the unit to provide fire protection, an impoundment for fish, and to solve a problem of grading and landscaping. A large quantity of fill dirt was required for the grading in connection with the residences, and since the steep banks of the small brook flowing near the development could not be easily incorporated in the landscaping, it was decided that an excavated pond would be the simplest solution for both problems. Construction on the small dam was started in July with several bulldozers and, with the exception of the spillway and the sluiceway, was completed the following month. Blue Gill Lake, so named by "Gabe" because the

brook abounded with that species of sunfish, was not stocked, but it is known to contain some pickerel and large-mouth bass. The Forest Service impoundment, a short distance upstream, had been stocked with sunfish and bass fingerlings by Service employees in August 1944.

A power line was extended through the swamp from the J.B. Knowles tract to connect the dwellings with the Beltsville system. Ivy poisoning had always been a problem on the refuge, but clearing of the line right-of-way through the swamp brought a new and much more serious complication in alder poisoning with over three-fourths of the personnel incapacitated before the operation could be completed.

Driveways and a road connecting the development with the central refuge service road were built. With the completion of the construction and grading, the project was seeded, sodded, and landscaped.

Camp and refuge personnel were fully occupied during the summer and fall with farming operations, construction, and the usual maintenance chores. Few furloughs were taken during the winter, and with a more constant and larger work crew from the camp a number of miscellaneous projects were completed. Lake Redington at its maximum level overflowed Telegraph Road and it was necessary to relocate the boundary fence in several places and raise the road above the flow line of the lake. Although South Telegraph Road was county property, it principally served the refuge or the Forest Service, and the road was widened, graded, and re-graveled as a C.P.S. project. Re-graveling of the entire refuge service road system, started the previous year, was completed in the spring of 1945.

A large quantity of tools, equipment, and material had been transferred to the refuge with the closure of the Patapsco C.P.C. Camp of the National Park Service located near Baltimore. This material, in addition to that received from other Selective Service Units, overcrowded all available refuge space and it was necessary to provide additional storage. The lower tobacco barn on the Kluckhuhn Tract was floored on three levels and rebuilt as a warehouse for maintenance and construction material. This construction, in addition to providing a useful permanent structure, solved a work problem for rainy days or extended periods of bad weather. Storage was also an essential need for the research units, and with the completion of the lower barn, reconstruction of the upper one along similar lines was undertaken. Individual bays enclosed with wire netting and doors that could be locked provided each scientific section with storage space for material and equipment.

In the designing and construction of Merriam Laboratory, the service pipes for heat, water, gas, and electricity had been laid in shallow concrete trenches immediately under the floor on two sides of the building. Laboratory equipment tables, radiators, tile floors and steel plates had to be removed before an

inspection of the trenches could be made. Maintenance or repair under these circumstances was not only physically impossible but was also prohibited by the expense involved. An A-shaped service tunnel conforming to the foundation outlines of the building, with openings into the boiler and machinery rooms, was needed to give adequate space for workmen, tools, and repair material.

Breaks in the heating lines, occurring during the fall of 1944, became so serious that the automatic feed could not compensate for the loss of water in the system, and constant operation of the stand-by boiler was required to maintain a uniform temperature. Excavation of 350 feet of heating tunnel with approximately 400 cubic yards of dirt to move by hand was started in February 1945. The work requiring extreme caution to protect the footings and foundations of the building was necessarily slow in progress and was not completed until the following summer. The pipe lines were found to be in much worse condition than had been anticipated, and it was necessary to redesign the service and replace it entirely with new material.

It was intended that the heating tunnel should be constructed by the Beltsville Research Center but their limited and insufficient labor supply made this impossible. A clearing project on the flow line of Lake Redington that had been started previous to this emergency had to be abandoned, and every available man was assigned to the work.

There was a severe reduction of camp strength in the spring due to the temporary transfer of a large group of assignees for protection against the Japanese fire battalion in the West. Services of two regular employees, Maynard Thompson and Alvis Melton, had been lost by the draft, and the project was seriously handicapped during the busiest season of the year.

An allotment of $6,240.00 from Fishery funds, to construct a dam and pond on Snowden Brook near the headquarters, was made in the spring. Two thousand dollars were also provided to resurface the entrance road and courts. Although the work could not be undertaken until the following fiscal year, the money was obligated on Service Orders through the Beltsville Research Center.

## Fiscal Year 1946
## July 1, 1945 - June 30, 1946

The year started with rains that during the month set an all-time record for Maryland. Snowden Hall was struck by lightning with one chimney demolished, but fortunately the damage was not too great. Considerable damage to buildings and roads did, however, result from excessive rain and high water.

The war ended, fuel oil rationing was discontinued, coal stokers were removed, boilers rebricked, and the burners were installed and reconditioned.

The difficulty in securing essential material was still an insurmountable obstacle for many projects of work but better times and a return to normal in a reasonable period were anticipated.

Driveways, courts, and the entrance road were resurfaced in September. It was expected that the work would be done under contract, but the only bid received from the invitations issued was in excess of $5,000, a price higher than the original cost of the road. The Work was done at a cost of $1,760.00 by camp and refuge personnel.

Erosion on the Beltsville airport, which had been abandoned by the Army, was having a very detrimental effect upon Cash Lake and Lake Redington. Fishing in Cash Lake prior to this had been excellent but the catch was steadily declining, and by July 1946, when the lake was opened under permit to public fishing, conditions were pitiful. Some grading on the airfield had been done more-or-less haphazardly under Army contract as a result of the extensive criticisms, but it was inadequate. The refuge furnished considerable labor and equipment during the summer of 1945 to cooperate with the Forest Service in an effort to effect some stabilization of the area. Some benefit was derived from the work but a major problem still remains to be corrected.

The continuous steady decline in the strength of the C.P.S. camp from service discharges affected both scientific and development projects alike. Sufficient labor to harvest the farm crops had been a problem and by winter the numbers had dropped to the minimum required for essential maintenance and operation.

Clearing of the site for Snowden Lake was started in November and continued through the winter and spring of 1946. The cutting had been speeded along by the utilization of a power-driven chain saw but stump removal with dynamite and tractor was at best a slow process.

The refuge acquired a small bulldozer, a motor grader, and a 3/8-yard dragline from the Army Engineers by an exchange of funds. The equipment, which had been used but was in excellent condition, paid dividends on future construction and maintenance work.

Replacement of the scientifically trained assignees had become impossible and with the difficulty of maintaining even a small group of laborers the value of the camp had become almost negligible. An opportunity to use the former Beltsville CCC Camp A3 as C.P.S. headquarters came when the buildings were vacated by the Army Engineers. Snowden Hall was badly in need of extensive repairs as it had suffered in several years damage that was beyond normal expectancy, and the Service was anxious to have the building vacated as soon as possible. An informal cooperative agreement was entered into with the Beltsville Research Center and the Forest Service to equip and repair the CCC buildings for

the joint operation of the C.P.S. Camp. Equipment including ranges, heaters, and miscellaneous items required for housekeeping was transferred by Selective Service from Camp Grottoes in Virginia and the conscientious objectors were moved to Beltsville in June 1946.

## Fiscal Year 1947
## July 1, 1946 - June 30, 1947

The interruption of normal activities that was to be expected as a result of the war, with restriction of funds, material, and labor had largely been offset by the utilization of the Conscientious Objectors Camp. The development work on the refuge had progressed as a result, but maintenance was difficult to handle, on a satisfactory basis. Repair work in general was difficult during most of the fiscal year and a great deal of material, even such simple items as nuts and bolts, was either unobtainable or required a year for delivery. There were not sufficient funds to adequately maintain or repair buildings, roads, fences, or service facilities, but neither was skilled labor available and most of the services usually performed by the Beltsville Research Center had to be postponed. Janitorial service, almost non-existent, was a major problem and scientific personnel were sweeping their laboratories until Mr. and Mrs. Julian Knisley took over these duties.

Construction of the dam on Snowden Creek to impound a 7-acre lake at the headquarters site, started in July 1946, was the only major work undertaken during the fiscal year. The clearing and stump removal was eventually finished but equipment work suffered numerous interruptions and delays from breakdowns with a practically non-existent supply of even minor repair parts. Selective Service was also continuing the practice of discharging assignees under the point system and for several months of the best working weather the project was inactive as a result of insufficient manpower to operate the equipment. Construction continued slowly until working conditions became impossible with the onset of winter.

The Brethren Church, drained during the long period of the war by the terrific subsistence expense of the CPS program, could no longer bear the burden and withdrew from the administration of Camp 34. Camp 34 under Government supervision and operation came into existence on December 10, 1946. Selective Service closed the National Park Service Camp at Gatlinburg, Tennessee, along with several other smaller units, and the Beltsville Camp was increased temporarily to a strength of approximately 100 men. Mr. George Long, camp manager, Mr. Floyd Harrison, steward, and Mr. Marvin Pratt, clerk, were employed by the Service as the staff responsible for the administration of the camp including health, recreation, clothing and subsistence.

A much discussed study of agricultural wildlife relationships was realized in a new project started during the year under the direction of Dr. Durward L. Allen. All available labor that could be spared during the winter and spring was devoted to clearing and other preliminary phases of the work. An allotment was made for the purchase of new, modern, labor-saving equipment to provide for the future farming operations.

The dam on Snowden Lake was finished in the spring of 1947 with the construction of the sluiceway and spillway, and the completion of the grading, top-soiling, and seeding of the slopes. The gates were closed, and the lake was filled early in June.

This lake, in addition to providing for fisheries and waterfowl research, was also planned and approved to provide better fire protection for the headquarters buildings. A house and pumping pit, included with the construction of the dam, were connected to fire hydrants near the laboratory buildings by six-inch water mains. An allotment for the purchase of a large turbine pump was made before the end of the fiscal year. The lake has thus far only been stocked with sunfish.

The camp was closed on March 31, 1947, with the expiration of the Selective Service Act. Surplus equipment and supplies were disposed of in April and the jurisdiction of the camp buildings was returned to the Beltsville Research Center. Although operations were more difficult during the final period, the program as a whole, was a complete success. In several instances prospective serious trouble in the camp was averted by prompt and positive administrative action. A five-man strike that was threatening to spread through the camp collapsed on the second day with a complete loss of face to the strikers when Selective Service officials arrived at the Refuge prepared for immediate and drastic disciplinary measures. Five men were jailed by County police on request and charged with disturbance of the peace when they attempted to instigate and incite a riot in camp. After five days as guests of the County on a diet of fat pork and cabbage the much subdued and hungry trouble makers were greatly relieved to be placed in the custody of Federal Officials. The camp was disbanded a day

in advance of the schedule when the staff was advised by the grapevine of careful preparations made by a small disgruntled group for wholesale destruction and complete bedlam on the last night in camp.

The infrequent trouble occurring in camp was directly traceable to antisocial individuals only professing religious objection. In contributing their services for an ideal the truly conscientious objectors earned the respect of all Refuge personnel.

In addition to the relief of the critical labor situation and the all-important financial assistance, the C.P.S. program brought other material gains to the refuge. When the Selective Service Act expired, the refuge had in its possession a great deal of expensive and valuable equipment. This property for the most part was scheduled for sale, by the War Assets Administration. The remainder originating with CCC could be retained by the operating agency. However, the Service received special consideration and transfers were made on a bulldozer, grader, approximately fifteen trucks, and many other items of tools and equipment.

## Fiscal Year 1948
## July 1, 1947 - June 30, 1948

The Central Office in October 1947 had been moved back to Washington, labor and material were more readily available, and operations--with the exception of the problems created by steadily rising prices--were gradually returning to normal. Maintenance work during the war had been slighted and required more attention. Although considerable contemplated development work remained to be done, the progress at best was slow. Congress, in passing the new draft act, failed to provide for Conscientious Objectors and the possibility of continuing the development under a new C.P.S. program was eliminated.

Farming operations concerned with the Agricultural Wildlife studies were expanded with the employment of two additional men, Michael Dubik and Lawrence Lammers. Hedgerows were planted and construction of drainage and diversion ditches in accordance with the farm plan prepared by the Soil Conservation Service for the refuge, was begun. Extensive clearing work was started and a new brush-cutting machine was put in operation to open additional land for agricultural use.

Snowden Hall was occupied during the year by several families who were unable to find living quarters in Laurel or anywhere in the vicinity of the refuge. The Research Unit was having considerable difficulty in hiring new personnel as a result of the prevailing housing shortage and a proposal to convert Snowden Hall into an apartment building was made. Plans to provide a four-family apartment unit were prepared and approved. Construction was started prior to the end of the fiscal year by the Beltsville Research Center when an allotment for the work

became available. It was anticipated that approximately 4 months would be required to complete the project.

An allotment of $2,085 for the resurfacing of the entrance roads and service courts was approved prior to the end of the fiscal year. This provided for the purchase of asphalt, crushed stone and the rental of a power broom and road roller. The work was performed by the Refuge maintenance group and was completed in July 1948.

Plans were made and an agreement was reached with Dr. E.J. Schriener, of the Forest Service, and Mr. C.A. Logan, of the Beltsville Research Airport. Erosion was jeopardizing the research and management of Redington and Cash Lakes, but the work scheduled to start in August of the following summer was never begun.

The Service approved on June 7, 1948, a special use permit issued to Disney-Bell Post No. 66, American Legion of Bowie, Maryland, for the approximately six acres of land. The Legion had requested a small tract on which to construct a community house and a home for their organization. The acreage selected was located on the southernmost tip of the Refuge approximately one-half mile from Bowie in Unit Number 3. The unfenced tract, adjacent to the Laurel-Bowie Road and remote from study areas, would, in all probability, have little or no effect upon Refuge operations.

A Service picnic was held at the Refuge in the early summer of 1948. The affair was considered to be a great success at least by the Refuge personnel since they were victors by a slight margin over the softball team of the Central Office.

## Future Construction and Development

Many of the projects undertaken during the early development program were necessarily restricted or discontinued for lack of labor, material, or funds. No action beyond preliminary planning could be taken, for the same reasons, on other proposed projects. A number of these merit further consideration for inclusion in future work programs. The need for additional construction or desirable development has been created by the expansion of the research work or has been demonstrated through the experience of 12 years of operations.

The boundary fence is in need of repair or replacement in many places, and the reinforced concrete posts made by the WPA project should entirely replace the wooden ones which have rotted away or are in bad condition. A dike of sufficient height to protect against flood waters and wide enough for a service road will be required before the fence gap in the bottom lands on the north boundary of the Snowden Tract can be closed successfully. The dike could easily be constructed to serve for the creation of a bottom land marsh or an impoundment area by installing a water control structure at the lowest point in the line. A drainage ditch

excavated on grade from the river, paralleling the boundary, would provide spoil for the embankment, a source of water during the drier seasons, and a necessary means of run-off for overflow water impounded at flood time.

Unit Number 3, originally intended as a big game demonstration lot, and portion of which is now being used by the Bowie American Legion, is unfenced. A decision concerning the ultimate use of the tract should be made and fence construction completed accordingly.

The completion and expansion of the service road system, in addition to facilitating patrol and maintenance operations, would provide for the extension of the research projects and a more complete utilization of the refuge. Right-of-ways for additional roads in Unit Number 2 have been cleared, but the major portion of the area is still inaccessible except on foot. The construction of a service road along the interior boundary fence and connection roads from Quarters Number 11 to Cash Lake and Lake Redington Dam will be essential if the original plan is followed in stocking the Unit with deer. Repair of the Anne Arundel service road and the construction of a simple bridge across the river on the north boundary near the headquarters area were planned for the future. Construction to complete the river road in the bottom lands should not be difficult with present refuge equipment when sufficient labor and material are again available.

Numerous opportunities exist on the refuge for the further development of additional impoundments or marsh areas. Construction of a series of fish-rearing ponds, and a 12-acre lake utilizing the old millrace, was planned for the Volkmer Tract in Anne Arundel County. An ideal goose-rearing development near the vicinity of the two large lakes could be made by the construction of one or two dams on the small marsh areas beyond the south shore of Lake Redington. Sufficient feed can be provided by utilizing several adjacent abandoned crop fields, and adequate protection can be obtained by fencing the development as a Unit. The gravel pit on the Kluckhuhn Tract, when enlarged and no longer required for construction or development work, can easily be converted to serve as a fish pond. A farm fish pond of an acre or less, using the overflow of a spring, was planned for the Kluckhuhn Tract as a part of the agricultural wildlife program. The marsh area existing between the J.B. and J.W. Knowles Tracts lends itself to future development by construction, utilizing existing service roads for dikes.

Control of erosion on the Beltsville airport is an essential protective measure for Cash Lake and Lake Redington, and the Service should cooperate as a matter of self protection to accomplish this work. The relocation of the Forest Service road on the Sparks Tract, and the improvement and the stabilization of the shoulders on South Telegraph Road are also necessary to correct the present conditions. Considerable clearing on the flow lines of Lake Redington and Snowden Pond still remains to be done.

The need for additional building construction or improvements in the physical plant will become more important as the personnel grows and the work expands. Sewage disposal for the headquarters has already become an acute problem, and the construction of a modern plant is justifiable to relieve the present conditions and provide for the future. The extension of a heating tunnel between the Merriam and Henshaw Laboratories will become a necessity when extensive repairs to the present system are required. A central heating system, although expensive to construct, would, over a long period, effect a considerable saving in labor and operating costs. Expensive Government vehicles and equipment stand the year around exposed to the elements for the lack of garage or storage space. A service building with adequately equipped plumbing, carpentry, mechanical repair shops, and other facilities, is a fundamental need to improve the maintenance and operations.

The construction of an adequate building properly designed and combined with an animal house and cold storage facilities is essential if the study of wildlife diseases ever attains the recognition it merits. The need for more laboratory and office space will depend upon the eventual growth or expansion of the scientific work.

In-service training is invaluable as a means of indoctrinating employees, and the Service should restore the system at the first opportunity. The Patuxent is an ideal and logical location for the establishment of a permanent school. This would require a building of ample size to provide living quarters and a general purpose auditorium.

Additional housing on the refuge has frequently been stressed in the past as an essential item. Provision of quarters on the area is unquestionably a factor in the employment of new personnel, but the advantages generally accruing to the Government are more than offset by the resulting increase in maintenance and operating expense. Construction of housing units proposed or contemplated in the vicinity of Laurel should adequately provide for the future needs of refuge personnel. The continuing expansion of the agricultural wildlife work may, however, require the construction of a farm unit and a caretaker's residence on the Kluckhuhn Tract for the efficient operation of the project.

The area would be greatly improved by the acquisition of several desirable privately owned tracts of land adjoining the present refuge boundaries. The present scope of the work, however, does not justify a large expenditure that could better serve a more useful purpose. The transfer of several thousand acres in Anne Arundel County by Fort Meade would be the most desirable acquisition of land for the Patuxent.

## Conclusion

The Patuxent has begun its thirteenth year of existence, probably twenty years ahead of a normal schedule of development, as a result of the depression, the emergency program, and the war. Progress in the future will be slower, but with the major portion of the planned development and the construction completed, efforts can be devoted to setting up long-time research projects and to building a permanent organization.

**Patuxent Research Refuge Employment Record**
**April 1936 - March 1949**

| Name | Period of Employment | Type of Position and Service |
|---|---|---|
| Allen, Durward L. | 10/3/46 - to present | Biologist |
| Anderson, John E. | 12/10/37 - 6/21/40 | Construction Supt., WPA-PWA |
| Armstrong, William H. | 10/17/38 - 8/7/42 | Veterinarian |
| Bailey, Woodrow W. | 1/3/39 - 8/21/44 | Biologist |
| Beale, Elsie | 7/1/40 - 8/8/42 | Biological Aide |
| Bellack, Ervin | 7/29/46 - to present | Chemist |
| Blakemore, Lem | 3/23/41 - 4/30/42 | Laboratory Aide |
| Blakey, Harold | 2/2/42 - 3/15/43 | Biologist |
| Brandt, Harry E. | 1/17/49 - to present | Mechanic |
| Burton, Betty L. | 3/10/48 - to present | Typist |
| Carpenter, Russell H. | 8/16/42 - to present | Clerk |
| Charters, Erma M. | 6/1/42 - to present | Clerk |
| Churchhill, Helen | 10/8/42 - 3/31/45 | Bacteriologist |
| Coburn, Don R. | 9/21/38 - to present | Veterinarian |
| Cooke, May T. | 6/1/42 - 6/30/47 | Biologist |
| Crack, Richard | 6/1/42 - 9/1/42 | Clerk |
| Cummings, Charles | 3/14/38 - 1/18/41 | Supervisor, WPA-PWA |
| Dargan, Lucas | 12/4/40 - 10/10/47 | Biologist |
| Derby, James V. | 12/16/46 - to present | Chemist |
| Dewitt, James B. | 6/3/46 - to present | Chemist |
| Dubik, Michael | 7/21/47 - to present | Laborer |
| Ediger, Ernest L. | 2/11/46 - to present | Biological Aide |
| Ellis, Madeline | 4/14/42 - 8/9/42 | Clerk |
| Good, William C. | 11/29/48 - to present | Biological Aide |

| | | |
|---|---|---|
| Green, George A. | 3/1/38 - 6/24/40 | Mill Shop Foreman, WPA-PWA |
| Greezicki, I.J. | 12/16/37 - 8/13/41 | Assistant Supt., WPA-PWA |
| Hance, Frank | 9/26/36 - 7/31/42 | Laborer |
| Harrison, Floyd | 12/21/46 - 3/31/47 | Camp Manager, Select. Svc. |
| Haslup, Geraldine | 9/30/40 - 10/9/41 | Clerk |
| Henry, Emma L. | 10/1/41 - 3/31/42 | Stenographer |
| Henson, William | 12/30/46 - to present | Maintenance Man |
| Horn, Lois M. | 7/1/42 - to present | Clerk |
| Hotchkiss, Neil | 7/1/40 - to present | Biologist |
| Izquierdo, Eladio | 10/1/41 - 4/6/42 | Stenographer |
| Jensen, G. Hortin | 7/1/40 - 8/21/41 | Biologist |
| Journey, Melvin | 2/19/48 - 6/25/48 | Laborer |
| Katz, Meyer | 7/1/40 - 8/4/42 | Biological Aide |
| Kerr, Howard | 4/21/41 - to present | Laborer Foreman |
| Keyes, Whitney S. | 1/3/38 - 6/30/40 | Assistant Supt., WPA |
| Knappen, Phoebe | 7/1/40 - 6/28/42 | Biologist |
| Knisley, Julian | 6/16/47 - to present | Janitor |
| Knisley, Sadie | 6/2/47 - to present | Janitor |
| Kraeski, Arthur R. | 8/13/47 - to present | Clerk-Typist |
| Lammers, Charles | 8/27/42 - to present | Mechanic |
| Lammers, Laurence | 1/12/48 - to present | Laborer |
| Lang, George | 12/10/46 - 5/19/47 | Assistant Dir., Select. Svc. |
| Linduska, Joseph P. | 3/24/47 - to present | Biologist |
| Llewellyn, Leonard M. | 4/22/46 - to present | Biologist |
| Low, Seth | 1/2/48 - to present | Biologist |
| Lusk, Randall | 3/24/38 - 6/30/40 | Ass't. Constr. Supt., WPA-PWA |
| Mahlman, Blanche W. | 6/1/42 - to present | Clerk |
| Martin, Alexander | 7/1/40 - to present | Biologist |
| Melton, Alvis K. | 7/1/40 - 8/22/48 | Mechanic |
| Merson, Frank | 12/9/46 - to present | Clerk |
| Mitchell, Robert | 6/21/48 - to present | Biologist |
| Morley, L.C. | 5/1/38 - 2/6/49 | Superintendent |
| Mullin, Sylvia M. | 10/1/41 - 8/8/42 | Clerk |
| Nelson, Arnold L. | 6/1/42 - to present | Director |
| Nestler, Ralph | 12/1/38 - 4/23/48 | Biologist |
| Norton, Harold | 8/16/41 - 8/2/42 | Biological Aide |
| Palmer, William G. | 11/10/48 - to present | Agriculture Aide |
| Palmer, Adelaide | 6/1/42 - 2/5/43 | Biological Aide |
| Peed, Richard A. | 11/1/40 - 7/7/42 | Laborer |

| | | |
|---|---|---|
| Plum, LeRoy | 2/18/46 - 11/15/46 | Clerk |
| Pratt, Martin S. | 12/27/46 - 3/31/47 | Clerk, Select. Svc. |
| Quartrop, Erling | 4/28/45 - 6/29/46 | Veterinarian |
| Quenstedt, Walter | 5/16/40 - 4/7/42 | Clerk |
| Raines, Miriam C. | 2/10/47 - to present | Clerk |
| Reynante, Osmundo | 8/16/40 - 6/29/46 | Stenographer |
| Richards, Ruth | 6/1/42 - 9/30/48 | Clerk |
| Robbins, Chandler | 12/3/45 - to present | Biologist |
| Saylor, Laurence | 7/1/40 - 4/24/42 | Biologist |
| Schaffer, Walter J. | 10/8/48 - to present | Laborer |
| Severance, Helen A. | 8/29/47 - to present | Clerk |
| Sisler, Pearle R. | 12/1/39 - to present | Clerk |
| Sloan, Orval B. | 4/20/38 - 2/29/40 | Supervisor, WPA |
| Slattery, Margery A. | 4/6/48 - to present | Biological Aide |
| Souder, Maxine | 6/17/46 - to present | Clerk-Stenographer |
| Springer, Paul F. | 5/3/48 - to present | Biologist |
| Stewart, Robert E. | 11/16/40 - to present | Biologist |
| Stickel, Lucille | 9/16/43 - 6/28/47 | Biologist |
| Stickel, William H. | 7/18/41 - to present | Biologist |
| Stilley, Paul | 11/5/48 - to present | Laborer |
| Swiehart, Glenn | 8/2/43 - 10/3/43 | Clerk |
| Tabb, Katherine C. | 6/1/42 - to present | Scientific Aide |
| Thompson, Maurice | 5/10/41 - to present | Mechanic |
| Thompson, Maynard | 2/8/42 - to present | Mechanic |
| Treichler, Ray | 9/2/41 - 6/10/45 | Chemist |
| Trombley, Noah | 9/1/38 - to present | Laborer |
| Trower, John N. | 8/23/39 - to present | Supt. of Maintenance |
| Uhler, Francis | 7/1/40 - to present | Biologist |
| Vance, Clyde | 5/20/46 - to present | Biological Aide |
| Voris, Anna M. | 10/18/48 - to present | Stenographer |
| Warbucks, Oscar | 9/20/48 - to present | Biologist |
| Webster, Clark G. | 9/29/47 - to present | Biological Aide |
| Wetmore, Psyche W. | 6/1/39 - 7/23/42 | Bacteriologist |
| White, Dora E. | 5/3/43 - to present | Administrative Assistant |
| Williams, Virginia | 11/1/41 - 5/31/46 | Clerk |
| Williams, Wm. Dudley | 10/1/39 - to present | Biological Aide |

MISCELLANEOUS PHOTOGRAPHS OF THE PATUXENT REFUGE

Snowden Hall and Headquarters area prior to development

Ice storage and poultry house on site of Nelson Laboratory

Old slave quarters near the Manor House

Carriage house and barn standing adjacent to the pear orchard

Shed for cattle and sheep razed in connection with the construction program

Tobacco barn located on Headquarters Area

Construction of 20,000 gallon reservoir for storage of spring water

Pump house for spring reservoir

Sidewalk construction, grading, and sodding prior to dedication day

Headquarters, June 1939

View from Snowden Hall looking toward garages

Superintendent's residence constructed with WPA-PWA grant

Assistant Superintendent's residence

Four family apartment house

Greenhouse and tanks for aquatic plants

Entrance gates and road to refuge headquarters

Constructing barbecue pit and spring reservoir for headquarters picnic ground

Picnic ground grille and oven prior to construction of shelter house

Log house following repair and landscaping work

Hance residence razed for new construction

Hay shed near log house

Barn and outbuildings on Hance farm

Hance barn, first WPA tool room and time office

New farm unit constructed on Hance tract by CCC, WPA, and PWA grants

Barn and silo on J.W. Knowles tract standing in front of the residence near Laurel Bowie Road

Barn and outbuildings on Harding farm razed to provide for new construction

Old slave quarters on Kluckhuhn tract razed during general cleanup

Tenant house located on Kluckhuhn farm

Farm implement and storage shed salvaged for construction material

One of two large tobacco barns rebuilt as storage warehouses by WPA

Mr. and Mrs. John Ball land on the Kluckhuhn tract summer of 1938 to inspect progress of WPA project.  Greeted by Superintendent's sons

Residence on J.W. Knowles farm razed in connection with new construction described in Fiscal Year 1945

Construction of large concrete pipe by refuge WPA workers

Dynamiting sluice-way drainage ditch for Cash Lake

Cash Lake and dam from the spillway