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Twenty-Fourth

Biennial Report

of the

Wisconsin State Conservation Commission

Publication 612–55

LETTER OF TRANSMITTAL

HONORABLE WALTER J. KOHLER
Governor of Wisconsin
Madison, Wisconsin

Sir: In compliance with the provisions of section 14.61 of the state statutes, we have the honor to submit, for your consideration, the report of the State Conservation Commission of Wisconsin concerning its work for the biennial period ending June 30, 1954, as well as certain recommendations, which we trust will meet with your approval.

Respectfully submitted,

STATE CONSERVATION COMMISSION
Guido Rahr, *Chairman*
John O. Moreland, *Secretary*
Douglas Hunt
A. W. Schorger
Leonard J. Seyberth
Charles F. Smith

Jan. 20, 1955

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OF THE

STATE CONSERVATION COMMISSION

OF

WISCONSIN

For the Fiscal Years Ending June 30, 1952
and June 30, 1954

MADISON, WISCONSIN
1955

CONSERVATION COMMISSION

GUIDO RAHR, Manitowoc
Chairman

JOHN O. MORELAND, Hayward
Secretary

DOUGLAS HUNT, Wautoma
A. W. SCHORGER, Madison
LEONARD J. SEYBERTH, Eau Claire
CHARLES F. SMITH, Wausau

●

CONSERVATION DEPARTMENT

L. P. VOIGT
Director

JOHN A. BEALE
Chief State Forester

C. A. BONTLY
Finance

W. T. CALHOUN
Information and Education

W. F. GRIMMER
Game Management

G. S. HADLAND
Law Enforcement

C. L. HARRINGTON
Forests and Parks

GEORGE SPRECHER
Assistant Director

LULU M. KORN
Clerical

NEIL LEMAY
Forest Protection

LAURENCE F. MOTL
Engineering

EDWARD SCHNEBERGER
Fish Management

S. W. WELSH
Cooperative Forestry

Conservation Commission

The six-member Conservation Commission is the policy-making body whose judgment, perspective and effort have guided the progress of the Conservation Department. Its non-salaried members are appointed by the Governor by and with the consent of the Senate for a term of six years, two appointments being made every two years.

In keeping with Section 23.09 of the Statutes, the Commission is charged with the responsibility: "to provide an adequate and flexible system for the protection, development and use of forests, fish and game, lakes, streams, plant life, flowers and other outdoor resources in the state of Wisconsin." As authorized by statute, it makes such rules and regulations, inaugurates such studies, investigations and surveys, and establishes such services as it deems necessary to carry out the provisions and purposes of the Conservation Act.

Formal meetings of the Commission are held usually once a month, on the second Friday. In order to expedite its heavy workload and to provide for an increased number of appearances, the Commission, toward the close of the biennium, appointed a subcommittee, consisting of two of its members, to review the subject of adjustments, sales, and leases pertaining to forest land and to report its findings to the entire Commission. The successful functioning of this committee led to the inauguration by the Chairman, with the consent of the Commission, in the fall of 1954 of a three-committee system to review and discuss, prior to the regular meeting, specific problems with departmental personnel and others who wished to appear with the idea of formulating recommendations for presentation to the Commission as a whole. All meetings of the Commission are open to the public.

Policies developed by the Commission over the years and those adopted from time to time are reviewed and codified by the Information and Education Division and will eventually be compiled in a single volume for ready reference and guidance.

In order to obtain firsthand knowledge of the state's natural resources and developments, many personal inspections are made by individual commissioners throughout the year. One of the major surveys included a two-day airplane flight to observe the state's major conservation projects, one of the planes being provided by the Chairman.

In January, 1953, the Commission elected Guido R. Rahr as its chairman to succeed Arthur Molstad, and re-elected John O. Moreland as its secretary.

Two Commissioners, A. W. Schorger of Madison and Leonard J. Seyberth of Eau Claire, were appointed in 1953 by Governor Kohler to succeed Commissioners Arthur Molstad and J. A. Riegel, whose terms expired on July 27, 1953.

Administration

Conservation Director

The Conservation Director, employed by and responsible to the Conservation Commission, is the administrative head of the Conservation Department. He assumes the responsibility for the execution of the Commission policies; exercises the powers of the Commission in the interim of its meetings but subordinate thereto, but is not delegated with authority to make rules and regulations. He is the appointing authority for personnel of the department.

On March 15, 1954, Ernest F. Swift, Director of the Department since 1947, resigned his position to accept a position with the U. S. Fish and Wildlife Service. He was succeeded by L. P. Voigt, Chief Administrative Officer, who was appointed Acting Director.

Assistant Conservation Directors

At the close of the 1950–52 biennium, the Commission approved a re-organization plan which provided for four assistant directors to assist the Director, assume the duties of the Director during his absence, and supervise certain divisions of the department.

The primary responsibilities delegated to the Director's assistants include the following:

Chief Administrative Officer—consultant on administrative matters; responsible for department personnel functions, in-service training, job analysis, employe relations and liaison with the Bureau of Personnel; general supervision of staff services and clerical division. The work undertaken by Chief Administrative Officer was temporarily combined with that of the Acting Director when Mr. L. P. Voigt was appointed to fill the position vacated by Director Swift.

Assistant Director—general supervision of information and education, engineering, and finance divisions; responsible for legal services, legislative program, relations with commission, advisory boards, executive office and those of an intra-departmental nature.

Assistant Director—responsible for general supervision of fish management, game management, and law enforcement divisions, and for the river survey program.

Chief State Forester—general supervision over the three forestry divisions: forest protection, cooperative forestry, and forests and parks; responsible for the state's forestry planting program and the forest inventory survey.

Mr. John A. Beale was appointed Chief State Forester in May, 1954, to fill the position previously occupied by an acting state forester.

STAFF SERVICES

Assistant Secretary, Conservation Commission

During the biennium as in the past, the Secretary of the Commission, J. O. Moreland, was provided with the services of an Assistant Secretary to aid him in carrying out the secretarial functions delegated to him as an officer of the Commission.

The Assistant Secretary under the supervision of the Director circularizes members of the Commission with material for consideration at their meetings or material of an informational nature, prepares the agenda for the Commission meetings, records the meetings with the aid of a tape recorder, and prepares the minutes for circularization. Maintaining records of all Commission actions, providing services to Commissioners upon request, and furnishing jurats are among the many additional duties performed by the Assistant Secretary.

Executive Secretary, Forestry Advisory Committee

The executive secretary of the Forestry Advisory Committee directs the work of the Committee in a manner mutually satisfactory to the Committee and the Conservation Commission. He assumes responsibility for fostering sound working relationships between the forest industries of Wisconsin and the Commission; acts as liaison in promoting sound forestry legislation, forestry research programs, and forestry education and publicity. Investigations are undertaken and programs inaugurated at the direction of the Committee and in cooperation with the Department.

Meetings of the Committee are scheduled and conducted by the executive secretary who prepares the agenda and reports the Committee's findings and recommendations, advisory in nature, to the Commission. During the interim, Committee members are contacted individually by the executive secretary, problems discussed, studies initiated, and research undertaken.

Personnel Office

The purpose of the departmental personnel office has been to establish, maintain and coordinate an integrated over-all personnel program for the entire Conservation Department. In any organization employing nearly one thousand permanent employes who perform a tremendous variance of skilled, professional and technical duties, it is in the interest of sound administration that specialists assume the responsibilities of coordinating such a well-rounded personnel program. The head of the personnel office, who acts as Chief Administrative Officer, also has general responsibility for specialized administrative projects and studies. During the past biennium comprehensive studies were made on salaries paid top conservation positions in various states, the functions of policy-forming conservation commissions and bodies throughout the United States, and automobile mileage allowances and costs. This last study encompassed an evaluation of over 600,000,000 miles of business driving by both governmental agencies and private companies.

Also inaugurated during the past biennium and sent to various supervisory personnel was a monthly publication containing ideas and information on supervision. Because of the successful reception to this publication, it is intended that more personnel of the department will receive this helpful collection of supervisory information.

Among the regular personnel functions assigned to the personnel office are the following: the recruitment, selection and placement of personnel, job classification and job evaluation, training, job promotions, employe morale, supervision of centralized personnel records, formulation of personnel policies and procedures and relations with the Bureau of Personnel.

The personnel office is represented on the Personnel Council, a subcommittee of the Personnel Advisory Committee, and through regular meetings, not only gains experience and valuable data on public personnel management, but can provide information which may be of mutual interest to other operating departments and the Bureau of Personnel.

Legal Counsel

The legal counsel performs work of a legal nature relating to the administration and enforcement of the conservation laws; analyzes legal documents and instruments before execution by the department; examines titles and closes land purchases; prepares legal documents and serves as consultant to departmental personnel in legal matters related to the performance of their duties; drafts commission orders; prepares recommended legislation of the department; provides the public with legal interpretation of conservation laws through personal contact and correspondence; examines claims pertaining to bounties, and deer and bear damage; conducts formal and informal hearings in connection with the administration of the conservation laws and issues decisions based on such findings.

Supervisor of Inventory

The Supervisor of Inventory is the custodian of the department's records of physical property. His duties include: the maintenance of records necessary to assign responsibility for department-owned nonexpendable property and for distribution of departmental property in the best interests of the organization, the maintenance of insurance on department-owned property, and the processing of insurance claims. He investigates and makes recommendations for procedures to be used in property control.

The department's annual physical inventories are taken under the supervision of the Supervisor of Inventory.

Wisconsin Conservation Congress

The Wisconsin Conservation Congress, consisting of three regular delegates and two alternates, elected at public meetings held in each of the seventy-one counties of the state and acting as an advisory body to the Wisconsin Conservation Commission, continued its effective contribution to a sound and basic conservation program.

Officers of the Congress and members of the Executive Council recommended continuation of the activities of the study committees, organized to advise the Council on recommendations to be made to the Wisconsin Conservation Commission. The following study groups were continued: Big Game, Waterfowl, Trout, Fish, Upland Game, Fur, and Education and Public Relations.

The Executive Council has followed the procedure established over the past several years of holding four meetings a year. Each of the study committees meets at least three times a year.

The practice regarding the re-election of county congressmen, whereby one regular representative is elected for a three-year period and an alternate for a two-year period, has proved most satisfactory and is being continued.

At a state-wide meeting of the Congress in Madison on June 7, 1954, district councilors were elected and the following officers were re-elected: John R. Lynch, Chairman; L. C. Whiffen, Vice-Chairman; and L. H. Kingston, Secretary-Treasurer.

Forestry Advisory Committee

The Wisconsin Forestry Advisory Committee, created for the purpose of encouraging a better understanding of forestry development on the part of the wood-using industries and the Commission and to furnish an advisory medium for the Commission for a coordinated forestry program, has served in a most effective manner since its inception in 1948.

Membership on the Committee consists of four representatives of the Forest Industries Information Committee, two representatives of the Timber Producers Association, one representative of the Wisconsin County Boards Association, and one representative of the Northern Hemlock and Hardwoods Manufacturers Association. Appointments with no specific term of office are made by the respective groups.

The forestry inventory program, one of the Committee's first recommendations, was successfully undertaken and work on the project continued throughout the biennium. Recommendations, presented after a thorough study and analyzation of forestry problems, for the expansion of the forest entomology and pathology program, a more intensive forest research program, adequate forestry legislation, expansion of the farm forestry and watershed management program, and a study of the jurisdiction of the forest insect control program are indicative of the forward-looking advice rendered by the Committee to advance the department's forestry program.

Meetings of the Committee are held at various times and locations throughout the year, with at least one meeting being scheduled jointly with the Commission.

An outstanding achievement during the biennium was the Committee's initiation and participation in a state-wide forestry conference, known as the Silver Anniversary Forestry Conference, held in Milwaukee on November 30 and December 1, 1953. Committee members along with members of the Conservation Commission and the department, representatives of

industry, state and federal agencies contributed materially to the success of the Conference, designed to focus the attention of Wisconsin citizens on the development of the state's forest resources and to increase their awareness of the importance of the resource to the economy of the state.

Members of the organization are: H. F. MacFarlane, Chairman, George A. Houghton, Vice-Chairman, Ivan Branham, George Corrigan, D. C. Everest, F. G. Kilp, J. D. Mylrea, and Allan S. Haukom, who also serves as executive secretary of the Committee.

Great Lakes Commercial Fishery Advisory Committee

The Great Lakes Fishery Advisory Committee, created in 1951 to advise and assist the Conservation Commission in matters relating to the commercial fishing industry and to serve as liaison among the commercial fishermen, sportsmen, and the Commission, has fulfilled its mission in a most satisfactory manner. Its present membership consists of two commercial fishermen and one sportsman from Lake Superior, two commercial fishermen from Green Bay, two commercial fishermen and one sportsman from Lake Michigan, and one wholesale fish dealer. The sportsmen representatives are appointed by the Conservation Congress.

Three meetings were held during the biennium—two at Green Bay and one at Wausau. At these meetings, commercial and sport fishing regulations, legislation, and uniformity of regulations between states were discussed and recommendations made to the Conservation Commission.

Study is made by members of the Committee of needed, pending, and present legislation pertaining to the commercial fishing industry in Wisconsin. Investigations of a research nature, conducted during the interim of the meetings, aid in the establishment of regulations on a scientific basis. The Committee's efforts have resulted in promoting better public relations and a mutual understanding between the commercial fishermen and the public.

Cliff Wenniger of Algoma has served as the Committee's chairman during the biennium. Other members of the Committee include: Emory Jones, Vice Chairman, Cornucopia; Marcel Schwarz, Secretary, Sheboygan; Ever Bodin, Bayfield; Joseph Cayner, Port Washington; Joe DeWitt, Suamico; Hiram Hansen, Bayfield; Frank Korchak, Marinette; Alex Meunier, Sturgeon Bay; and alternates: Melvin Erickson, Bayfield; Ray McDonald, Kenosha; and J. J. Stettersten, Marinette.

Information and Education

Year after year greater public interest in the outdoors increases the demand for the informational and educational services of our department. This combined with a wider and more varied program of conservation activities necessitates making available more information to our citizens so they may better understand the policies and procedures of the commission and department.

To perform this task without increasing the personnel of this division has required a constant evaluation of the activities in order to give priority to those services which are most efficient and effective.

The media used with variations in methods during the past two years were similar to those in the previous biennium. Newspaper services for daily and weekly papers have been continued. Two monthly publications reach approximately 70,000 readers, a speakers' bureau is in operation, motion pictures and other visual aids have been produced and distributed, special pamphlets and informational literature have been prepared, exhibits have been planned, constructed and presented and special services undertaken with schools, teacher training institutions and camps as well as with adult and junior clubs and organizations. The program of advertising Wisconsin continued to be one of the functions of the information and education division.

The chief effort of the division in the last biennium has been to stretch available personnel as far as possible over the expanding field rather than add additional workers. Considerable has been accomplished by closer coordination between the various activities. Personnel has been assigned additional jobs to take care of the speakers' bureau, help out on moving picture planning and writing and other tasks for which no specialized help is available. As best it can the division tries to meet radio and television demands without specialized help. The division works in close cooperation with the rest of the department in an attempt to make the most of informational opportunities. Many public demands are not met as the division finds it necessary to restrict its efforts largely to a wholesale level where the needs of most people can be met with the funds and personnel available.

Any expansion of activities during the biennium was made possible only by continuous evaluations and careful planning. Expenditures for the services of this division remained the same as that expended during the previous two years.

INFORMATION

News Services

The Information and Education Division carried on its usual press services during the last biennium. This included the week to week news releases, special services and information asked for by various press outlets, "Con-

servation Notes", a column devoted to an explanation of department and commission views, and a weekly "How's Fishing?" column during the tourist season. The latter column is made up of reports of conservation wardens as to current conditions in their areas. There was an increased use of picture mats for newspapers in the past year.

During the past biennium the publicity section of the Information and Education Division initiated, wrote and printed two booklets, "The Road to Wildlife Abundance" and "Wisconsin Stream Improvement". Each listed the many projects being carried on by the department in the respective fields.

Considerable time of the publicity section during the biennium was taken up in the furnishing of written reports for the department "Conservation Bulletin" and the "Activities Progress Report".

Newspapers annually devote more than 100,000 column inches of space to carrying news releases issued by the division.

Wisconsin Conservation Bulletin

Circulation of the Bulletin in November, 1953, reached 75,000, which is the limit established some years ago by the Conservation Commission. Thereupon, revision of the mailing list was undertaken. Double post cards were sent to 47,500 subscribers, and those who failed to return a properly filled-out card were dropped from the list. This resulted in reducing the inventoried portion of the list by about one-third. Circulation dropped to 59,500 in April, 1954, but rose to more than 61,000 by the end of the fiscal year.

By the standards of state conservation magazines, Wisconsin's Bulletin continues to publish an unusually high proportion of material in the strict categories of conservation and education. There is a minimum of entertainment. Material on hunting and fishing almost invariably includes management aspects. Articles are beamed to Wisconsin readers. This approach appears to be very well received by the public.

The principal editorial changes of the past biennium have involved experimentation with make-up and typography. So-called "picture stories," relying largely on illustrations and captions, with text at a minimum, have come into limited use.

Other Publications

Routine publications included fishing regulations, 1,500,000 copies in 1953–1954; general hunting regulations, 600,000; waterfowl regulations, 150,000; and trapping regulations, 60,000.

Other new publications included several technical reports on wildlife research, Wisconsin's Stream Improvement, Twenty-Third Biennial Report of the Wisconsin Conservation Commission, and a considerable number of two to six page reprints of articles from the Wisconsin Conservation Bulletin. Various older publications were reprinted as supplies became exhausted.

Activities Progress Report

The Activities Progress Report is an 8½" x 11" processed publication of the department which is distributed to approximately 4,000 key conservation employes, groups and individuals largely in Wisconsin. Twenty

issues were published during the biennium. Contents include a summary of actions taken by the Conservation Commission, miscellaneous articles about conservation in the state and field report of activities in the five areas. Distribution is to all professional conservationists of both state and federal services, members of the Wisconsin Conservation Congress, the president and secretary of all conservation organizations in the state, legislators, the press, radio stations, the larger libraries and in general, those individuals and groups which would make good use of this type of report which is more detailed than the Wisconsin Conservation Bulletin.

Handbook of Policies and Procedures

At the beginning of this biennium a program for development of a Handbook of Policies and Procedures was inaugurated. As it was impossible to completely rewrite all Commission policies and department procedures in the new proposed pattern to immediately produce a "Handbook," it was decided to issue it after a transition period in which rewritten materials would be developed.

In fulfillment of this plan, a number of policy statements were prepared and adopted by the Conservation Commission. These included policies on management of prairie grouse, trespass on state lands, the growing of trees and shrubs for reforestation, the establishment of commission policies, trout management, cooperation with the finance division, appearances on radio and television programs and leases on department lands. Policy statements now pending Commission action or in process of preparation deal with watershed management, political or outside activities of employes, sale and acquisition of lands and the loan or sale of original motion picture film. Policy statements are now prepared under the procedure set forth in Administrative Directive No. 10 dated December 16, 1953.

The department's new program of procedures was outlined in Administrative Directive No. 1 dated August 18, 1953. Under this plan the following number of items have been issued during the biennium:

16 Administrative Directives
35 Administrative Memos
7 Technical Specifications (2 in personnel and 5 in finance)
5 General Letters by Division Chiefs

At the close of the biennium this program was moving into even fuller action with assurance that a Handbook of Policies and Procedures might eventually be accomplished.

EDUCATION

The education section furnishes consultant services to clubs, schools and camps, conducts an exhibit program, and a visual aid and film library.

School Program

In furthering conservation education, the schools receive priority attention. Hundreds of packets of conservation materials are sent out annually to teachers. Department personnel gives assistance in developing and

A class in game management on the "Conservation Day" high school program.

taking part in school programs. Visits to high schools with demonstration programs has grown from its beginning three years ago to where four teams of conservation department technicians visited 91 high schools of 45,000 students with a five hour program in 1954. The program is being continued in 1955.

A Directory of Conservation Personnel Available to Assist Schools has been prepared and is available to schools on request. All vocational agriculture teachers have been furnished the directory.

Through the use of donated funds the education section designed and furnished the county school superintendents with portable "Conservation Kits" to put out on loan to their teachers.

An education feature is prepared for the Wisconsin Conservation Bulletin during the school term. This keeps the teachers informed as to school activities in the conservation field.

Full cooperation is given the State Department of Public Instruction, University of Wisconsin and state colleges in the development of a statewide conservation education program.

Services to Clubs and Organizations

An adult education program has been carried out through talks and motion picture showings before service clubs, women's organizations, conservation clubs and various other groups.

Conservation Department motion picture in the making.

Cooperating very closely with the Trees for Tomorrow Inc., conservation education programs were carried out with the Wisconsin Federation of Women's Clubs, and an educational program was also carried out with the cooperation of the Education and Public Relations Committee of the Wisconsin Conservation Congress, whereby 50 delegates from sportsmen's clubs participated in the educational program at Trees for Tomorrow.

All sportsmen's organizations were encouraged to sponsor Junior Conservation Clubs, and to assist, a pamphlet on junior programs and projects, originally written by W. T. Calhoun was revised, and sent out to all of the conservation organizations in the state. Wisconsin's 620 conservation organizations were given assistance by this action, and emphasis was continued for the need of a better understanding between the farmer and sportsman.

A member of the education section also serves as liaison between the Conservation Department and the Conservation Congress.

Visual Aids

During the past biennium the department's photographic section has continued to organize a visual library of subjects designed to effect a better understanding of conservation and the objectives and activities of the department. Visual aids help inform people about forest, wildlife and fish management and related subjects. A library has been developed for loan purposes consisting of 78 films on these subjects. They are available to any Wisconsin group or organization free of charge, except return transportation charges to Madison.

Visual aids library, headquarters for conservation motion picture film, still photographs, slide and display sets.

Twelve scenic and recreational motion picture films have been made showing Wisconsin's fine fishing waters, state parks, canoe trips, winter sports and natural vacation areas. These films are of interest to citizens of the state as well as to the tourist public from other states. Because of the ever-increasing nation-wide demand for our department films, slides and display sets, it has been necessary to limit distribution to the nine states of Minnesota, Iowa, Missouri, Kansas, Illinois, Michigan, Indiana, Ohio, and Kentucky. These states comprise the greatest potential area upon which the Wisconsin tourist industry chiefly depends for visitors to the state.

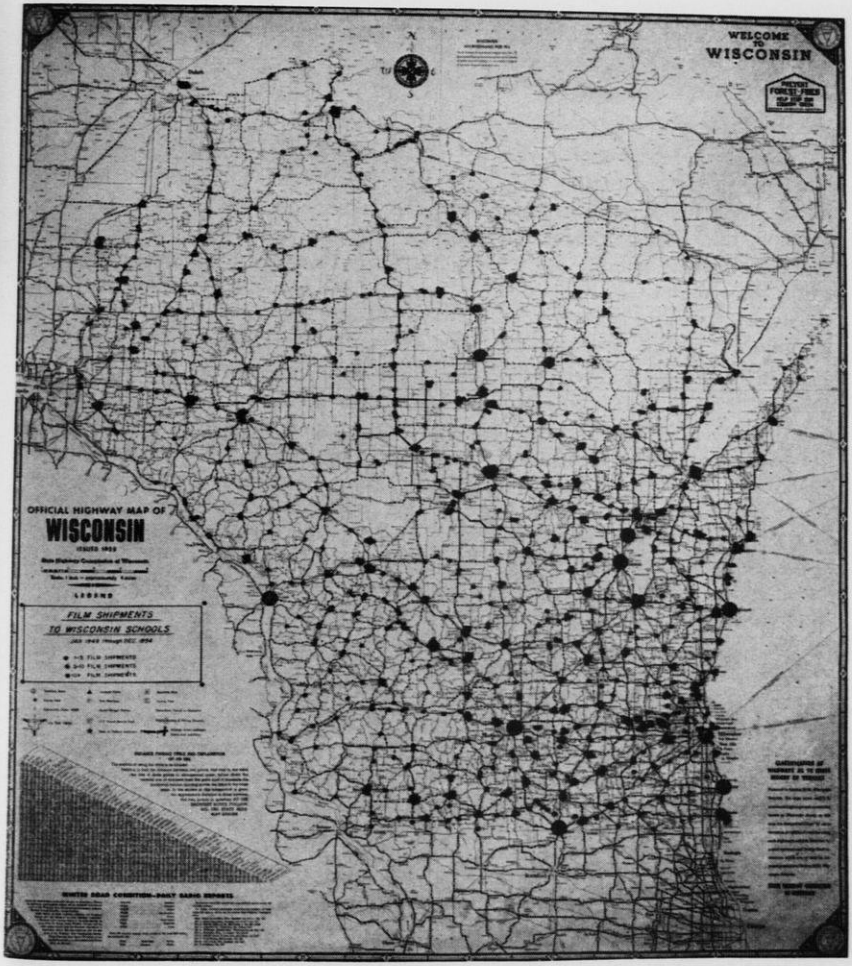
Several copies of each of our films are deposited with the Milwaukee Public Museum film library. All film requests from the Milwaukee area are referred to this agency. In the past biennium the Milwaukee Museum has made 3,915 distributions of our films.

During the biennium production of two new sound, color films was completed. They are "Glacier-Made Wonderland," a scenic film describing the wonders of the Kettle Moraine State Forest, and its many recreational facilities. "Watershed" is a film that tells a story of the relationship between good land usage to a stable economy in Wisconsin. Emphasis is placed on the necessity of checking the destructive erosion forces of wind and rain. Methods of working out a compatible pattern between dairying, intensive agriculture and forest and water resources is shown.

In addition to the completion of the above two film productions, considerable work was done on a new fishing film and a game division film entitled

"Hunting Throughout the Year". Both of these films are forthcoming productions.

In addition, 13 16mm copies of eight film subjects were purchased or donated and made available for free distribution from the department library. They are, Let's Work Together, color sound film; Paradise Lost, color sound film; Deer Live With Danger, color sound film; Great Lakes Invader, color sound film; Bobwhite Through the Year, color sound film; Marsh Waters, color sound film; From Trees to Lumber, black and white sound film; Waterfowl in Action, color sound film; Magnificent Canada Goose, color sound film; The Chain of Life, color sound film; The Michigan



Each dot indicates at least one film shipment to Wisconsin schools. Some of the larger dots represent hundreds of shipments. This is based on a six-year period, 1949 through 1954.

Deer Story, color sound film; Fish and the Seine Net, black and white sound film; To Conserve our Heritage, color sound film.

The visual aids library now contains 451 reels of 78 different subjects, most of these are colored sound films. Reports of film, slide and display set showings totalled 21,409 for the biennium, a decrease of 24 percent over the previous biennium.

Records of speeches delivered by department representatives are maintained in this section and show a total of 3,396 during the biennium; 1,195 used department movies with their talks.

The still photographic file contains 13,688 black and white and 3,253 color transparencies of conservation subjects and scenic views about the state. Newspapers, magazines and state publications utilized 22,084 of these photographs during this period.

Exhibits

Exhibits played a useful role in the conservation educational and public relations program during the biennium. The viewing and identifying of native game birds, animals, and fish; the inspection of color slides, picture blowups, and sound motion pictures on conservation subjects; the opportunity to become acquainted with conservation publications on display, and exhibit personnel at the booth all help to promote effective conservation education. Exhibits impart good public relations between sponsoring groups, the general public, and the conservation department.

During the past two years, nearly a million people have strolled through the cool and restful two and one-half acre conservation exhibit at the Wisconsin State Fair. Here, through the cooperation of all department divisions is presented a most comprehensive picture of conservation in Wisconsin. High lighting the big conservation show were two real logging camp style structures, containing a fish aquarium and other interesting displays; a miniature waterfall and winding stream in a state park and forest setting; a small forest and shrub nursery; a forest fire protection tower, and a complete display of wild animals, birds and fish in their natural habitat. A special smoked carp booth dispensing appetizing smoked carp samples and enlightening information on the carp subject was an outstanding feature at the 1953 Fair.

Besides the State Fair exhibit, the program during the biennium included county fairs, conservation shows for sportsmen's club events, municipal celebrations, community festivals, and teachers' conventions. Dioramas, action panels, information and literature booths, and the live animal, bird and fish displays were selected and used according to the size and importance of the event.

The 1953 exhibit season included 55 various types of wildlife and panel displays as follows: Milwaukee Sentinel Sports and Vacation Show; Fond du Lac Junior Chamber of Commerce Sports Show; Dairy Festival, Reedsburg; Heart of Wisconsin Sports Show, Wisconsin Rapids; Villa Louis Celebration, Prairie du Chien; Memorial Day Celebration, Ocontò Falls; Sportsmen's Show, Janesville; Spooner Sports Show; Neosho Sportsmen's Picnic; Crivitz Lions Club 4th of July Celebration; Delavan 4th of July Celebration; Edgerton Centennial Celebration; Stoughton Festival; Foot-

ville Veterans Festival; American Fisheries Society and Conservation Commission Convention, Milwaukee; Northern Wisconsin Lake Superior Education Association Convention, Superior; Wisconsin Forestry Conference, Milwaukee; Evansville G. I. Celebration; Shorewood Hills Christmas Festival, Madison; National Plowing Contest and Soil Conservation Field Day, Augusta; Madison Sportsmen's Home Fall Festival; Wisconsin–Feltmans Conservation Display, Madison; Madison C & P Fall Festival; Wisconsin Education Association Convention, Milwaukee; Monroe Sporting Goods Display; Milwaukee State College Summer Work Shop; National V.F.W. Convention Parade, Milwaukee; Catholic Teachers Institute, Milwaukee; National Field Archery Association National Tournament, Two Rivers; Southwest Teachers Education Association Convention, Platteville; Wisconsin School Safety Patrol Congress, Wisconsin Dells; Farm & Home Week, Superior; Park and Recreational Society Meeting, Milwaukee; Watertown Sports Show; Wisconservation Club Night, Fort Atkinson; Bradley Sportsmen's Party, Milwaukee; Neillsville Centennial Celebration; Roosevelt Road Display, Kenosha; Weston School, Wausau; Blatz Rod and Gun Club Round Up, Milwaukee; Lawrence College Carnival, Appleton; Kettle Moraine Boy Scout Conference, Sheboygan; Beaver Dam "Y" Circus; Douglas County Fair, Superior; Dane County 4–H Fair, Madison; Buffalo County Fair, Mondovi; Greater Elroy Fair; Northern Wisconsin District Fair, Chippewa Falls; Green County Fair, Monroe; Waushara County Fair, Wautoma; Kenosha County Fair, Wilmot; Polk County Fair, St. Croix Falls; Washburn County Fair, Spooner; Rosholt Free Fair; Kewaunee County Fair, Luxemburg; Waupaca County Fair, Weyauwega; Westby Tobacco Festival; Lodi Fair; Pewaukee Mid-summer Festival.

During the 1954 season, department exhibit appearances were made at: Milwaukee County Scout O'Rama, Milwaukee; American Legion Home Show, Clintonville; Izaak Walton League Convention, Chicago; Heart of Wisconsin Conservation League, Wisconsin Rapids; Milwaukee Sentinel Sports & Vacation Show, Milwaukee; Potawatomi Area Council Scout Show, Waukesha; Villa Louis Opening Celebration, Prairie du Chien; Beaver Dam All-City Circus; Oconto Falls Junior Chamber of Commerce Memorial Day Celebration; Ripon Centennial Celebration; Wisconsin School Safety Patrol Congress, Wisconsin Dells; La Crosse Boy Scout Festival; Omro Garden Club Flower Show; Oshkosh State Teachers Exposition, Oshkosh; Elkhorn Garden Club Show; Lions Club State Convention, Madison; Neosha Sportsmen's Club Picnic; Janesville Conservation Club Festival; Antigo Garden Club Flower Show; Lions Club and V.F.W. 4th of July Celebration, Gillett; 4th of July Celebration, Evansville; Stoughton Fair; Dane County Free Fair, Madison; Dunn County Free Fair, Menomonie; Northern Wisconsin District Fair, Chippewa Falls; Madison Garden Club Festival; Kenosha County Fair, Wilmot; Wisconsin State Fair, Milwaukee; Door County Fair, Sturgeon Bay; Central Wisconsin State Fair, Marshfield; American Ornithologist Union National Convention, Madison; Crawford County Fair, Gays Mills; Yellowstone Lake Recreational Dedication, Blanchardville; Osceola Free Fair; Lions Club Dairy Festival, Reedsburg; Wisconsin Education Association Convention, Milwaukee; National Corn Picking Contest and Field Days, Janesville; State Plowing Contest and Field Day, Manawa; Delavan Lake Flower Show; Fish Creek Hobby Show; Burlington Sport

Mart; Douglas County Fair, Superior; Door County Fair, Sturgeon Bay; Society of American Foresters Convention, Milwaukee; Harley's Station Sport Window, Madison; Four Lakes Boy Scouts of America Camporee, Devils Lake; Eau Claire Rod & Gun Club Jamboree; Sportsmen's Home Fall Festival, Madison; Montgomery Ward Fall Festival, Madison; Sporting Goods Store Window, Beloit; Sun Prairie Christmas Festival.

Recreational Publicity

Wisconsin's extensive program of advertising and publicity "to attract tourists from outside the state to this state" was in its eighteenth and nineteenth years of continuous operation during the biennium. This promotional activity is financed by an annual appropriation of $200,000.

Concerted efforts to attract tourist guests to Wisconsin stressed "Vacation Fun for the Whole Family" in addition to such features as fishing, lakes and streams, scenic attractions, excellent highways and accommodations. Special aspects of the program included magazine and newspaper advertising, frequent news releases, magazine articles, motion pictures, photographic releases and exhibits at out-of-state travel and sports shows in Illinois, Indiana, Ohio, Missouri and Minnesota.

Display ads were scheduled to appear from March through June in 24 leading outdoor magazines and other nationally circulated publications. Newspaper ads appeared from April through June, and also early in the fall to stimulate autumn business, in 33 large metropolitan newspapers with heaviest concentration in the north central states which are Wisconsin's greatest potential zone of vacation appeal. Television was also used effectually in the Chicago market area.

Inquiries received in response to this diversified invitational program reached new record high totals. Inquiries numbered 108,652 in 1953 and 101,667 through June 30 of 1954. (Total for the current calendar year was 124,729, an all-time new record). All inquiries were promptly serviced with packets of informative vacation literature and maps, often supplemented with personal letters.

Close and friendly cooperative contacts were maintained with travel editors and outdoor editors, motor clubs, travel agents, travel feature writers, radio outdoor sports commentators, railroads, bus lines, air lines, steamship and auto ferries. In brief, all ethical means were successfully employed in conducting Wisconsin's tourist promotion program.

Engineering

The Engineering Division of the Conservation Department was organized in accordance with the provisions of Sections 15.77 (6) and 15.78 of Wisconsin Statutes in the fall of 1950. Prior to that time, engineering work was done by individual engineers scattered throughout the various conservation divisions. Since the establishment of the Engineering Division, engineering work has been carried on in accordance with four basic principles.

1. An engineering project approval system has been established and followed which insures that a clear understanding of the engineering job is first worked out between the Engineering Division and the division being served; and then that before any work is done, the director and his staff have the opportunity to approve or reject the contemplated work.
2. A complete centralized engineering file is kept and a standard drawing system is followed so that engineering plans in connection with any design are rendered available for modification and reuse on subsequent similar designs wherever possible.
3. A cost accounting and records system is followed whereby all engineering labor and materials are charged to the particular project concerned, and these total costs in turn are charged against the particular development which required the engineering service.
4. The Engineering Division is so organized into groups of personnel working in specialized phases of engineering, and work assignments are so made that individual engineers progressively develop into specialists and so continually develop and improve themselves.

As might be expected because the Conservation Department is a continually growing and developing organization, the work load imposed upon the Engineering Division has been continually increasing. However, due to increased efficiency, by taking advantage of normal personnel turnover, the increased work load has been carried while reducing the number of engineering personnel from 17 to 13. In consequence of this personnel reduction, even though salary rates have been substantially raised, the over-all engineering costs have been reduced. The following table summarizes the situation in this connection on a fiscal year basis.

COST SUMMARY AND COMPARISON WITH PAST YEARS

No.	*Item*	*1951–52*	*1952–53*	*1953–54*
1	Engineering Personnel—Man Months	178	175	147
2	Number of Engineering Personnel—end of year	17	12	13
3	Annual Total Salary	$61,027.08	$64,247.53	$58,891.27
4	Annual Total Expense Accounts	10,655.01	9,603.78	8,083.00
5	Capital Investment Costs	1,426.52	292.90	994.74
6	All Other Engineering Costs	13,441.91	10,368.15	9,838.13
7	Total Engineering Costs	86,550.52	84,512.36	76,812.40
8	*Item 7* less Capital Expense—*Item 5*	85,124.00	84,219.46	75,817.66

In the above table, the rise in salary costs from 1951–52 to 1952–53 is due to reclassifications and adjustment of salary schedules. Item 5, "Capital Investment Costs", includes expenditures for regular inventory items such as furniture and engineering tools and instruments. Item 6, "All other Engineering Costs", includes all fees for consulting engineering services including Bureau of Engineering services, fees to U. S. Geological Society for cooperative planimetric map making, and all expenditures for prints, bid advertising, office supplies, etc. Of the total expenditures shown above, about one-third of the funds was provided by the budget of the Engineering Division set up to cover all costs which did not associate themselves with any particular division served but rather were a service to the Department as a whole. The other two-thirds of the funds were made available by billing engineering costs against the specific projects worked on. For example in the design and construction of a given building, all engineering costs for such building were paid for out of funds authorized for the particular building. Then on an accounting basis, the engineering costs for any structure were reported as part of the cost of the structure.

All engineering administration, coordination within the Department, and relations with other engineering agencies such as the State Bureau of Engineering, Industrial Commission, Board of Health, Federal Aid Engineering Office, etc., is taken care of through the Chief Conservation Engineer. He also works with and assists engineering personnel in carrying out specific project assignments. The Engineering Division is organized into four sections, each section headed by a section chief. The work carried out by each section is generally outlined as follows:

Mechanical Section

In order to carry on required activities, the Department owns and operates approximately 450 trucks, together with numerous tractors, trailers, fire plows, pumpers, and many other mechanical devices. The efficient use, purchase, development, and in some cases manufacture of such equipment poses many mechanical engineering problems which require solution, continuous observation, and study. These are carried on and in addition many heating and refrigeration problems arise which must be handled. The mechanical section is required to be on the alert to insure that most up-to-date and proper equipment is used to attain maximum efficiency in the various operations carried on by the Department.

Cornell ranger station under construction. Design of structures is part of the engineering division's work.

Electrical and Communications Section

To fulfill its responsibilities especially with respect to fire fighting, the Department owns, operates and maintains approximately 2,300 miles of telephone line, 20 switch boards, many telephone instruments and associated telephone gear. To supplement this point-to-point communications net and operate to mobile units or directly to remote field locations, approximately 210 radio stations are used. The resulting communications engineering demands, both from the standpoint of operations and maintenance, is great. The electrical and communications section assumes this responsibility. In addition, they must make continued studies to insure that the Department keeps up to date in this rapidly developing field. Also they provide such electrical power and lighting engineering service as arises.

Structural Section

Throughout the Department's several divisions, it owns and maintains approximately 1,500 buildings of varying sizes and located in all parts of the state. The structural engineering problems resulting from the standpoint of maintenance, disposal, and new construction are numerous. The structural section in cooperation with the topographic and hydrology section is called upon to design dam structures for water impoundments required in connection with game and fish habitat developments and for

Totogatic dam, built by the Conservation Department. This is primarily a game habitat development.

recreational developments. Special structures such as water control devices, fish hatchery raceways, and other structural design problems are encountered.

Topographic and Hydrology Section

This section provides necessary land surveys and topographic surveys. It carries on all departmental topographic and planimetric mapping, provides necessary geological services, and conducts hydrological studies. As a result of this work, engineering recommendations are made relative to water impoundments, water table, runoff and various water supplies. Since the establishment of Pittman–Robertson and Dingell–Johnson federal aid for the development of game and fish habitat, the demands for surveying, mapping, and hydrological studies have greatly increased to where this section is called upon to do a great amount of engineering work.

Records show that all four sections of engineering working cooperatively have between July 1, 1952 and June 30, 1954 handled approximately 250 specific assignments. Some of these have been minor tasks requiring only a few hours while others have been major tasks calling for hundreds of hours of work spread over many months. Most of these assignments have been completed, but some are continuing and in the process of completion. Also a considerable number of long range projects are still in process which were actually begun prior to the biennium here being reported.

Fish Management

The function of the fish management division is the management of the fishery resources in the state. To further activities in carrying out this responsibility the state was divided into five administration areas in the 1950–1952 biennium with a fishery coordinator in charge of each area. The purpose was to provide decentralization of administrative activity, have closer contact with the public, provide more efficient handling of local fishery projects and give closer supervision of personnel and projects located at various points throughout the state.

Capital Outlay and Physical Improvements

It is estimated that the value of the various fish management properties, equipment, tools, etc. exceeds $3,000,000. Space does not permit a complete listing or inventory at this time, however, the following will illustrate to some extent, the magnitude of the investment:

227	Buildings	$1,269,334.00
	Ponds and Raceways	1,192,500.00
145	Trucks	167,510.00
6	Tractors	15,300.00
46	Power mowers	18,400.00
51	Pumpers	10,200.00
13	Electric Shockers	6,800.00
80	Outboard motors	12,000.00
42	Oxygen tanks	8,400.00
16	Launches	25,000.00
	Nets and Seines	75,000.00
188	Row boats	9,400.00
6	Chain Saws	1,800.00
	Total	$2,811,644.00

Most of the above figures were taken from the department inventory records, but the pond and raceway values were estimated. The above listing does not include the value of land, hand tools, office equipment, laboratory equipment and supplies, libraries, fish on hand and so forth.

Any progressive program will reveal that certain properties or equipment become obsolete and therefore no longer serve a useful purpose. Likewise, projects that are terminated leave surplus equipment or property. Constant weeding out is necessary and the fish management division disposes of such surplus or unserviceable property or equipment as rapidly as possible by following established procedures. During the past biennium many miscellaneous items as well as several sizeable properties were sold. The old McFarland warehouse, Birchwood Hatchery building and DeSoto hatchery building were three of the larger items sold during the biennium.

Likewise, investments and holdings of this magnitude require considerable maintenance if they are to be kept up in a proper manner. Unfortunately, however, there has been a shortage of funds available for this purpose and as a result many of the fish management properties are in a very run down condition and will require the expenditure of large amounts of funds to renovate.

Some of the badly needed and more expensive capital improvements needed are as follows:

Wild Rose—Building to provide housing for trucks, food storage rooms, work shop and office space.
Raceway renovation.

Nevin—Fishery research laboratory building and raceway renovation.

Black River Falls—Laboratory and office space.

St. Croix Falls—New set of raceways, renovation of one building, razing of old building.

St. Croix Falls is one of our older hatcheries and is poorly designed from the standpoint of efficient operation. The water supply is collected from numerous springs on a high hill. There is one long raceway located at the top of the hill and there are eight smaller raceways on a terrace. While such an arrangement is perhaps somewhat picturesque, it does not lend itself to efficient operation. All work is done under difficulty as all food supplies and fish must be carried up or down hill. To improve efficiency and also to gain in total water supply, the "hill" raceways should be abandoned. New raceways should be constructed on the street level at the foot of the hill. This plan offers numerous advantages: considerable labor and time in operation would be saved, the area could be easily policed thus reducing vandalism, predator control improved and the water supply increased. If capacity at major stations could be increased by renovations of this type, one or two of the minor rearing stations could be abandoned and further savings effected.

Making such improvements, although badly needed, is practically impossible under the present budgetary procedures because funds are always unavailable. It is therefore recommended in budget planning that more effort be made to set aside more funds for maintenance, repair and improvements until such properties are again in first-class shape.

Permanent Personnel

The fish management division has a staff of 185 permanent personnel. There are 49 fish manager classes I to VI, 21 biologist classes I to V, 92 conservation aids, classes I to III, 13 maintenance men, 3 mechanics, 3 storekeepers, 1 administrative assistant, 1 statistical clerk, 1 bacteriologist, and 1 account examiner. Every possible effort is made to employ personnel with ability and integrity. In-service training at various levels is practically continuous in one form or another. Last summer training in truck safety was given to all persons driving state vehicles. This is cited merely as an example of the attempt to improve employes and it is proudly reported

that employes welcome in-service training programs and respond very well to them.

In the technical phases, the biologists hold a seminar each quarter. All biologists participate at some time. Publication of papers in nationally known periodicals is encouraged and these journals have high standards. Consequently, papers that are accepted for publication, must not only be properly written, but also must contain sound data.

During the past biennium there were three retirements: Mr. Ray Carter after 12 years of service, Mr. Steve Inda after 25 years of service and Mr. Matt Patterson after 46 years of service. Mr. Patterson passed away March 1954.

Fishery Biology

Investigations

Lake and stream surveys continue to be important in determining the general condition of fish populations in the thousands of lakes and streams in the state. Improvements in gear and techniques have enabled fishery biologists to more easily assess the size and structure of fish populations and to recommend corrective measures. Items that should be mentioned are (1) the use of echo-sounders to map lakes and locate concentrations of fishes, (2) electro-fishing devices used in collecting fish and making estimates of the number of fish present, (3) seines of 2,000 to 3,000 feet in length for extensive sampling of lake fishes, and (4) skin-diving equipment rapidly developing many uses in lake survey and fishery research.

One of the principal benefits arising from routine lake surveys during the past biennium has been the location and development of lakes suitable for trout fishing. In some of these it has been necessary to remove the existing fish populations with rotenone before planting trout. Other lakes, stocked with 6-to-8-inch rainbow trout, have produced some phenomenal fishing within the first year after stocking. Tozer Lake, Washburn County; Weber Lake, Vilas County; Devil's Lake, Sauk County, and Green Lake, Green Lake County, are examples of this type of managed trout waters.

Another important benefit from surveys, especially of trout streams, is the use of the information on fish distribution and success of natural reproduction in developing plans for stream improvement and watershed management. With the tremendous popularity of the watershed improvement program now evident, detailed information on each of our major trout streams is vital to efficient planning and development of this program.

Muskellunge Research

The muskellunge is one of the largest and hence popular of fresh-water game fishes in North America. Although it is distributed generally throughout the midwestern states, the lakes and flowages of northern Wisconsin contain thriving populations of this species seldom found in other localities. In many of these original muskellunge waters, northern pike have been successfully increasing in number to the detriment of the muskellunge. Propagation activities for this game fish aim toward maintaining muskellunge populations at their former levels. To accomplish this, it is felt that plantings of larger fingerlings are superior to past procedures of liberating fry or 1-to-2-inch muskellunge.

Research on pond propagation of muskellunge is being conducted to aid in increasing production of large-size fingerlings. Preliminary work has been sufficient to show the need for tremendous supplies of living food of different sizes and characteristics suitable for the continued growth of the small muskellunge. Attempts to train this fish to accept prepared diets such as are used in trout or minnow propagation have not been successful. Large-scale muskellunge propagation thus will involve intensive propagation of small minnows and forage fish as food, or the continued harvest of forage from natural waters. Under good conditions of food and adequate living space, a production of 40 pounds of muskellunge fingerlings per acre may be expected from natural ponds. This may be increased through continual intensive stocking of forage fishes.

An evaluation study of returns from a planting of 10-inch muskellunge in High Lake, Vilas County, has produced preliminary results during the past two years. In the first two years in which these tagged fish were available to anglers as legal-sized muskellunge, 35 fish or 7.2 percent of the original number planted have been reported. This is a rather surprisingly large return considering the facts that the fish were at large 3 to 4 years before being caught and that only a portion of the fish actually caught are reported by this voluntary census. Known-age scales and fin-bone sections from these fish have been of great value in validating methods for determining the age and rate of growth of muskellunge.

Escanaba Lake Study

Escanaba Lake in Vilas County has been a valuable source of information concerning liberalized fishing restrictions since the study began in 1946. During this period there have been no size limits, no bag limits and no closed season on any species of fish present. The principal game fishes in the catch have been yellow walleyes, smallmouth bass, muskellunge, yellow perch, rock bass, largemouth bass and bluegills. Many other species of fish are present. Fishing pressure on this 290-acre lake has been moderately high, amounting to approximately 100 hours per acre per year.

TOTAL FISH CAUGHT FROM ESCANABA LAKE FOR PERIOD 1946–1953

Year	*Yellow Walleye*	*Yellow Perch*	*Small-mouth Bass*	*Large-mouth Bass*	*Muskel-lunge*	*Rock Bass*	*All other Species*
1946	4	8,803	635	167	14	240	117
1947	47	6,121	421	52	7	306	104
1948	4,313	9,026	385	53	5	224	43
1949	2,199	7,028	540	62	11	235	150
1950	5,887	1,147	191	49	34	380	183
1951	2,243	753	57	21	21	343	302
1952	3,791	393	156	90	52	366	403
1953	4,683	728	636	47	20	1,557	507
Total	23,167	33,999	3,021	541	164	3,651	1,809

Total of all species for 8-year period = 66,352.

The lake has been rather consistent in producing yellow walleyes since 1948, although the catch of this species and others has fluctuated widely from year to year, with little apparent correlation with the actual abundance

of fish present in the lake. It should be borne in mind that stocking of all fish in this lake was discontinued in 1945, and that these data represent the angling conditions from fish produced entirely by natural propagation. This lake will be used in the future to test various stocking procedures now used in fish management in Wisconsin.

Lake Winnebago Studies

A marked increase in popularity in spearing sturgeon accompanied the opening of the additional waters of Lakes Poygan, Winneconne and Butte des Morts for this sport. This addition of open waters to Lake Winnebago also coincided with excellent spearing conditions and resulted in two years (1953 and 1954) of exceptionally heavy harvest. It was considered of utmost importance to learn more of the life history of the lake sturgeon and the effects of the sturgeon season on the population of fish present in these waters.

The lake sturgeon lives to be at least 100 years old and seldom spawns for the first time under 20 years of age. They grow rather slowly, taking about 8 years to be 30 inches long, 13 years old at 40 inches and 20 years to be 50 inches in length. As a result of this detailed study it was deemed necessary to impose greater restrictions on the take of the spearer to ensure the future of the sport. These changes which were endorsed by the sportsmen resulted in a reduction in annual bag limit from 5 to 3 fish and an increase in the minimum size from 30 to 40 inches.

Another fish which is of great importance to the sport fishery in the Lake Winnebago area is the yellow walleye. Fluctuations in abundance of this fish are well known. Present size limits of 13 inches on this species permits the harvest before they are mature for the first time. Also, the greatest interest in fishing for this species occurs at the time of the annual spawning run. Despite this lack of usual restrictive measures to protect the population, tremendous year classes are hatched at times and produce phenomenal fishing. Present populations of the yellow walleye are high and fishing during the winter and summer of 1954 was very good.

The freshwater drum is undoubtedly the most abundant fish in Lake Winnebago. It is inferior to the yellow walleye and white bass as a food or game fish by anglers and thus is very little utilized. This fish spawns successfully in the open waters and maintains populations dense enough to keep their condition at a low level. Rough fish removal operations conducted by state crews and by contract fishermen removed 1½ million pounds of this species during the biennium, yet no improvement in the fatness of this fish could be demonstrated during the period. If this program of rough fish removal can be increased sufficiently, food supplies of more favored game fishes should increase and the drum should also become fatter and more desirable as a food fish.

Brown's Lake Largemouth Bass Study

Many states in the south and midwest have removed all restrictions on hook-and-line fishing for largemouth bass, on the basis that such restrictions were unnecessary limiting the catch. In many lakes in Wisconsin also, populations of largemouth bass appeared to be abundant and little utilized by anglers. To determine whether these bass populations could withstand

additional harvesting without undue depletion, the size limit was removed and the open season was lengthened, on an experimental basis.

Detailed study of the angler's harvest, the population structure and the number of bass present after the fishing season in Brown's Lake indicated that the anglers were harvesting largemouth bass very lightly in comparison to what was present. Anglers took 2,660 bass from 6 to 20 inches in length but there were approximately 20,000 remaining in the lake at the end of the season.

Delafield Pond Studies

During the biennium the propagation of largemouth bass was discontinued and one of the stations formerly devoted to this activity has been converted to a warm-water research center. Studies here have been designed to determine the relationship between carp, largemouth bass, bluegills and crappies. Much has been written about carp depredations and their effects on aquatic vegetation, but their role as competitors with other fish is little understood. One theory holds that carp will hinder the hatch of largemouth bass and bluegills and curtail the survival of the young after hatching.

Four ponds were stocked with various combinations of carp, largemouth bass, bluegills and crappies. At the end of the summer the ponds were drained completely and the fish counted and weighed. After two seasons operations it was obvious that bass, bluegills and crappies were capable of producing young fish in large numbers in ponds with large carp populations present. Future studies will determine the competitive role of carp in regard to the available food supply, since it is apparent that carp and the young of most of our game fishes eat the same kinds of food.

It has commonly been reported that large hatches of carp do not occur every year in nature but rather at intervals of 3 years or more. An experiment was conducted at Lake Mills to determine whether the density of the carp population exerted any effect on the survival of a new year class. Adult carp were placed in small ponds at densities ranging from 37 to 450 pounds per acre. Natural reproduction occurred in each of the 8 ponds used, resulting in production of young carp only for the summer growing period of from 175 to 300 pounds per acre. From these data it does not seem possible that the density of the brood stock exerts much of an influence on the success of reproduction and survival through the first growing season. These studies are being continued in an effort to learn better ways of controlling carp populations in problem lakes.

Evaluation of Trout Stream Improvement

This study was designed and initiated as an aid in the development of techniques and devices used in the statewide program of stream improvement and watershed management. Sponsored by federal aid funds, this project is being conducted on Black Earth and Mt. Vernon Creeks in Dane County. Black Earth Creek is one of the demonstration areas in which all interested conservation agencies are establishing proper soil and water use programs to the limit permissible to the present landowners. On Mt. Vernon Creek, no such watershed program is in effect at the present time. It is hoped that these two trout streams will offer a comparison of future changes sufficient to determine the effects of the improvement program now being

done. The evaluation study has been approached from three aspects, as follows:

1. A study of the fish populations present in sample portions of the stream with observations of changes over a five-year period.
2. A continuing study of the bottom fauna in the streams and its utilization by fish as food.
3. The effects of watershed stabilization practices on the hydrology of the stream, run-off characteristics, silt load, etc.

The first two aspects are being studied by department fishery biologists. The hydrology study is being done by the U. S. Geological Survey.

The study has not been in operation long enough to detect changes in the environment due to improved land use practices. Such changes necessarily will occur slowly making it mandatory that information be obtained over a long period of time. Meanwhile, important information on the management of native and introduced trout is being gathered as well as the analysis and development of proper stream improvement techniques.

University Cooperative Fishery Research

During the biennium the Conservation Department and the University announced the formation of a cooperative program to conduct basic research on the ecology of fishes in Wisconsin. This program is being financed to a large extent by Dingell–Johnson funds and has been sought after for many years by interested persons both in the Department and the University. It has been felt advantageous to combine the wealth of trained personnel and specialized instruments offered by the University in many fields of arts and sciences with the widespread field facilities and equipment of the Conservation Department in an attack on the problems encountered in fish management.

Fishery research investigators will be full-time employees of the University and will be assisted in different phases of their programs by graduate students. A Research Advisory Committee of scientists of recognized standing, newly appointed by the Director of the Conservation Department, will evaluate the program periodically.

Five projects have been selected to initiate this program of basic fishery research. These projects include the following:

1. The competition between rainbow trout and largemouth bass in bog lakes. Many bog lakes in northern Wisconsin may be brought into production of desirable trout by treatment with lime. Fishing would be improved and made more popular with anglers if largemouth bass also could be produced in these lakes together with the trout. This study will determine the suitability of such management procedures. It will also extend our knowledge as to the suitability of additional waters for developing trout fishing.

2. Investigation of the yellow bass fishery of Lake Wingra. The yellow bass is abundant in Lake Wingra but not in the other lakes in southern Wisconsin. Its habits are little known as is its relationship to the more favored fishes such as largemouth bass and bluegills. A detailed study of this species is a start toward the correct management of Lake Wingra in producing acceptable fishing recreation.

3. **Introductory Study of White Bass in Lake Mendota.**

The white bass is an abundant fish in Lake Mendota but at present is lightly exploited by anglers. Preliminary work indicates that this fish does not mix with the yellow perch which is also an abundant fish in the lake. The habits of this fish as determined by studies in other waters indicate that it is capable of becoming a serious competitor for food to the other fishes in Lake Mendota. More information on schooling behavior, distribution and movements will permit better management of this species in the future and permit better utilization of an acceptable sport fish.

4. **Study of the Movements and Concentrations of Yellow Perch.**

For many years, studies of the migration patterns and concentrations of yellow perch have been conducted in Lake Mendota using equipment furnished by the Office of Naval Research. Expensive echo-sounding gear and a large boat have made the studies possible to an extent heretofore impractical. The public interest in this large fishery makes it imperative that detailed knowledge of the habits of this fish be known. These studies have aided in the exploitation of yellow perch to the benefit of sport anglers. The present abundance of this fish permits the development of echo-sounding equipment to be useful in the location and interpretation of underwater objects.

5. Reactions of fishes to conventional and experimental fishing gear. Preliminary experiments have indicated that certain fish are attracted to others of the same species only when no outline-breaking obstructions intervene. Experiments are being conducted to determine whether fishes can see another fish through various sizes of net meshes and whether this would be an aid to the development of more efficient trapping gear. Electrofishing methods are being tested and evaluated for lake use. This is aimed toward the development of more efficient rough fish control gear to control carp populations.

Research Advisory and Steering Committees

During the biennium, the department announced the appointment of a joint Research Advisory and Steering Committee to assist the director and conservation commission in reviewing and formulating all research programs conducted or sponsored by the department. Members of the Research Advisory Committee and their terms of office are as follows:

6-year terms

Prof. Fred G. Wilson, Michigan Coll. Mining and Tech.
Prof. Arthur D. Hasler, Dept. of Zoology, Univ. of Wisconsin

4-year terms

Prof. Robert A. McCabe, Dept. of Wildlife Man., Univ. of Wisconsin
Fred B. Trenk, Coll. of Agri., Univ. of Wisconsin

2-year terms

Dr. Alfred Hall, Director, U. S. Forest Products Lab.
William DeYoung, Wis. State Soils Scientist, U. S. Soil Cons. Serv.

The Research Steering Committee is made up of three members of the Conservation Department representing the divisions of Fish Management, Forestry and Parks and Game Management. Initial appointments were announced as follows:

Edwin L. Cooper, Chief Fishery Biologist
William H. Brener, Ass't Supt., Forestry & Parks
Cyril Kabat, Chief of Wildlife Research

The responsibilities of these committees as discussed at the organizational meeting are as follows:

I. The heads of divisions within the Conservation Department are responsible for the planning, budgets and supervision of research activities conducted by department personnel.

II. The Research Steering Committee is advisory to the commission with one representative from each of the divisions of Fish Management, Forest and Parks, and Game Management. Duties will include the following:

A. Receive outlines of suggested research projects, review them in the light of the total program and recommend to the Research Advisory Committee whether they should be conducted by the department or referred to educational institutions as being fundamental in nature.

B. Summarize and report to the Research Advisory Committee annually research activities conducted by department personnel with an evaluation of the program. This report will be transmitted to the commission with the comments and recommendations of the Research Advisory Committee.

III. The Research Advisory Committee is advisory to the commission with 6 members appointed by the director of conservation. In all joint meetings the members of the Research Steering Committee will take a voting part. The chairman of the Research Advisory Committee will also be chairman of the joint committee. Duties of this committee will include the following:

A. Review the recommendations of the steering committee concerning outlines of suggested new projects and recommend disposition of such projects (Refer to II, A).

B. Review annually the research program of the department as reported by the various divisions concerned and make recommendations concerning this program to the commission (Refer to II, B).

C. Evaluate non-department research conducted by educational institutions under department sponsorship. Recommend future action on these projects to the commission.

D. Make such other recommendations concerning research activities of the department as deemed desirable and appropriate.

IV. The Executive Secretary shall keep the minutes of both committees, distribute reports of research projects and otherwise expedite the business of both committees.

Habitat Improvement

While this is a recently enacted program and still in its infancy, it has become very popular and has very hearty support from the public. It is recognized more and more that if proper habitat is lacking for fish and game, all other programs are of very little value. Furthermore the approach

to the habitat improvement program is through the landowner, who in turn receives many benefits of lasting value.

This is a tremendously big undertaking if it is to be done properly. It is too big for the division and in fact it goes far beyond the scope of the entire conservation department. Therefore, cooperation with many local, county, state and federal agencies is necessary and all have to work as a team. It is a pleasure to report that in every instance the cooperation from all other groups has been most excellent. It is also encouraging to note that the legislature has become deeply interested in this movement and has been studying ways and means to provide additional funds and implement method of coordination of activities of the various agencies.

The habitat improvement program of the division has remained at approximately the same expenditure level as the last year of the last biennium. Most of the activity is financed by Dingell–Johnson federal aid funds.

The department interests in watershed management are seven-fold. They are:

1. To work as part of a team in community watershed program.
2. To control run-off water at its first contact with the land.
3. To stabilize lake levels and sustain ground-water supplies.
4. To protect, maintain, or re-establish lake shore and stream side cover.
5. To maintain reasonable public access to lakes and streams through encouragement of good relationships with the landowners and purchase or lease where necessary.
6. To encourage full development of grasslands, forest lands and farm woodlands as protective and sustained yield areas within watersheds.
7. To maintain and improve lake and stream habitats for fish life and both wild and crop lands for game through proven and accepted management practices.

During the biennium a "Memorandum of Understanding" was executed with local Soil Conservation Districts. In addition, a "statement of Watershed Development Cooperation" was approved and signed between the Conservation Department, State Soil Conservation Committee, University Agricultural Extension Service and the U. S. Soil Conservation Service. The agreement sets forth the specific forms of cooperation to be provided by each agency.

The watershed approach of encouraging the formation of watershed associations has resulted in thirty-six organized watersheds functioning at present. The department is demonstrating various watershed procedures on fifteen watersheds. Cooperative projects are being conducted with fifty-five organized clubs and civic groups. Approximately 77 miles of stream protective zone has been acquired and is now under state control. Trees were planted as one important phase of the watershed activity and during the biennium there were planted 768,609 trees and 76,125 shrubs.

The increased regional interest created by the project activities has resulted in an increase in the number of cooperators requesting conservation farm plans and placing plans in operation. There has been a sharp increase in interest and activity by organized cooperative groups. Boy

SUMMARY OF HABITAT PROJECTS AND ACCOMPLISHMENTS. EXPENDITURES ARE SHOWN TO JULY 1, 1954
WISCONSIN CONSERVATION DEPARTMENT

Dingell–Johnson—State Demonstration Watersheds

Purpose: Provide food, cover, spawning grounds, improved water quality for fish. Reduce siltation. Protect waterway zone from erosion and develop game habitat in zone. Protect upland areas with tree and shrub plantings. Protect and develop springheads. Plan and develop areas cooperatively with other state, federal and local agencies.

Watershed—County	*Acres Leased (*) Owned (**)*	*Length of Waterway Controlled (Rods)*	*Trees Planted*	*Shrubs Planted*	*Fencing (Rods)*	*Channel and Bank Devices*	*Total Expenditures to 7/1/54*
AREA I							
Weirgor River Sawyer County	1,819.78**	2,600	130,000	3,000		437	$ 18,072
Devils Creek Rusk County	139* 80**	810	16,000	2,000	2,400	45	16,825
Beaver Brook Washburn County	789**	1,600	8,000	5,000		132	4,821
Sand Creek Chippewa County	In process—watershed association formed and survey made.						
Whittlesey Creek Bayfield County	In process—to be pilot watershed on Lake Superior drainage. Watershed association formed and surveys made.						
Squaw Creek Barrier Sawyer County	Easement (Northern pike barrier on Squaw Creek)						
AREA II							
So. Br. Oconto River Oconto County	635*	3,076	241,816		3,269	9	28,774
Prairie River Lincoln County	105*	2,687	59,079	800	3,738	77	40,074
Plover River Marathon County	331* 140**	1,518	19,465		2,031	48	23,612
AREA III							
Kinnickinnic River Pierce County	276.09*	3,849	45,720	2,500	5,442	106	32,970
Bohemian Valley Watershed Vernon County La Crosse County	In process—watershed association formed and surveys made.						

SUMMARY OF HABITAT PROJECTS AND ACCOMPLISHMENTS. EXPENDITURES ARE SHOWN TO JULY 1, 1954 —Continued

Watershed—County	*Acres Leased (*) Owned (**)*	*Length of Waterway Controlled (Rods)*	*Trees Planted*	*Shrubs Planted*	*Fencing (Rods)*	*Channel and Bank Devices*	*Total Expenditures to 7/1/54*
AREA IV							
Willow Creek	73.19*						
Waushara County	53.35**	3,053	76,724	10,040	1,974	1,093	$28,419
Radley Creek	5*	132	22,510	1,700	185	22	2,575
Waupaca County							
Peterson Creek	49.58*	1,708	5,000	2,620	832	717	11,989
Waupaca County							
AREA V							
Black Earth Creek	62.48*						
Dane County	3.9**	2,562	222,400	65,295	4,030	100	50,375
Dell Creek	98.22*	915	502,700	27,700	2,143	27	27,186
Sauk and Juneau Counties							
TOTALS	1,774.56* 2,886.03**	24,510 77 miles	1,349,414	120,655	26,044 81.4 miles	2,813	$285,692

WISCONSIN CONSERVATION DEPARTMENT COOPERATIVE HABITAT DEVELOPMENT

Stream—County	*Cooperators*	*Department Assistance*	*Major Activity*
AREA I			
Elk Creek Chippewa County	Eau Claire Rod and Gun and Chippewa Falls Rod and Gun Clubs	Planning, program direction, materials	Fencing leased areas
N. Fork Trade River Polk County	Frederic Rod and Gun Club	Planning, program direction	Fencing leased areas, tree planting
Osceola Creek Polk County	Osceola Rod and Gun Club	Planning, program direction, minor materials	Fencing leased areas, tree planting
Bearsdale Springs Bayfield County	Eau Claire Lakes Improvement Association, Federal Forest Service	Planning, program direction, equipment	Stabilize outlet
Butternut Creek Barrier Price County	Park Falls Rod and Gun Club	Planning, supervision	Barrier to northern pike migration
Augustine Creek Ashland County	Glidden Chamber of Commerce, Boy Scouts	Planning, program direction	Stabilize waterway
Dogtown Creek Burnett County	Dogtown Creek Rod and Gun Club (in process)	Planning, program direction	Stabilize waterway and barrier to northern pike
Peterson Creek Polk County	Amery Conservation Club (in process)	Planning, program direction	Stabilize waterway
AREA II			
Prairie River Lincoln County	Prairie River Rod and Gun Club	Planning, program direction, materials	Fencing leased areas, cover restoration
Four Mile Creek Marathon County	Mosinee Sportsman's Club	Planning, program direction	Fencing leased areas, cover restoration, channel development
N. Branch Oconto River Forest County	Nicolet Sportsmen's Club, Wabeno	Planning, program direction, minor materials	Fencing leased areas, cover restoration, channel development, children's fishing area
Woodboro Springs Oneida County	Hodag Sports Club, Rhinelander	Planning, program direction, share equipment rental	Silt removal, cover restoration
N. Branch Pike River Marinette County	Amberg Rod and Gun Club, Marinette County Board	Planning, program direction	Access, channel development
Dent Creek Shawano County	Town of Morris Fish and Game Club	Planning, program direction	Fencing leased areas, cover restoration, creel census
Peshtigo River Feeders Forest County	Laona Boy Scout Troop	Planning, program direction, beaver control	Beaver dam removal, cover restoration
Pecor Brook Oconto County	Oconto County Alliance and Oconto County Board	Planning, program direction	Fencing leased areas, cover restoration
Deerskin River Vilas County	Eagle River Sportsmen's Club	Planning, program direction	Beaver control, cover restoration, migration barriers
Sportsmen's Lake Shawano County	Farmers Sportsmen's Club, Birnamwood	Planning, program direction	Fencing leased areas, silt removal, cover restoration, channel development
Three Lakes Chain Oneida County	Three Lakes Sportsmen's Club	Planning, program direction	Lake improvement devices as panfish concentrators
Spring Lake Lincoln County	Lincoln County Sports Club, Merrill	Planning	Spring pond development

WISCONSIN CONSERVATION DEPARTMENT COOPERATIVE HABITAT DEVELOPMENT—Continued

Stream—County	*Cooperators*	*Department Assistance*	*Major Activity*
N. Branch Oconto River—Oconto County	Mountain Sportsmen's Club	Planning	Fencing leased areas, cover restoration
Nine Mile Creek—Langlade County	Wolf River Conservation Club, Hollister	Planning	Beaver dam removal, fence construction
Red River Feeder—Shawano County	Future Farmers of America, Gresham	Planning	Fence construction, channel development
E. Branch Lily River—Langlade County	Whitetail Sportmen's Club, Lily	Planning	Channel development, beaver dam removal
Little Popple River—Florence County	Aurora Sportsmen's Club	Planning	Fence construction, channel development, cover restoration
AREA III			
Little Waumandee Creek—Buffalo County	Lincoln Rod and Gun Club	Planning, program direction	Fencing, cover restoration, tree planting
Trout Creek—Buffalo County	Nelson Rod and Gun Club	Planning, program direction	Fencing, cover restoration
E. Branch Trout Run Creek—Jackson County	Black River Falls Sportsmen's Club	Planning, program direction	Fencing protective areas, cover restoration
Rush River—Pierce County	New Martel Rod and Gun Club	Planning, program direction	Fencing protective zone, tree planting
Heiser Creek—Monroe County	Cashton Rod and Gun Club	Planning, program direction	Cover restoration
Risk Creek—Adams County	Adams and Friendship Chambers of Commerce	Planning, program direction	Planning
Five Mile Creek—Wood County	Heart of Wisconsin Conservation League	Planning, program direction	Cover restoration
Eighteen Mile Creek—Dunn County	Colfax Rod and Gun Club	Planning, program direction	Fencing leased areas, cover restoration
Gilbert Creek—Dunn County	Menomonie Rod and Gun Club, Dunn County Fish and Game Assoc.	Planning, program direction	Fencing, cover restoration
Adams Creek—Trempealeau County	Eleva Rod and Gun Club	Planning, program direction	Cover restoration
Pine Creek—Crawford County	Crawford County Sportsmen's League	Planning, program direction	Planning, fencing, tree planting
Tomah Lake—Monroe County	U. S. Fish and Wildlife Service	Planning, direction and installations	Brush device to concentrate fish for veterans at Veteran Hospital
National Cons. Field Day—Eau Claire County	Federal, State, Local Agencies	Planning, construction, demonstration	Demonstration of developments
AREA IV			
Crystal Creek—Dodge County	Beaver Dam Lake Fishermen's Club, Waupun Prison	Planning, program direction	Fencing protective areas, tree planting and device installation
Upper Tomorrow River—Portage County	Portage County Izaak Walton League and Boy Scout Troop	Planning, program direction	Cover restoration, device installation and fencing

WISCONSIN CONSERVATION DEPARTMENT COOPERATIVE HABITAT DEVELOPMENT—Continued

Stream—County	*Cooperators*	*Department Assistance*	*Major Activity*
AREA IV-continued			
Daken Creek Green Lake County	Green Lake Conservation Club	Planning	Planning, fencing
Little Plover River Portage County	Plover Fish and Wildlife League	Planning, program direction	Cover restoration
Millhome and Cedar Creeks Manitowoc County	Kiel Conservation Club	Planning, program direction	Habitat development
Howard Creek Portage County	Stevens Point Teachers College	Planning	Used as conservation field classroom
Hollow Creek Brown County	Izaak Walton League Chapter, Green Bay	Planning	Development and habitat restoration
White River Waushara County	Wautoma Boy Scouts	Planning, program direction	Development and cover restoration
White Creek Green Lake County	Four Lakes Council Boy Scouts, Madison	Planning, program direction	Habitat restoration
AREA V			
Cronin Creek Rock County	Janesville Conservation Club	Planning, program direction, and planting-stock	Cover restoration and general development
Day's Branch Creek Grant County	Lancaster Conservation Club	Planning, program direction, planting-stock, percentage of fence material	Fencing and cover restoration
Otter Creek Sauk	Baraboo Rod and Gun Club	Planning, program direction, fencing material	Fencing and pool establishment
Morrey Creek Iowa County	Avoca Rod and Gun Club	Planning, shrub stock	Promote watershed association and stream cover restoration
Tipperary Creek Dane County	Dane County Sportsmen's League	Planning, program direction, shrub stock	Cover restoration and channel development
S. Branch Crawfish River Columbia County	Columbus Conservation Club	Planning, program direction, shrub stock	Promote watershed association and stream cover restoration
Yellowstone Lake Lafayette and Iowa Counties	Watershed Association Cooperation	Planning, investigations, promotion of watershed association	Planning investigations
Lake Koshkonong Jefferson, Dane, and Rock Counties	Other divisions and agencies cooperation	Integration of development plans	Investigations and promotion of programs
Token Creek Dane County	Dane County Sportsmen's League cooperation	Investigations, evaluations, development plans	Planning and investigations for development

scout and school groups are increasing activity. Landowners are gradually coming to the viewpoint of thinking of their land as a unit within a larger watershed unit.

A summary of projects is shown in the accompanying table. It lists the accomplishments on each project and funds expended to July 1, 1954. It also lists projects carried out in cooperation with conservation clubs and other civic organizations.

Although detailed evaluation of the success of improved streams has not been completed there are many reports from anglers that testify that better trout fishing has resulted from the improvement. The outstanding of these are on the Weirgor in the northwestern part of the state and the Willow River in the east central area.

Wisconsin Trout Policy

During the biennium a controversy arose over the stocking of trout. Public hearings were held at Madison, Oshkosh, Black River Falls, Hayward and Antigo. A brochure was presented outlining the findings of research regarding trout stocking, the need for habitat improvement and protection, a suggested program and policy. As the first furors receded the public gradually recognized that the stocking phase of the trout management program had been overemphasized and not enough emphasis placed on habitat and research. However, there are still some persons that do not wish any reduction of the numbers of trout stocked in their area.

The Wisconsin trout policy was adopted by the conservation commission early in 1954. The highlights of the policy are that habitat and research are to receive more attention, the harvest regulated to insure continuing stocks, efforts be made to improve the quality of the hatchery product, and only legal-sized trout be stocked in streams where the most possible return be obtained.

Considerable progress was made in reducing the cost per pound of legal-size trout produced during the biennium. This was accomplished by the use of a pellet-type food. The advantages of the pellet diet are: A well-balanced diet is supplied resulting in much faster growth, purchase price is lower, food can be stored without refrigeration, no preliminary preparation before feeding is necessary, and there is practically no waste in feeding. The cost per pound of legal-size fish reared was reduced from $1.15 in 1953 to approximately $0.71 per pound in 1954. Further savings in costs are anticipated in the future.

Experimental work on the use of automatic pellet feeding devices is in progress. These are similar to those used in poultry husbandry. The feeder is operated by a time clock and definite amounts of food are released to the raceways on a given schedule. It is believed that this system, when perfected, will not only reduce labor costs but will also result in better feeding technique as the fish can be fed more frequently but smaller amounts which should result in a better ratio of conversion of food fed.

The present conversion ratio of pellets is slightly less than 2 pounds food to produce a pound of trout while the older diets needed 5 to 7 pounds of food to produce a pound of trout.

Fishery Operations

Fish propagation and distribution, lake rehabilitation and survey, construction and repair and maintenance are discussed under this category.

With reference to fish propagation, the propagation and maintenance stocking of black bass was discontinued as it was learned that not only are these species able to naturally reproduce themselves adequately, but also that in many waters the populations are underharvested.

Yellow walleyes and muskellunge are stocked only as fingerlings which are reared in ponds. Emphasis is placed on quality rather than quantity and this naturally reduces the numbers of fingerlings produced but they are of much larger size. The total pounds of muskellunge produced was increased from 1484.6 pounds in 1953 to 3004.65 in 1954. It is reasoned that the larger sizes have a much better chance of survival than the smaller fish and therefore even if fewer numbers are produced, the final results are more positive. In addition, it is not considered justifiable to stock warm-water species for maintenance of population if there are spawning facilities available. The principal benefits of stocking are in cases of a natural mortality or in cases of unbalanced populations.

Annual reports on the numbers of fishes of various species propagated and stocked are prepared and therefore these data are not incorporated in this report as they are very voluminous.

Fish management practices change as newer facts are found and different needs arise. A decade ago fish management operations were almost entirely devoted to propagation and stocking efforts. Currently, personnel assigned to the operation's section perform a greater variety of tasks including assistance in population surveys and lake rehabilitation projects.

One of the newer techniques in conducting population surveys involves the use of small mesh seines measuring one to two thousand feet in length. Use of this gear in most instances provides a more adequate sample of the population present and fishes of all sizes can be caught. This gives a better idea of the harvestable crop present as well as the immature crop of game and panfishes and rough fish in the standing population. The test hauls are usually witnessed by many people and as a result they can often see for themselves that the fish populations are in much better condition than they previously supposed. The use of skin diving equipment and "frog man" suits is being developed and promises to provide additional methods of solving some of the underwater unknowns.

Lake rehabilitation consists of the removal of the entire fish population in a lake and then restocking it with a more desirable species or combination of species. In most instances, trout lakes have been developed in this manner although several warm-water lakes have been improved in this manner. The lakes are first carefully surveyed and analyzed and if they are in an unproductive state, renovation is recommended. If conditions are suitable, they are converted to trout lakes, otherwise a combination of warm-water species is considered. These are usually the smaller size lakes because of the expense involved. Rotenone is applied to kill off the fishes present. After the toxicant has dissipated the new fishes are introduced. The following is a list of lakes so converted during the biennium:

Lake	*County*	*Size*	*Species*
Stewart	Dane		Rainbow trout
Salmo	Dane	1	Rainbow trout
Merrillan Pond (electric shocker only)	Jackson	35	N. Pike, LM Bass and Bluegills
Cambria Mill Pond	Columbia	38	Bass and Panfish
Yellowstone	LaFayette	400	Y. Walleyes, large and small-mouth bass
Tozer	Washburn		Rainbow trout
Marshfield Pond	Wood	7.2	N. Pike, LM Bass, Bluegills
Hooper's Mill Pond	Jefferson	20	LM Bass
Sunset Lake	Portage	67	Rainbow trout
Sportsman's Lake	Shawano	2	Brook trout
Potters	Walworth	160	N. Pike, LM Bass, Bluegills

Much of the repair and maintenance activity is done by the operation's section with only the larger or more specialized projects being let out on contract. Raceway and pond repair, bulkhead construction, minor repairs to buildings, repair and maintenance of equipment such as vehicles and fishing gear are examples of routine maintenance carried on by division employees. Roof replacements, heating plant installations, cold storage plant installation and repair, and the larger construction projects are examples of the contract jobs.

Rough Fish Control

Major rough fish control activities are centered at four stations which are, Newville, Kegonsa, Horicon and Fond du Lac. The number of stations had previously been reduced in order to provide more concentrated and efficient effort than to have activities scattered to many more camps. Administrative and supervision costs are greatly reduced and a more economical and efficient operation is assured.

Carp and sheepshead are the principal species of rough fish that are removed from various waters to control populations. Sheepshead are found mostly in Lake Winnebago and a concerted effort is being made to greatly increase the harvest of them. New equipment in the form of new trap nets rather than the old style hoop nets is found to be more effective. A modern steel boat with specialized equipment was purchased to use in this work. In addition, several individuals were given contracts to assist in the sheepshead removal effort. The goal is to remove at least 2 million pounds annually. Previous activities removed only about ½ million pounds annually. Although the Lake Winnebago sheepshead are of inferior quality they do bring a fairly good market price during the winter months. However, the market is very poor during the summer months and about the only market is to mink farmers so the price is quite low.

The market prices on practically all fresh-water fishes have been poor during the past two years, even though there has been a shortage of such better fishes as yellow perch. A logical explanation of this condition is not evident especially since in the past, supply had a very definite effect on the price. Ordinarily, the conservation commission receives 10% of the proceeds of the sale of rough fish caught by contractors to defray supervision costs. It is believed that private enterprise in rough fish removal is a valuable asset to the state. Consequently, the fish management division does not wish to place any unnecessary barriers in the way of contractors in rough fish removal. Therefore, the division recommended that in the

matter of commissions a reduction of fees be made. The policy was therefore revised and now if rough fish are sold for 3¢ per pound or less, no commission is charged and this makes it possible for the contractors to continue some removal operations during periods of poor market conditions without suffering financial loss.

In Lake Koshkonong, the public objected very strenuously to contractors being permitted to operate. Although sincere efforts were made to ameliorate the feelings, it was necessary to cancel all contracts and conduct the effort with state crews to settle a bitter and growing controversy. Public relations have been very good since that time.

An annual report of rough fish removed from the inland waters by both state and contract crews is available. Therefore, these statistics are not included in this report but are available to anyone desiring them.

Previous to the reduction of the number of rough fish camps to four stations, the camps were characterized by a cluster of small portable type buildings and much disreputable appearing equipment. Much progress has been made in correcting this condition and with the purchase of three six-stall garages, vehicles and other equipment can be more properly stored and not be exposed to the ravages of the weather.

GREAT LAKES FISHERIES

Records and Statistics

The compilation of statistics on the commercial catch of fish from the Wisconsin waters of Green Bay, Lake Michigan and Lake Superior is one of the major functions of this activity. These records are used by both the U. S. Fish and Wildlife Service and the Wisconsin Conservation Department in deciding upon fish management practices to be used in the Great Lakes. This work has been carried on in the same manner since 1936 and valuable information as to changing population and trends of fishing has resulted.

The total catch of all species of fish taken from the Wisconsin waters of the Great Lakes by commercial fishermen is as follows:

1952

	Pounds	*Value*
Lake Superior	6,681,374	$ 562,224.78
Lake Michigan	14,932,336	1,687,203.16
Total	21,613,710	$2,249,427.94

1953

	Pounds	*Value*
Lake Superior	6,105,594	$ 524,269.56
Lake Michigan	14,386,302	1,408,301.14
Total	20,491,896	$1,932,570.70

Lamprey Control

Lamprey control devices were operated in both 1953 and 1954 in three streams in Door, Kewaunee and Manitowoc Counties. The following table shows the catch for each stream:

	1953	1954
Hibbards Creek (Door County)	9,247	7,279
Kewaunee River (Kewaunee County)	4,008	4,159
East Twin River (Manitowoc County)	16,091	6,960
Total	29,346	18,398

It should be noted that the smaller catch does not in any way indicate that there is a decrease in the population of this predator in Lake Michigan. High water caused by frequent rains made it impossible to keep the lamprey traps in continuous operation throughout this season. This problem will be overcome in the future by the installation of electric traps in cooperation with the U. S. Fish and Wildlife Service.

Investigations

During this period, several controversial issues were investigated and recommendations were made which resulted in changes in the commercial fishing regulations. The changes covered such items as: allowing the use of drop nets during the ice fishing season on Green Bay, the abolishment of the closed season on chubs in Lake Michigan, taking the Sebago Salmon (Brown Trout) off the commercial fishing list, and several other items of lesser importance. With good fish management practices in mind, several studies are now being carried on which may result in regulation changes concerning the size limits of whitefish and the harvesting of the large Brown Trout in Lake Superior.

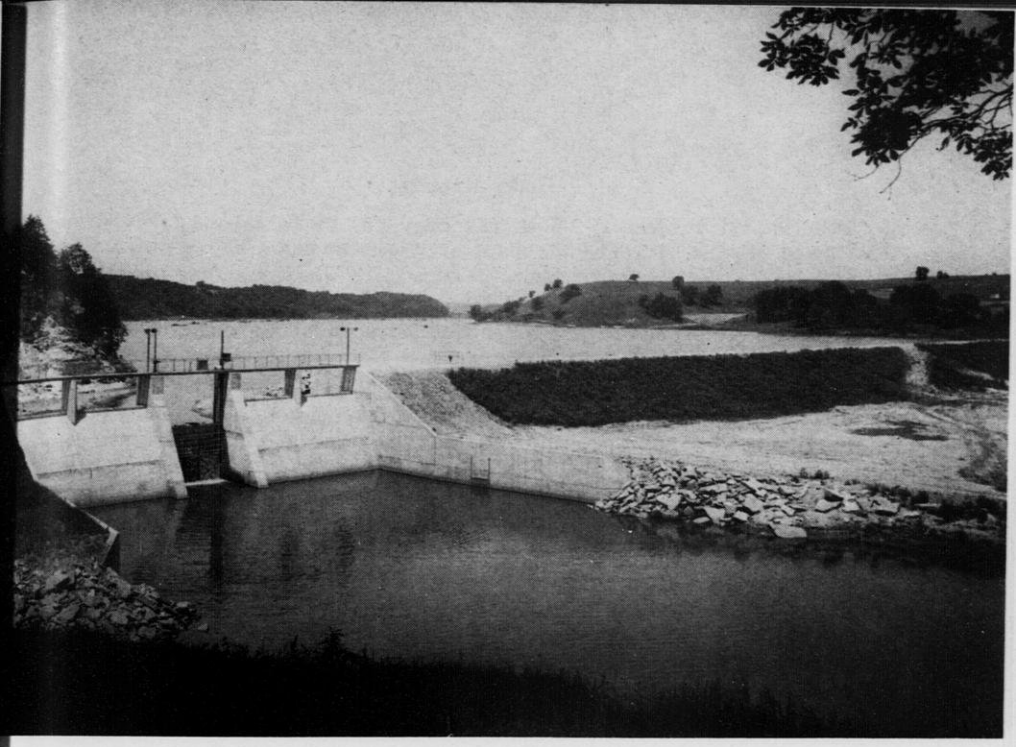
National Conventions

In 1953, it was Wisconsin's privilege and honor to be the host to the annual meeting of the American Fisheries Society and the International Association of Game, Fish and Conservation Commissioners. The convention was held in Milwaukee September 14 to 18, 1953. It was the responsibility of the fish management division to arrange the technical program for the American Fisheries Society and a joint field trip for members of both organizations. The field trip included inspections of Horicon Marsh, the State Game Farm, Nevin Hatchery and an underwater television demonsrtation. The field trip was highlighted by a "Famous Great Lakes Fish Boil" as an outdoor luncheon. This was prepared and served by fish management division and law enforcement division personnel (at no cost to the state).

Subsequent report on the meeting was that it was the best attended, most informative and most efficiently arranged conference in the history of the two organizations with the spirit of "Gemutlichkeit" ever present throughout the entire conference.

Yellowstone Lake

During the biennium construction of Yellowstone Lake was completed and the structure dedicated September 1954. This new lake is a 400-acre flowage constructed by damming the Yellowstone River near Argyle in La Fayette County. It was built in a part of southwestern Wisconsin that is devoid of lakes, ponds or flowages and is expected to provide recreation



The new Yellowstone lake and dam, Lafayette county.

to hundreds of thousands of people. The construction was financed by Pittman–Robertson and Dingell-Johnson Federal Aid Funds.

The management of the fishery is, of course, the responsibility of the fish management division, whose experience with fish populations in flowages is very limited. It was therefore necessary to plan the program carefully and also to consider the management on an experimental basis. The first step was to remove the existing population as completely as possible so that undesirable fishes were eliminated. A total of 3,639 pounds of fish was removed from the water supply before the flowage was flooded. Sixteen species were represented with white suckers comprising 61 percent. Game fish included smallmouth bass, brown trout and channel catfish. Since panfishes are very prolific and soon develop an overcrowded condition, it was deemed desirable to first establish populations of predatory species. Therefore, during the summer of 1954, 133,500 yellow walleyes, 138,400 largemouth bass, and 14,056 smallmouth bass were stocked. These fish ranged from 2 to 6 inches in size. By October 1954, the fish had demonstrated phenomenal growth, the yellow walleyes averaged 9.3″, and largemouth bass 5.8 inches.

It is also planned to use this body of water for the testing of certain liberalizations of the fishing regulations, with a continuous open season on all species and no size or bag limits applying. Anglers will be permitted to fish only with hook and line and will be required to file a census report in boxes at the boat landings at the end of each fishing trip.

A photograph of the dam and major portion of the flowage is attached.

Lake Mapping

Federal Aid Project F–2–R–1 (January 13, 1954–June 30, 1953) was set up to provide hydrographic maps of Wisconsin lakes along with access points and other pertinent shore features. It was in actual operations through the ice for two and one-half months and covered 7,012 acres at a cost of 41 cents per surface acre. Equipment used on this project was experimental.

Project F–2–R–2 (January 4, 1954–June 30, 1954) succeeded the above project and with the same purpose in mind covered a total of 14,862 acres through the ice. Different equipment was used and a cost of 39 cents per surface acre was realized.

The above project was in turn followed by Project F–2–R–3 (July 1, 1954–June 30, 1955) and is still in operation. During the first three months of field work, 276 hours were spent to map a total of 18,966 acres at a cost of 13 cents per surface acre. Present equipment consists of an electronic echo sounder mounted in a 16 foot boat for summer mapping. Winter proceedings for this year will follow the method used in Project F–2–R–2.

Future outlooks for this project are bright as more emphasis will be placed on summer mapping techniques. It is a much more efficient and accurate method than any employed heretofore.

It is believed that considerable progress has been made in putting modern and sound fish management techniques into practice, and the discarding of obsolete and disproven practices. It is not a simple or easy matter to accomplish. Old beliefs and prejudices must be recognized. The public acceptance of practically every move must be weighed in order that unfavorable public relations are not created.

Even though considerable progress has been made, there is still a large amount of work to do if the state's fishery resources are to be managed to the fullest of their productivity and the maximum benefits obtained. To accomplish this goal much more research is needed as sound management practices must be based on fact and not on whims or desires of a few. Hand in hand with the desperate need for reasearch is a crying need for more and better conservation education. The people must accept and understand new programs before they can proceed and be successful. Therefore, conservation education for both adults and juveniles is a very badly needed activity that should be expanded. If further progress is to be made in the application of sound management practices, there simply must be more research and more conservation education. Industry and public health recognize the importance of research and both are readily accepted by the public. Unfortunately, however, sportsmen have not accepted fish and wildlife research as a useful and extremely necessary tool, hence the need for more conservation education.

In conclusion, it is recommended that in all future budget planning, priority be given to the following items: research, education, habitat protection and improvement and renovation of certain existing properties and stations.

Game Management

The game management division was established in 1928. Its reorganization was effected in 1949–50 when five administrative areas were created. A game coordinator assumes direct supervision and virtually complete freedom of action in each area in field management situations. He is assisted by district game managers whose zones of field activities are on a county basis. The purpose of decentralization has been realized in providing a closer contact with the public and more efficient handling of local wildlife problems and projects.

GENERAL GAME ADMINISTRATION

The game management division has grown constantly in field activities as a result of increased demand for services. Game management disbursements totaled more than two million dollars during the biennium. Important management functions include general game administration; hunting and trapping regulations; all propagation and stocking; exhibits; land lease and purchase; surveys and investigations; winter feeding; the administration, maintenance, and development of refuges and public hunting grounds; the administration of commercial game, deer, and fur farms, and licensed shooting preserves; the preparation of game and trapping season reports and publications; all game research; and miscellaneous game projects and services.

The game division now has 163 permanent employees, including 21 district game managers operating in all sections of the state.

GAME REGULATIONS

By authority conferred upon it by the 1933 legislature, the Wisconsin Conservation Commission continues to regulate open and closed seasons on all species of game and fur-bearing animals as provided by law. The increased hunting pressure has reached a peak where many theories of game management are now undergoing revision to meet the ever-changing conditions. Department game technicians, managers, and research men, make a thorough survey of game conditions throughout the state in order that proper game seasons and regulations may be adopted. Game field personnel work closely with the conservation congress and study committees by providing current and new ideas, developments, and trends in game manage-

ment activities. Before establishing seasons, 71 county fish and game hearings are held for the express purpose of giving the public an opportunity to present their opinions and recommendations.

PUBLIC HUNTING AND FISHING GROUNDS

The public hunting grounds program continues to be in the process of expansion, since it is the responsibility of game managers to provide by lease, grant, or purchase, public hunting and fishing grounds areas which will serve all of the people, and to apply practical and sound wildlife management practices on the lands acquired. Occasionally, right of ways to lakes and streams have been secured. It has also been the practice to purchase excellent wildlife habitat to save it from destruction by private interests. Public hunting grounds are improved annually—trees and shrubs are planted for watershed control and for wildlife food and cover. Waterfowl areas are improved by the installation of dikes and other water control structures. Other activities on lands, whether leased or purchased, are the stocking of pheasants and other game, winter feeding, and fire protection.

Land Purchases in Twenty-Two Counties Were As Follows:

Year	*Acreage*	*Cost*	*No. of Areas*
1952–53	5,687	$ 36,652.15	42
1953–54	3,624	64,035.97	65
Total	9,311	$100,688.12	107

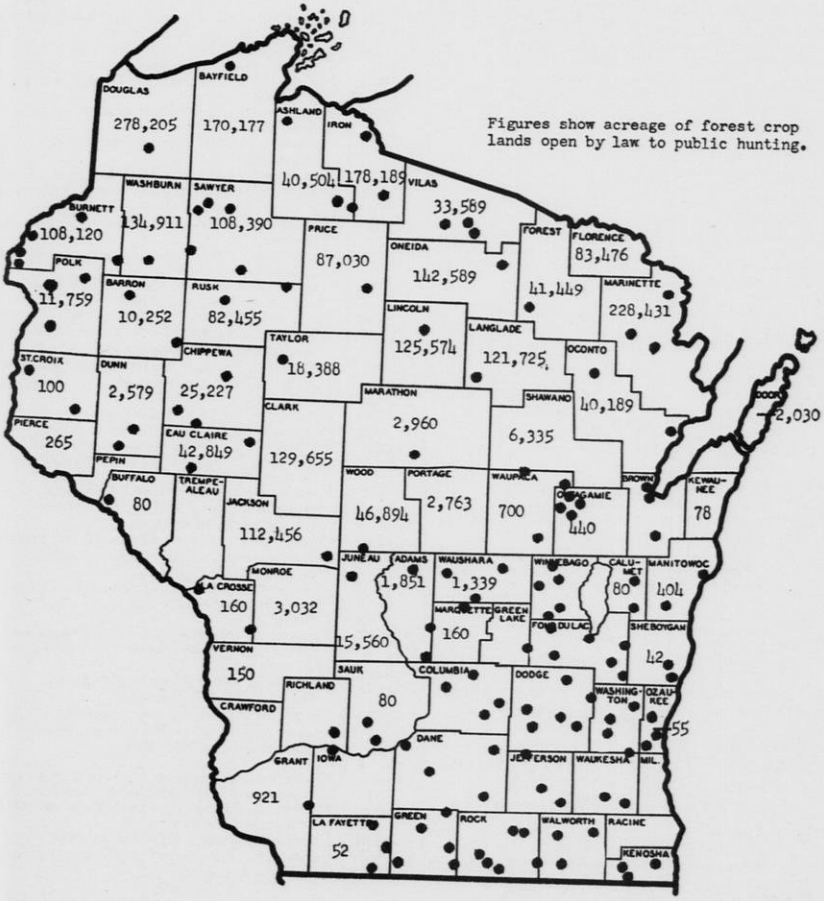
Some of the larger hunting areas purchased were Peshtigo Brook (Oconto county), Eldorado (Fond du Lac county), Little Rice (Forest county), Thunder Lake (Oneida county), Crex Meadows (Burnett county), Pine Island (Sauk county), and Tiffany (Buffalo county).

Public Hunting Grounds in Operation Each Year

Year	*Areas*	*Acreage*
1938	1	1,280
1939	2	21,120
1940	4	24,614
1941	4	25,971
1942	8	31,309
1943	11	32,699
1944	23	58,454
1945	31	63,959
1946	50	145,516
1947	63	192,561
1948	71	224,407
1949	100	283,483
1950	105	293,647
1951	110	402,097
1952	116	429,048
1953	123	429,346

PUBLIC HUNTING AND FISHING GROUNDS

As of June 30, 1954



PUBLIC HUNTING AND FISHING GROUNDS AS OF JUNE 30, 1954

County	*Name*	*Acreage*	*Game Species Prominent*
Adams	Big Spring	2,005	Pheasant, rabbits.
	Colburn	4,374	Ruffed grouse, deer, rabbits & ducks
Ashland	Hoffman Lake	5,561	Deer, ruffed grouse, woodcock & snowshoe hare.
	White River	960	Deer, ruffed grouse, woodcock & snowshoe hare.
Barron	Little Granite Lake R.O.W.	3	
	New Auburn	525	Pheasants, ruffed grouse, woodcock, ducks, rabbits, beaver & muskrats.
Bayfield	Flag River	560	Trout fishing, deer, ruffed grouse, woodcock & snowshoe hare.
Brown	Holland	1,008	Pheasants, Hungarian partridge, rabbits & ruffed grouse.
	Sensiba	450	Pheasants, ducks, ruffed grouse, rabbits, & squirrels.
	Suamico	874	Pheasants, ruffed grouse, rabbits & squirrels.
Buffalo	Tiffany	7,377	Waterfowl, deer, squirrels & ruffed grouse.
Burnett	Crex Meadows	17,843	Waterfowl, ruffed grouse, sharp-tail grouse & deer.
	Fish Lake	5,305	Waterfowl, sharp-tail grouse, ruffed grouse & deer.
	Kiezer Lake	1,329	Waterfowl, ruffed grouse, deer, rabbits & squirrels.
	Kohler-Peet	3,329	Deer, ruffed grouse, sharptail grouse, snowshoe hare & fishing.
	Sand Creek	286	Deer, ruffed grouse & fishing.
Calumet	Brillion	7,440	Pheasants, Hungarian partridge, rabbits, ducks, raccoon & squirrels.
	New Holstein	1,345	Pheasants, Hungarian partridge, rabbits, raccoon, and squirrels.
Chippewa	Elk Creek	53	Fishing.
	Hallie	1,720	Pheasants, rabbits, ruffed grouse.
	Jim Falls	2,306	Pheasants, rabbits, & ruffed grouse.
Columbia	French's Creek	3,186	Pheasants, ducks, rabbits, ruffed grouse, quail, deer, fur-bearers, squirrels, woodcock & raccoon.
	Jennings Creek	380	Pheasants, rabbits, deer, woodcock, squirrels, ruffed grouse, fur-bearers, ducks, raccoon & quail.
	Mud Lake	310	Ducks, pheasants, squirrels, ruffed grouse, fur-bearers, rabbits, quail, woodcock & raccoon.
	Portage	1,347	Pheasants, rabbits, squirrels, ruffed grouse, quail, ducks & raccoon.
Dane	Black Earth Creek	38	Fishing.
	Deansville	2,562	Pheasants, rabbits, squirrels, Hungarian partridge, ducks, raccoon, fur-bearers, & woodcock.
	Leuten	1,532	Pheasants, rabbits, squirrels, ducks, fur-bearers & raccoon.
	Mazomanie	9,584	Pheasants, quail, raccoon, rabbits, ducks, squirrels, deer, ruffed grouse, woodcock, fur-bearers & fish.
Dodge	Beaver Dam Lake R.O.W.	3	
	Horicon Marsh	10,857	Waterfowl, pheasants, rabbits & raccoon.
	Shaw Marsh	672	Pheasants, ducks, rabbits & squirrels.
	Theresa Marsh	4,454	Pheasants, Hungarian partridge, rabbits, squirrels & ducks.
	Westford	880	Pheasants, ducks, geese, & rabbits.
	Wildcat Swamp	3,555	Pheasants, Hungarian partridge, raccoon, rabbits & squirrels.
Douglas	Douglas Co. Grouse Management	2,760	Sharptailed grouse, ruffed grouse, deer & snowshoe hare.
Dunn	Dunnville	3,600	Ducks, pheasants, rabbits & grouse.
	Elk Mound	4,429	Pheasants, rabbits, squirrels & ducks.
Eau Claire	Augusta	1,627	Ruffed grouse, deer, ducks & rabbits.
	Pleasant Valley	2,238	Pheasants, rabbits, ducks & woodcock.
Fond du Lac	Brandon	1,862	Pheasants, ducks, rabbits & squirrels.
	Eden	1,970	Pheasants, Hungarian partridge & squirrels.
	Kettle Moraine State Forest	5,000	Rabbits, squirrels, pheasants, & Hungarian partridge.
	Rush Lake R.O.W.	19	Ducks & fishing.

PUBLIC HUNTING AND FISHING GROUNDS AS OF JUNE 30, 1954—Continued

County	*Name*	*Acreage*	*Game Species Prominent*
Fond du Lac-con.	St. Cloud	3,328	Pheasants, ducks, geese, rabbits, Hungarian partridge, ruffed grouse, woodcock & squirrels.
	Supple Marsh	321	Waterfowl.
Forest	Little Rice	1,500	Waterfowl.
Grant	Montfort	4,013	Pheasants, fish, rabbits, squirrels, raccoon, quail, Hungarian partridge, fur-bearers, ruffed grouse, ducks, woodcock & deer.
Green	Albany	2,118	Pheasants, fish, ducks, fur-bearers, squirrels, rabbits, raccoon, quail, Hungarian partridge, woodcock & ruffed grouse.
	Brodhead	3,370	Pheasants, fish, ducks, squirrels, raccoon, fur-bearers, rabbits, quail, Hungarian partridge & woodcock.
	Brooklyn	4,850	Pheasants, fish, rabbits, squirrels, quail, ducks, raccoon, Hungarian partridge, woodcock & ruffed grouse.
	Browntown	3,947	Pheasants, rabbits, squirrels, fur-bearers, ducks, fish, raccoon, quail, Hungarian partridge, woodcock, ruffed grouse & deer.
	New Glarus	3,442	Pheasants, rabbits, squirrels, fur-bearers, raccoon, quail, ducks, Hungarian partridge, fish, ruffed grouse & woodcock.
Green Lake	Silver Creek	2,621	Pheasants, rabbits, ducks & squirrels.
Iowa	Avoca	4,084	Pheasants, ducks, quail, ruffed grouse, woodcock, rabbits, raccoon, fur-bearers, & deer.
Iron	Big Island	960	Waterfowl, deer, rabbits & ruffed grouse.
	Hay Creek-Hoffman Lake	11,849	Waterfowl, fur-bearers, deer, rabbits & ruffed grouse.
	Underwood	1,600	Deer & ruffed grouse.
Jackson	Central Wisconsin Conservation Area (Black River Falls unit)	60,118	Grouse, deer, rabbits & waterfowl.
Jefferson	Jefferson Marsh	2,818	Pheasants, rabbits, ducks, squirrels, raccoon, Hungarian partridge, quail & deer.
	Princess Point	6,030	Pheasants, ducks, geese, rabbits, squirrels, Hungarian partridge, woodcock, raccoon & deer.
	Waterloo	6,002	Pheasants, rabbits, squirrels, ducks, Hungarian partridge & raccoon.
Juneau	Central Wisconsin Conservation Area (Meadow Valley unit)	57,000	Grouse, deer, rabbits & waterfowl.
Kenosha	New Munster	2,021	Pheasants, rabbits, woodcock, fish, squirrels, Hungarian partridge, deer, fur-bearers, raccoon, ducks & quail.
	Paris	2,943	Pheasants, fur-bearers, ducks, woodcock, Hungarian partridge, raccoon, squirrels, rabbits, quail, fish, deer.
	Salem	927	Pheasants, ducks, fish, fur-bearers, rabbits, squirrels, Hungarian partridge, quail, raccoon, woodcock & deer.
La Crosse	Bangor	6,861	Pheasants, quail, rabbits & squirrels.
	Van Loon	4,776	Pheasants, ducks, quail, deer, squirrels & raccoon.
Lafayette	Argyle	3,065	Fish, pheasants, squirrels, ducks, rabbits, fur-bearers, raccoon, quail, Hungarian partridge, ruffed grouse & woodcock.
	Spafford Creek	4,048	Pheasants, fish, rabbits, squirrels, ducks, fur-bearers, raccoon, quail, Hungarian partridge, ruffed grouse, woodcock & deer.
	Yellowstone	1,800	Squirrels, rabbits, fish, pheasants, raccoon, fur-bearers, quail, ducks, ruffed grouse, deer, woodcock.
Langlade	Ackley Grouse Management	1,680	Sharptail grouse, ruffed grouse, woodcock & deer.
Lincoln	New Wood	1,600	Deer, rabbits & ruffed grouse.
Manitowoc	Collins	9,794	Pheasants, Hungarian partridge, rabbits, raccoon & squirrels.
	Two Rivers	772	Pheasants, waterfowl, Hungarian partridge & rabbits.
Marathon	Nine-Mile Swamp	4,100	Ruffed grouse, sharptail grouse, rabbits, woodcock, squirrels & deer.

PUBLIC HUNTING AND FISHING GROUNDS AS OF JUNE 30, 1954—Continued

County	Name	Acreage	Game Species Prominent
Marinette	Amberg	1,010	Trout, deer, rabbits & ruffed grouse.
	Miscauno	638	Rabbits, deer, squirrels & ruffed grouse.
	Town Corner Lake	800	Waterfowl, deer, rabbits, squirrels & ruffed grouse.
Marquette	Lawrence Creek	825	Fishing, pheasant, ducks, deer & ruffed grouse.
	Mecan	700	Fishing, pheasant, deer, rabbits & ruffed grouse.
Oconto	Oconto Marsh	1,670	Pheasants & waterfowl.
Oneida	Peshtigo Brook	2,040	Ruffed grouse & deer.
Outagamie	Thunder Lake	573	Waterfowl, sharptail grouse & deer.
	Deer Creek	441	Pheasants, rabbits, ruffed grouse & deer.
	Mack	1,358	Pheasants, rabbits, ruffed grouse & deer.
	Maine	720	Pheasants, rabbits, ruffed grouse & deer.
	Outagamie County	412	Ducks, pheasants, rabbits, ruffed grouse & deer.
Ozaukee	Cedarburg	1,302	Pheasants, Hungarian partridge & rabbits.
	Cedarburg Bog	789	Waterfowl.
	Ulao	1,600	Pheasants, Hungarian partridge, rabbits & waterfowl.
Polk	McKenzie Creek	2,370	Trout, deer, woodcock, waterfowl, snowshoe hare & ruffed grouse.
	Rice Beds Creek	1,020	Fishing, deer, ruffed grouse, woodcock, waterfowl & snowshoe hare.
	Trade River	16	Trout.
Price	Price Creek	1,466	Trout, deer, ruffed grouse, woodcock, & snowshoe hare.
Richland	Richland	2,885	Pheasants, quail, rabbits & squirrels.
Rock	East Hanover	2,236	Pheasants, rabbits, squirrels, Hungarian partridge, ducks, fur-bearers, raccoon.
	Evansville	4,059	Pheasants, rabbits, Hungarian partridge, fur-bearers, squirrels, raccoon & woodcock.
	Footville	4,642	Pheasants, rabbits, Hungarian partridge, squirrels, fur-bearers & raccoon.
	Lima	2,177	Pheasants, rabbits, squirrels, Hungarian partridge & raccoon.
	Rock Prairie Goose Refuge	1,372	Geese, ducks, Hungarian partridge & pheasants.
	Storr's Lake	455	Pheasants, ducks, rabbits, squirrels, fish, fur-bearers, raccoon, & Hungarian partridge.
Rusk	Devil's Creek	130	Fishing.
St. Croix	Silvernail	1,038	Deer, ruffed grouse & snowshoe hare.
Sauk	St. Croix Island	484	Waterfowl.
	Reedsburg	1,728	Pheasants, squirrels, quail, rabbits, ruffed grouse & raccoon.
	Witwen	2,613	Pheasants, quail, rabbits, squirrels, ruffed grouse, ducks, woodcock, fur-bearers & raccoon.
Sawyer	Chief River	1,183	Deer, ruffed grouse & snowshoe hare.
	Flat Creek	418	Deer, ruffed grouse, woodcock, & snowshoe hare.
	Kissick Swamp	941	Deer, ruffed grouse, snowshoe hare, & woodcock.
	Totagatic	3,683	Waterfowl, fur-bearers, deer, grouse & woodcock.
	Weirgor Springs	1,780	Trout, deer, ruffed grouse, sharp-tail grouse & rabbits.
Sheboygan	Adell	1,343	Pheasants, Hungarian partridge, rabbits, & squirrels.
	Nichols Creek	940	Pheasants, rabbits & squirrels.
Taylor	Taylor county	1,356	Prairie grouse, cottontail rabbits & squirrels.
Vilas	Bear Springs Flowage	40	Waterfowl.
	Mann Creek	200	Waterfowl.
	Stevenson Creek	200	Waterfowl.
Walworth	Clover Valley	1,279	Pheasants, rabbits, ducks, Hungarian partridge, squirrels & raccoon.
	Richmond	1,507	Rabbits, pheasants, squirrels, fur-bearers, raccoon & ducks.
	Troy	8,900	Rabbits, pheasants, Hungarian partridge, squirrels, raccoon & ducks.
Washburn	Beaver Brook	789	Trout, ruffed grouse, woodcock, waterfowl & deer.

PUBLIC HUNTING AND FISHING GROUNDS AS OF JUNE 30, 1954—Continued

County	*Name*	*Acreage*	*Game Species Prominent*
Washington	Allenton	2,025	Pheasants, Hungarian partridge, rabbits & ducks.
	Colgate	665	Pheasants, Hungarian partridge, ducks, rabbits & squirrels.
	Hartford	1,414	Pheasants, Hungarian partridge, & rabbits.
	Kewaskum	910	Pheasants & rabbits.
Waukesha	Eagle	1,725	Pheasants, rabbits, squirrels, ducks, raccoon, deer, fish, fur-bearers, Hungarian partridge, quail & woodcock.
	Vernon Marsh	3,167	Pheasants, ducks, fish, fur-bearers, Hungarian partridge, rabbits, squirrels, woodcock, raccoon, deer & quail.
Waupaca	Clintonville	1,919	Ruffed grouse, rabbits, pheasants, & waterfowl.
	Marion	2,670	Ruffed grouse, rabbits, pheasants & squirrels.
	Mukwa	1,334	Pheasants, ruffed grouse, waterfowl & rabbits.
Waushara	Greenwood Refuge	179	Geese.
	Pine River	1,480	Trout, pheasants, rabbits & deer.
	White River	210	Trout, pheasants, rabbits & squirrels.
Winnebago	Bay Boom	2,429	Pheasants, waterfowl & squirrels.
	Deltox Marsh	774	Pheasants & rabbits.
	Deppe Marsh	100	Pheasants.
	Rush Lake	1,193	Pheasants, squirrels, waterfowl & rabbits.
	Rush Lake R.O.W.	2	Ducks.
Wood	Wood County	18,632	Ducks, grouse, deer & rabbits.

WINTER FEEDING AND DEER YARD ACQUISITION

Since 1935, the game division has purchased annually and distributed winter feed in problem deer yards. The best available alfalfa hay and grain concentrate are procured and distributed to selected feeding sites in the major yards. The forest protection division assists in this activity by making man power and equipment available.

Because of the mild winters and smaller deer herds during the past two winters, yard feeding has been reduced. A total of 177 tons of hay and feed concentrates at a cost of $9,000.01 was distributed in deer yards during the 1952–53 season. During the 1953–54 seasons, 274 tons of feed were purchased at a cost of $12,329.85. During the biennium, the total cost of deer feed, including distribution expenses, amounted to approximately $60,000.00.

A browse improvement program supplementing the artificial feeding project is also in operation. Trees and saplings of little commercial value were cut or bulldozed down so that deer could browse the tops, and the stumps could start new shoots within reach of the deer. Browse improvement on 2,000 acres of deer yards at a cost of $23,016.18 was carried on during the biennium.

In this period a total of 1,432.5 acres of land was purchased for deer yards at a cost of $10,896.00. Of this amount, $2,840.00 was spent in 1952–53, and $8,056.00 in 1953–54. Deer yards were acquired in Burnett, Iron, Lincoln, Marinette, and Price counties. At the present time the game management division manages and develops eighteen deer yards in ten of the major deer counties, totaling approximately 26,000 acres.

TOTAL DEER YARDS ACQUIRED

Year	New Areas Added	County	Name	Total Acreage	Total Acquired Acreage
1944	2	Iron	Hay Creek	1,320	
			Boot Lake	680	2,000
1945	6	Bayfield	Flag River	160	
		Iron	Hay Creek	480	
			Big Island	960	
			Boot Lake	320	
		Lincoln	New Wood	960	
		Marinette	Town Corner Lake	319.59	
		Price	Price Creek	1,392	
		Sawyer	Chief River	760	5,351.59
1946	3	Ashland	Hoffman Lake	4,960.40	
		Iron	Hay Creek	1,329.45	
		Marinette	Town Corner Lake	321.25	
			Miscauno	357.9	
		Sawyer	Chief River	40	
			Kissick Swamp	896.23	7,905.23
1947	3	Ashland	Hoffman Lake	480	
			White River	720	
		Bayfield	Flag River	240	
		Burnett	Kohler-Peet	2,553.35	
		Iron	Hay Creek	160	
		Rusk	Silvernail	557.65	
		Sawyer	Chief River	80	4,791.00
1948	2	Bayfield	Flag River	80	
		Burnett	Kohler-Peet	320	
		Iron	Hay Creek	40	
		Marinette	Town Corner Lake	80	
			Amberg	254.6	
		Sawyer	Flat Creek	171.34	945.94
1949	1	Ashland	White River	240	
		Bayfield	Flag River	80	
		Iron	Underwood	1,601.84	
		Marinette	Amberg	448.76	
		Rusk	Silvernail	480	
		Sawyer	Flat Creek	46.91	
		Washburn	Flat Creek	160.2	3,057.71
1950	None	Marinette	Amberg	40	
		Burnett	Kohler-Peet	320	
		Sawyer	Flat Creek	40	400
1951	1	Ashland	Hoffman Lake	160	
		Iron	Hay Creek	40	
		Marinette	Miscauno	280	
			Amberg	39.11	
		Burnett	Kohler-Peet	55.68	
		Sawyer	Kissick Swamp	44.94	
			Chief River	85	
		Polk	McKenzie Creek	160.72	865.45
1952	3	Burnett	Sand Creek	285.55	
			Kohler-Peet	40	
		Marinette	Amberg—(2)	120	
		Polk	Rice Beds Creek	720	
		Price	Price Creek	80	
		Sawyer	Chief River	218	
			Weirgor Springs	40	1,503.55
1953	None	Burnett	Kohler-Peet	40	
		Marinette	Town Corner	80	120
TOTALS	21	11	21	26,940.47	26,940.47

WILDLIFE AND GAME REFUGES

Wildlife refuges are established to protect those game species that are in danger of being overhunted, or that are at such a low level as to border upon extinction, or to close areas for the protection and reproduction of the game species concerned. One hundred thirty-seven refuges amounting to 48,500 acres are in effect in 52 counties. Annually during each open deer season additional closed areas are established primarily for the protection of deer.

WINTER GAME BIRD FEEDING

Most bird feeding activity has occurred in the agricultural areas of southern and southeastern Wisconsin, and has concentrated mainly on pheasants, Hungarian partridge, and quail. Some feeding of grouse and prairie chickens has been accomplished.

In Wisconsin, under present conditions of land use with considerable dairy farming and intensified agricultural practices, cover and food have been reduced to a minimum. A good supply of food at all times is required to curtail starvation in the winter, and to insure survival of adult birds for the breeding season.

Funds are set aside annually for feeding purposes, and are allotted to district game managers who furnish feed to conservation wardens in their counties. Two feeding programs are in operation; namely, the general county program, and the feeding in progress on public hunting grounds.

During the biennium, more than 225,000 pounds of corn, oats, buckwheat, barley, soybeans, wheat, and grit were distributed at several hundred feeding stations in 47 counties. Upland game birds also utilized more than 100 food patches of crops left standing in the field, and small plots of food plants planted especially for wildlife. District game managers and conservation wardens cooperate closely to see that feeding needs and emergency situations are met, and provide services to the many participating sportsmen's clubs, civic groups, and individuals, particularly farmers.

LICENSED FARMS AND SHOOTING PRESERVES

Game, fur, and deer farms, and shooting preserves, are licensed only after commission requirements and specifications have been met and approved by department personnel. The following licenses were issued during the biennium:

	1952	*1953*
Game farms	55	120
Deer farms	4	6
Fur farms	30	48
Shooting preserves	None	7

At the close of the period there were approximately 414 game farms, 540 fur farms, 65 deer farms, and 67 shooting preserves. The acreage in shooting preserves now amounts to approximately 36,237 acres.

In addition to the above special licenses, the game division issues annually approximately 40 bird banding permits, 35 to 40 scientific collection permits, and 225 miscellaneous free permits for animals or birds obtained legally and held in captivity for noncommercial purposes.

GAME KILL REPORTS

Annually the game division prepares for the public, records of game harvest showing the species and quantity of game animals, upland birds, and waterfowl taken during an open season. The annual game harvest yields, based on hunters' and trappers' game kill reports, indicate the trend during the years and serve as a guide for future game management planning. The results of these statistical data are used by federal agencies, press services, and individuals concerned. A special deer hunter poll based on the sample method used in other fields of statistical inquiry is used to determine the kill, and to provide additional information regarding deer hunting, and hunter opinion in the state. The division also assists law enforcement in registering at checking stations all of the deer taken legally by hunters. This recording of the actual kill was undertaken first during the 1953 deer season. More than eleven million game animals and birds, exclusive of bountied animals, were taken by hunters and trappers during the biennium.

BOUNTIED ANIMALS

State-wide bounties have been paid since the Civil War. From March 11, 1945, to the present, the statutes have provided for the following bounty payments:

Adult fox	$ 2.50
Kits	1.00
Adult wolf and coyotes	20.00
Wolf cubs	10.00
Wildcat and lynx	5.00

The appropriation and authority for the payment of these bounties was terminated as of June 30, 1953. A newly enacted law restored state bounties effective November 7, 1953.

During the biennium, the number of animals bountied, and cost, were as follows:

	Animal	*Number Taken*	*Paid Claims*
1952–53	Coyotes and wolves	2,664	$ 51,310.00
	Wildcat and lynx	740	3,700.00
	Red fox	30,548	71,469.50
	Gray fox	5,045	12,354.50
	Total	38,997	$138,834.00
1953–54	Coyotes and wolves	1,703	$ 32,000.00
	Wildcat and lynx	361	1,805.00
	Red fox	21,890	49,779.50
	Gray fox	3,149	7,676.00
	Total	27,103	$ 91,260.50

In view of the fact that most bounties are paid during the first half of a fiscal year (July 1 to January 1), and that bounties were discontinued during some of the heavy yield months, it may be assumed that the 1953–54 fiscal year harvest would have approximated the number of claims recorded during the previous year had the bounty season been continuous.

DEER AND BEAR DAMAGE CLAIMS

Previous to July 1, 1949, various sums were appropriated annually from the state general fund, and by the state emergency board, for the payment of deer and bear damage claims.

Effective in July 1949, the legislature appropriated $40,000.00 to defray the cost of deer and bear damage claims. Wisconsin statutes at this time provide that all claims filed with the Conservation Commission and deemed valid shall be paid on a pro rata basis at the end of each fiscal year. As shown in the following table, deer and bear damage payments are considerably less than the $65,827.39 paid during the preceding biennium.

A total of 177 deer damage and 94 bear damage claims was paid during the biennium. Twenty-five varieties of crops were damaged by deer. Livestock, (mostly sheep), and apiaries led the list of bear damage items.

Fiscal Year	*Deer*	*Bear*	*Total*
1952–53	$ 8,097.66	$ 3,420.44	$11,518.10
1953–54	13,049.14	4,366.72	17,415.86
Total	$21,146.80	$ 7,787.16	$28,933.96

Almost one-half million dollars has been expended for deer and bear damage claims since 1932 when the first deer damage claim was paid.

STATE EXPERIMENTAL GAME AND FUR FARM

The State Experimental Game and Fur Farm covering an area of more than 500 acres is located at Poynette, Wisconsin. Its animal and bird exhibits form an integral part of its public relations and educational program, and attracts thousands of visitors annually. Its licensed veterinarians continue to offer free services to the fur and game breeders of the state. Pathologists examine game found dead and collected in the field, as well as diseased birds and animals. The farm acts as a clearing house for all live confiscated game received from department fieldmen. Staff members offer assistance to Wisconsin residents as to housing, feeding, and breeding of game, and furnish aid to conservation clubs and individuals in pheasant propagation methods under the cooperative rearing and stocking programs sponsored by the game management division. Following are some of the activities of the farm:

Production and Distribution

	1952-1953	1953-1954	Totals
Eggs produced			
Game birds	466,741	492,011	958,752
Mutants	3,170	1,172	4,342
Totals	469,911	493,183	963,094
Eggs set			
Game birds	395,091	423,868	818,959
Mutants	2,078	1,152	3,230
Totals	397,169	425,020	822,189
Eggs shipped to cooperators			
Game birds	33,423	34,645	68,068
Mutants	955	20	975
Totals	34,378	34,665	69,043
Chicks hatched			
Game birds	292,153	321,785	613,938
Mutants	1,018	653	1,671
Totals	293,171	322,438	615,609
Chick distribution			
Day-old chicks to cooperators	204,800	228,913	433,713
Chicks in farm brooders			
Game birds	83,753	92,392	176,145
Mutants	1,018	648	1,666
Chicks to research	3,600	485	4,085
Totals	293,171	322,438	615,609

Stocking

Birds liberated from			
Egg program	10,282	10,905	21,187
Day-old chick program	165,692	171,166	336,858
Farm—16–20 week old birds	21,873	27,766	49,639
Mature pheasants	39,946	39,241	79,187
Totals	237,793	249,078	486,871

The pheasant stocking program has continued with good results. The cooperating clubs have increased their allotments of birds during the past biennium. Many of the clubs hold pheasants over the winter successfully.

The raccoon herd was held at a minimum due to the high population of the animals in the wild. This policy will continue until the wild population merits an increased stocking program. Rabbits and squirrels were shipped to various parts of the state following requests from many conservation clubs.

	1952-1953	1953-1954	Totals
Raccoon	190	194	384
Rabbits	48	126	174
Squirrels	32		32
Totals	270	320	590

Confiscation and Clearing House Section

During the biennium, the confiscation and clearing house section received, housed, and fed the following birds and animals until proper disposal was undertaken:

	1952-1953	*1953-1954*	*Totals*
Badger		3	3
Beaver	2	4	6
Bear, cubs		3	3
Coyote	1		1
Deer	10	9	19
Fawn	27	37	64
Fox, red		7	7
Porcupine		2	2
Raccoon	16	35	51
Skunk	1		1
Squirrel, black		5	5
Wolf, black	2		2
Wolf, timber	1		1
Canada geese		2	2
Bald eagle		1	1
Swan		1	1
Totals	60	109	169

Public Relations and Education

The number of animal and bird exhibits at the farm was increased slightly over the previous biennium. Personnel of the farm attended sixty-four meetings sponsored by the sportsmen's groups, in which talks were given and moving pictures shown. The farm continued to cooperate with the information and education division by supplying live animal and bird exhibits at the state fair, county fairs, and conservation organizations meetings.

FEDERAL AID GAME ACTIVITIES

For years the game management division has operated various types of game projects under the Pittman–Robertson Federal Aid in Wildlife Restoration program. The approximate cost for wildlife restoration under the terms of the Pittman–Robertson Act amounted to $554,136.00 in 1952–53, and $713,301.00 in 1953–54. The following cooperative federal and state projects to carry on the state game program are financed by the Pittman–Robertson fund, whereby the federal government assumes 75% of the cost, the other 25% is paid by the state out of its hunting license receipts. The different functions of the wildlife program for the 1952–54 biennium are listed under their separate categories:

Federal-Aid Summary—Wildlife Restoration Projects

Types of Projects	*Approximate Cost*	
	1952-53	*1953-54*
Development	$276,066 00	$442,712.00
Acquisition	40,708.00	47,762.00
Maintenance	40,484.00	43,904.00
Coordination	40,486.00	40,518.00
Research	156,392.00	138,405.00
Totals	$554,136.00	$713,301.00

DEVELOPMENT PROJECTS

Wildlife habitat development projects, which are always an important phase of the federal aid program, and which are concerned primarily with the restoration and improvement of land and cover for wildlife, continued to claim the largest share of monies spent on restoration projects. A summary of these projects with comparative costs for the 1952–53 and 1953–54 years is as follows:

Project Name and Number		*Approximate Cost*	
		1952-53	*1953-54*
Yellowstone Dam	FW-1-D	$ 11,595.00	$203,875.00
Boscobel Nursery	W-19-D	56,649.00	49,162.00
Regional Development	W-19-D	69,775.00	53,593.00
CWCA Meadow Valley	W-28-D	13,455.00	447.00
CWCA Black River Falls	W-29-D	19,118.00	4,750.00
Totagatic	W-39-D	14,989.00	4,583.00
Crex Meadows	W-40-D	14,600.00	20,614.00
Game Habitat—Area I	W-42-D	20,827.00	20,203.00
Game Habitat—Area II	W-43-D	30,396.00	26,534.00
Yellowstone	W-45-D	9,041.00	24,084.00
Browntown	W-50-D	8,705.00	572.00
Wood County	W-52-D	6,060.00	18,039.00
Ackley	W-58-D	856.00	2,526.00
Prairie Chicken	W-60-D	----------	2,284.00
Rock Prairie	W-64-D	----------	4,008.00
Mazomanie	W-65-D	----------	3,083.00
Little Rice	W-67-D	----------	4,355.00
Totals		$276,066.00	$442,712.00

As in the past, the development of game habitat continued to be the most important type of work. While the Regional, Yellowstone, Ackley, Prairie Chicken, Rock Prairie, and Mazomanie projects accomplished this work through weed control, fencing, and the planting of trees and shrubs for food and cover, the Yellowstone Dam, CWCA, Totagatic, Crex Meadows, Browntown, Wood County, and Little Rice projects achieved the same results through water impoundment. Intensive management of federal, state, and county-owned lands for sharp-tailed grouse and deer was necessary on these game habitat projects. Activities consisted of controlled burning, disking brushy areas, herbaceous plantings, and timber thinnings.

The Boscobel nursery project which began in the summer of 1951 is now developed completely, and is producing trees and game shrubs to supplement the cover planting program on all federal aid projects.

LAND ACQUISITION PROJECTS

To obtain control over numerous, well-distributed areas of land for the conservation of wildlife and in the public interest, the state engaged in the following acquisition projects during the 1952–53 and 1953–54 fiscal years:

Project Name and Number		*Approximate Cost*	
		1952–53	*1953–54*
Horicon Marsh	W- 3-L		$ 3,358.00
Crex Meadows	W-30-L	$ 2,043.00	6,973.00
Fish Lake	W-33-L	780.00	74.00
Browntown	W-34-L		22.00
New Munster	W-35-L	81.00	205.00
Princess Point	W-37-L	3,287.00	5,755.00
Vernon Marsh	W-38-L	2,814.00	2,143.00
Rice Beds Creek	W-41-L		2,234.00
Eldorado Marsh	W-46-L		4,263.00
Thunder Lake	W-47-L	1,643.00	248.00
Tiffany	W-48-L	7,426.00	330.00
Jackson Marsh	W-49-L	2,985.00	113.00
Little Rice	W-51-L	4,538.00	516.00
French Creek	W-53-L	3,110.00	215.00
Pine Island	W-56-L	5,581.00	382.00
Kiezer Lake	W-57-L	2,881.00	363.00
Peshtigo Brook	W-59-L	3,472.00	64.00
Navarino Marsh	W-61-L	67.00	369.00
CWCA—Black River Falls	W-63-L		7,035.00
Amberg Deer Yard	W-66-L		2,754.00
New Wood Deer Yard	W-68-L		6,000.00
Hay Creek Deer Yard	W-69-L		670.00
Weirgor Springs	FW-2-L		2,386.00
Willow Creek	FW-3-L		1,120.00
Woods Flowage	FW-4-L		170.00
Totals		$40,708.00	$47,762.00

MAINTENANCE PROJECTS

As more areas are acquired and developed under the wildlife restoration program, maintenance projects assume greater importance. The maintenance projects for the 1952–53 and 1953–54 fiscal years, with comparative costs, are summarized as follows:

Project Name and Number		*Approximate Cost*	
		1952–53	*1953–54*
Horicon Marsh	W-26-M	$19,259.00	$19,252.00
Rock County	W-44-M	2,334.00	
CWCA—Meadow Valley	W-54-M	4,547.00	4,729.00
CWCA—Black River Falls	W-55-M	4,216.00	7,107.00
Crex Meadows	W-62-M	10,128.00	12,816.00
Totals		$40,484.00	$43,904.00

Typical maintenance activities for the above projects include regulating water controls, keeping control structures in repair and operation, controlled burning, producing food patches, leasing, and maintaining buildings, roads, and other administrative facilities.

COORDINATION PROJECT

The coordination project influences the smooth and effective operation of the entire wildlife restoration program. It was initiated when the volume and complexity of the program justified this type of work. Activities of the program include planning and the preparation and supervision of the projects, which thus provide a smoother and more effective operation of the entire federal aid in wildlife restoration program.

FEDERAL AID RESEARCH PROJECTS

Project Name and Number	*Approximate Cost*	
	1952–53	*1953–54*
Deer W- 4-R	$ 12,313.00	$ 5,327.00
Waterfowl W- 6-R	24,569.00	20,004.00
Pheasant–Quail W- 9-R	22,330.00	23,240.00
Grouse W-13-R	26,728.00	25,520.00
Fur W-15-R	21,087.00	18,194.00
Pathology W-24-R	2,353.00	4,578.00
Game Survey W-25-R	47,012.00	41,542.00
Totals	$156,392.00	$138,405.00

THE HORICON MARSH PROJECT

This federal aid project is located in north-central Dodge county, and the area comprises 10,857 acres as of June 30, 1954. Supervision of the marsh is now under the district game manager. The number of permanent personnel employed consists normally of four conservation aids, a stenographer, and the project leader.

The upkeep of buildings, equipment, roads, fences, parking areas, etc., demands constant attention. Activities of major importance occurring during the biennium are listed below:

Burnett Ditch Development

A total of 6,000 feet of the marsh has been redredged to a depth of seven feet in the middle, and an average width of twenty feet. The primary object is to provide better boat access to the marsh for hunters and fishermen. It is hoped that this work can be completed during the winter of 1954–55.

Water Levels

Further recovery of marsh vegetation in open water areas took place during the summers of 1952 and '53. Recovery was sufficient to the extent that a half-foot higher water level was held in the spring of 1954. Should this trend be reversed, a lower water level will again have to be maintained during future years.

Controlled Burning

A total of 1,825 acres was control-burned during the biennium, of which 1,810 acres were burned from December 28, 1953, to March 5, 1954, when

conditions were most favorable. The type of vegetation burned consisted primarily of bluejoint, canary grass, river bulrush, and cattail. Due to low water conditions in the spring of 1954, few of these burned areas were under water, and as a result waterfowl did not use them to any great extent.

Tree and Shrub Planting

A total of 12,714 trees and shrubs was planted in the spring of 1953 and '54. Also, 2,850 trees and shrubs were replanted.

Flushing Bar Experiment

A study was conducted on the marsh to determine the value of a flushing bar as a game-saving device during hay-cutting operations. A total of fifty acres of hay (mostly alfalfa) was cut by share-croppers under the supervision of project personnel. Using a flushing bar, seven duck nests were found—none were destroyed. Checks showed later that three of these nests hatched successfully. One rabbit was killed out of thirty-four seen, and three pheasants out of thirty-one seen. A survey was conducted on private land surrounding the marsh where hay was cut without a flushing bar. The mortality of game here was much higher.

Share-Trapping

Share-trappers caught 36,848 muskrats and 28 mink during the period from October 28, 1952, through April 7, 1953. From October 25, 1953, through April 15, 1954, 24,187 rats and 64 mink were taken.

Public Use

Because of its location to large centers of population, the Horicon Marsh Wildlife Area attracts many hunters, fishermen, bird-watchers, etc. The increased number of Canada geese stopping off at the marsh in the spring has also attracted large numbers of sight-seers.

Development

A survey was made on July 2, 1952, to determine the use of the twelve level ditches by nesting waterfowl. No duck broods were seen, and only one brood of coots was observed. Lack of vegetation on the spoil banks is believed to be the primary factor which causes the ditches to be used so little. This was more or less verified by a similar survey made on July 10, 1953. At that time about 80 per cent of the spoil banks had a good vegetative cover. Fifteen duck broods, two coot broods, and one Florida gallinule brood were tallied.

RESEARCH PROJECTS

Seven research projects have been active during the biennium. These concern themselves directly with particular species, and also with the management recommendations and hunting of the species. Many of the projects have been in operation for a considerable period of time, during which the complexion of the problems with which they have coped has undergone

great alteration. This calls for close coordination of research with developing management needs in order to maintain an up-to-date and useful flow of information that can be directed toward administration of the game and fur resources of the state.

After field study is completed on any phase of a project, the results must be made known to other biologists and the public, as well as to the administration. Findings of the research projects are published regularly as quarterly progress reports. Completed studies or phases are written up as technical wildlife bulletins. During the biennium, six numbers in this series of bulletins have been published on level ditching for muskrats, fox populations, census methods for deer, muskrat growth and development, ruffed grouse sex and age criteria, and muskrat refuges. Three others were near completion on deer populations, pheasant stocking studies, and pheasant stress studies.

A new series of popular bulletins entitled, "Wisconsin Wildlife", was started in order to present research findings to the general public. Two numbers have been published in this series—one on sharp-tailed grouse, and the other on the wildlife research program.

Project personnel have worked continuously with study committees of the conservation congress, have given talks to numerous sportsmen's clubs and organizations, and have worked with other department personnel to acquaint them with new developments and current practices in game management. The scope and important findings of each project are listed in the following sections:

DEER MANAGEMENT RESEARCH PROJECT

Surveys of winter range to determine conditions were made in 180 deer yards during the winter of 1952–53, and in 243 during the winter of 1953–54. It is evident from the surveys that the liberal hunting seasons of 1949 to 1951 resulted in the improvement of browse conditions in many yards; however, hunting in 1952 and 1953 was allowed for forked-horn bucks only. Since buck seasons do not control the size of the herd, the number of deer in the state has been increasing steadily since the last any-deer season in 1951. This has been indicated by an increase in the per cent of winter yards in critical condition, by the increased number of deer of both sexes and all ages reported seen by hunters during hunting seasons, by the increased number of deer reported killed by automobiles, and by good fawn production. These statistics are summarized and compared with the previous biennium in the following tables:

Per Cent of Deer Yards in Critical Condition

	1950–51	*1951–52*	*1952–53*	*1953–54*
Northern Area	69	46	41	58
Central Area	42	3	8	6

Deer Population Indicators

	1950	1951	1952	1953
Average number of deer seen per hunter per day	1.60	0.58	0.59	0.87
Number of deer killed by automobiles		438	465	790
Per cent of fawns in pre-hunting season population	36	37	37	42
Number of fawns per doe in pre-hunting population	0.8	1.1	0.9	1.0

The whole present trend of land use in Wisconsin is developing toward less favorable deer habitat. The disappearance of natural winter food in the growing number of deer yards can result only in fewer deer in the future.

Although overbrowsing has been stressed as important because it resulted in an immediate loss of deer food, another very real danger to future deer herds in northern counties is lack of cover. Losses in future winter cover for deer as a result of heavy browsing by the too-large herd of the last decade or more have been very large. Over a great part of northern Wisconsin winter deer range, the forest is maturing without the spread of trees in the younger age classes ready to take over when the old cover trees topple or are cut.

During the biennium, two continuing projects were started under contractual agreement with the University of Wisconsin. The first with the Department of Botany has as its objectives the analysis of Wisconsin winter deer range using methods of plant ecology, and the development of methods for measuring browse status and production. The studies conducted have yielded a method for comparative analysis of lowland deer range through the use of continuum indices.

The second University study is being made by the Department of Veterinary Science to investigate means of controlling the damage done to domestic sheep by deer liver flukes. Control methods are being tested that will prevent further livestock losses from a parasite that is relatively harmless in deer.

WATERFOWL MANAGEMENT RESEARCH PROJECT

The wildfowl of North America constitute a highly mobile resource which attracts the attention of over 100,000 duck stamp purchasers, and many more times that number of interested spectators annually in Wisconsin. The objectives of the waterfowl management research project are to assemble factual information on the resource in Wisconsin, to cooperate with the U. S. Fish and Wildlife Service in conducting flyway and national fact-finding projects, and to make all of the material available to various organizations and the general public in an easily digestible form. A series of reports is being prepared on the wildfowl which use Wisconsin habitat. Large quantities of data are tabulated on international business machines through a cooperative project at the University of Wisconsin. In addition, current field jobs are in progress. A seasonal pattern of the activity of the birds offers a logical breakdown for presenting information on the continuing work of this project.

Trailside shelter, Perrot state park.

State-wide spring inventories are conducted annually to determine trends in the breeding waterfowl population. The results indicate that the main duck species nesting in Wisconsin in order of abundance are the blue-winged teal, mallard, black duck, wood duck, ringneck, and hooded merganser. In both 1953 and 1954, about .178 pairs of ducks were present per acre of wetland sampled. The coot or mud hen is also a common nester, especially in the southeast quarter of the state. The Canada goose nests in the state in small numbers only, mainly in Brown, Dodge and Juneau counties. All of these groups of nesting geese resulted from some type of propagation program. Breeding surveys are conducted to determine the success of the birds in raising broods. With similar information from other states and Canada, the annual wildfowl hunting regulations are established by the U. S. Fish and Wildlife Service. Within the broad framework of regulations offered by the federal government, the state can modify their own only by being more restrictive. The regulations are aimed at harvesting the surplus crop, but they also insure that a nucleus of birds remains to breed and yield a crop the succeeding year.

Each year from September through November, periodic aerial surveys are made over water areas to determine the migration patterns of the birds, the aquatic sites occupied, the length of time the sites are utilized, the estimated number of birds present, the value of different types of refuges and closed areas, and the condition of the wetland habitat. Material secured from these census flights and information furnished by cooperating field observers indicate that wildfowl migrate through Wisconsin on a broad front as wide as the state itself, but within this front are routes

which accommodate the bulk of the birds. In order of importance, the routes are the Fox–Wolf–Rock River Valleys, Lake Michigan shore, Mississippi River valley, and the Wisconsin River valley. The information secured via aerial surveys is used to help locate wetland acquisition projects, and to evaluate the development accomplished thereon. Periodic news releases furnish the interested public with the best available information on the sport, and they certainly aid the general public as well as the hunters in developing an appreciation of the out-of-doors. The areas censused at intervals include twenty-one lakes and marshes in Burnett county, a selected group of lakes in the Fox–Wolf River chain, a group of lakes and flowages in the northeast, and the important wildfowl areas in the Crawfish, Rock, and Yahara River channels in the southeast.

Hunters are contacted annually in the field and also through prepared questionnaires. The information secured from these polls is used to evaluate hunting regulations, and it serves as a guide for making recommendations for new laws and changing the old. In the fall of 1953, a managed waterfowl hunt, the first of its kind ever conducted in Wisconsin, was held on the federal portion of Horicon Marsh in Dodge county. This was based on information secured from the public and from aerial waterfowl censuses conducted during the previous three years. In its first year, 16,713 hunter trips were registered. The opportunity of securing a place to hunt, and the season's harvest of 1,717 ducks and 655 geese, largely Canadas, were well distributed among the people participating in the hunt.

In cooperation with the U. S. Fish and Wildlife Service and all of the states in the United States, a winter waterfowl inventory is conducted each January. The 1954 detailed survey disclosed that approximately 37,100 ducks, 100 coots, and 11,100 Canada geese, or a total of 48,300 waterfowl was present on about 75 open water sites in the inland portions of Wisconsin (Lake Michigan was not censused). The main duck species were the mallard, black duck, goldeneye, scaup, and the mergansers or fish ducks.

Throughout the year, special waterfowl problems which arise receive attention. One such problem is the collection and examination of waterfowl found dead. It was learned that lead poisoning causes the majority of the deaths, especially in the spring of the year when water levels are relatively low.

In the past, banding waterfowl to obtain management information has received considerable emphasis in Wisconsin. The information showed it was difficult to interpret results in one state without knowing where the birds handled actually nested. Through the Mississippi Flyway Council, an organization of the fourteen states in the Mississippi Flyway, plans were drafted to carry on a cooperative waterfowl banding project on Canadian breeding grounds in the summer of 1954. This exchange of labor between states, the U. S. Fish and Wildlife Service, and Canada, to secure mutually beneficial management information, is considered a major accomplishment toward achieving improved wildfowl management.

Waterfowl project personnel, together with coordination personnel, are associated closely with the Mississippi Flyway Council, an organization of the waterfowl states along the Flyway which discusses and makes recommendations on common problems of waterfowl management and regulation.

PHEASANT MANAGEMENT RESEARCH PROJECT

During the biennium measures were continued to provide information on the fluctuation in the pheasant population. It is important to determine population changes for public relations purposes, to calculate the effect of management practices, and to measure population mechanics over a series of years to learn what environmental factors are involved in causing the ups and downs in populations. Spring crowing counts corrected by winter sex ratios were continued in the pheasant counties by district game managers under the administration of the game survey project and by personnel of this project. Attempts at refinement of these techniques have been continued in an effort to assess a number of the variables.

Brood observations also have been continued through the biennium both by project personnel and by game field personnel. Final analysis and interpretation is made by this project. The 1952 and 1953 hatches were relatively early and successful, with large average brood sizes (7.6 and 7.9, respectively) and relatively high percentages of hens with young (80 to 85). A survey was completed of the quantitative distribution of pheasant populations in the state, and this was related to major aspects of topography, natural vegetation, soils, climate, and land use. Among the major conclusions were:

1. Because the rise in pheasant populations from 1948 to the present has been most rapid in what we now consider marginal range, this might indicate that our first-class pheasant range may be less optimum than when the populations first built up.

2. Since there appears to be a correlation between pheasant abundance and marshes, the loss of marshes through drainage, along with other aspects of the intensification of agriculture, may have damaged our optimum pheasant habitat severely, which from the beginning was the most intensively farmed part of the state.

Further effort has been directed toward estimating the values gained from stocking artificially-propagated pheasants. The results of two further years of work have followed closely the findings of earlier work; namely, that pheasants 10 to 12 weeks of age liberated in areas of good cover that sustain heavy hunting pressure, will give returns consistently of the order of 50 per cent. Two years of study in the production of spring-released hens on the Mazomanie public hunting grounds have shown that these birds produce on the average of only one chick per hen released in spring, findings which agree also with earlier similar studies. These results are now being prepared for publication.

Studies were begun to evaluate the role of the day-old chick program in increasing the pheasant population and kill. The first preliminary results are beginning to show that stocking is of greatest importance in marginal range where as much as half the bag may be stocked birds. In the better counties, five per cent or less of the kill may be stocked birds. There is some suggestion that the return in the areas of high pheasant populations may be better than that in the areas of low populations.

Various kill studies were carried on. A survey was undertaken to provide a quantitative picture of the seasonal distribution of the pheasant kill. Experience on the public hunting grounds has shown a heavy weighting of the kill in the early part of the season, with about 90 per cent sustained

in the first nine days; however, over the range at large the kill is spread out more through the season. The importance of this is to show the value of the lengthened season of recent years in increasing the kill. Department personnel were requested to collect road-killed pheasant hens and cocks and ruffed grouse in an attempt to learn the degree of harvest of ruffed grouse and of the illegal hen kill. These collections are fluoroscoped for the incidence of body shot which provides an indication of the per cent of the population harvested—statistics important in the management of these species.

In connection with the day-old chick program evaluation study, hunters have been sending in the wings and legs of pheasants from a number of study counties. In addition to their importance in the stocking evaluation study, they also provide hatching date and age ratio data from various parts of the pheasant range, and give refined data on population distribution. In order to refine the method of aging birds by wing primary work, preliminary activity was carried on in pens on the progress of the primary molt.

Breeding studies were continued to provide fundamental information on the genetics of several subspecies and species of pheasants. The objective has been to study the inheritance of various traits, which when bred selectively into birds to be released will enable higher survival under Wisconsin conditions. Among the traits being studied and bred selectively are: Egg production, fertility and hatchability of eggs, growth rates, certain characteristics of down and feather development, various aspects of behavior, mortality in pens, and others. Further studies were carried on cooperatively with the University on the physiology of the pheasant. Since various elements in the environment operate on the bird through its physiology, it is important to have information on this subject in order to be able to interpret these environmental effects.

Cooperative studies in the Agronomy Department were continued to explore the possibilities of controlling plant formations with chemical sprays. One implication from this has been the use of pre-emergent spraying of game bird food patches to control weeds, eliminate the necessity for cultivation, and hence reduce the cost of food-patch planting.

In the first year of the biennium, collection of quail wings for hatching date and age ratio information was continued. In the second year, all quail studies were transferred to the game survey project. In connection with pheasant habitat surveys, studies were made of squirrel habitat, and kill statistics were analyzed in an attempt to relate the two. Personnel of the pheasant-quail project cooperated with the game survey project in experimental wild turkey introductions.

Considerable time was spent during the biennium in attempting to complete final reports.

GROUSE MANAGEMENT RESEARCH PROJECT

Ruffed Grouse Section—The current emphasis on ruffed grouse studies is to determine how hunting affects their abundance, and how this important resource can be managed for the maximum benefit of both hunters and tourists. With this objective in mind, our first important task was to develop methods for following population trends. Currently we are using flush

Restored old-fashioned pump and smoke house, Wade House state park.

counts in fall and winter, and counts on the number of drumming males in spring. The combined data gives us an accurate idea of whether the population is up or down. During the hunting season, sportsmen send in from three to seven thousand wings and tails from ruffed grouse they have shot, for sex and age studies. By continuing this analysis each year we can detect any change in the sex or age ratio which affects the future abundance of these birds.

An example of how population inventory can be used for management can be shown in southwestern Wisconsin. In the spring of 1953, drumming counts in Sauk and Iowa counties indicated breeding populations equal to those in central and northern Wisconsin. Since the kill in the southwestern counties was very light in comparison with the north, we recommended a more liberal hunting season so as to better utilize this resource. An extended season enacted in 1953 and 1954 resulted in a substantial increase in the harvest, which thereby provided numerous hours of first-class outdoor recreation for thousands of hunters.

To gain detailed knowledge of the life span, movements, and hunting kill, we banded about 350 ruffed grouse in Dunn and Rusk counties in 1953 and 1954. Wisconsin was the first state to develop effective methods for trapping partridge alive so that they could be banded. The return of these bands by hunters has given us valuable information on how many birds are being shot. In Dunn and Rusk counties in 1953, hunters shot between thirty and forty per cent of the population, which indicate good utilization of this game resource for those areas. The population in Dunn and Rusk counties

dropped sharply in 1954. Harvest studies here in 1954 indicated that hunters took only about five per cent of the total number present. This light harvest indicates we can safely leave the season open during periods of scarcity without adversely affecting future populations. By keeping the season open we can allow a harvest in those counties where the local population happens to be abundant. Thus, our banding studies will allow us to evaluate our present hunting regulations scientifically so as eliminate all guesswork.

Prairie Grouse Section—Research on prairie chickens and sharptails continues to follow the three approaches outlined in the last biennial report. Display ground surveys show lower populations than in the high years of 1950 and 1951. The decline, however, has not been steady and continuous. Although spring counts in 1952 generally were about 50% below the high, counts in 1953 were higher than in 1952 on the Portage county and Plainfield prairie chicken areas by about 25% and 10%, respectively, and by about 35% on the Douglas county sharptail area. Spring counts on the Portage county area in 1954 were about 20% lower than in 1953, while on the Plainfield area the count was about 10% higher; the Douglas county area was down about 20%. These counts will be continued in order to give clearer perspective on population changes through a complete cyclic period. The project has taken some 600 people to watch prairie chickens in display during the past five springs, an undertaking which has not only given hundreds of hours of observational data, but has also stimulated public interest in the bird itself. In 1953 and 1954, for example, about 410 individuals contributed 475 man-mornings.

An additional 321 prairie chickens, 5 sharptails, and 8 prairie chicken-sharptail hybrids have been banded on the Portage county area during the last two winters, despite the exceptionally mild and open winter of 1953–54. The birds banded in the winter of 1949–50 had practically disappeared by the spring of 1954. Since the first two banded year-classes were hunted during the open season of 1951, no unshot year-class has yet been followed to the vanishing point. Information on movements derived from banded birds has been extremely important in showing how far apart prairie chicken winter food patches should be placed, thus reducing the cost of winter feeding. Food patches are now contracted for in advance at the rate of $25.00 per acre; there were seven corn patches of two to three acres each on the Portage county area in the winter of 1953–54.

The project has prepared maps for state-wide distribution on both species, and attention is focused on the specific areas in which management is both necessary and feasible. A popular bulletin, "Sharptails Into the Shadows?" (Wisconsin Wildlife No. 1), helped to bring the need for sharptail management to the attention of the public. Through the efforts of the game management staff, and with the cooperation of the U. S. Forest Service, several management areas have been established. There is more to be done, of course, but a promising start has been made.

The plan for prairie chicken management on the Portage county area (Buena Vista Marsh) is ready to be put into operation. Cover types on the area and their contribution to nesting and rearing, as mapped in 1953, are shown on page 72.

Quality of Nesting and Rearing Cover	Cover Type and Number of Acres					
	Plowland and Fallow	*Tame Hay*	*Seeded Pasture*	*Grass–Herbs (Mainly Wild Stands of Bluegrass)*	*Timber, Brush, Farmyards, and Miscellaneous*	*Total*
Good	0	9	0	3,207	0	3,216
Medium	70	103	20	7,304	0	7,497
Poor	170	3,559	54	4,456	0	8,239
None	7,500	949	553	6,276	11,429	26,707
Totals	7,740	4,620	627	21,243	11,429	45,659

The unusually high proportion of grassland (60%), and most particularly of long-term grassland (grass-herbs 47%) makes this and the associated and similar Leola Marsh not only the best remaining prairie chicken area in Wisconsin, but also the *only* area of any size in which the species certainly can be preserved. The need for management here is highlighted by changes in the Buena Vista Marsh during the last two years. Thus, 4,867 acres of good and medium-quality nesting and rearing cover were wiped out or reduced to poor quality from 1951 to 1953, while only 988 acres improved to good or medium quality during the same period.

The key to prairie chicken production is grass—grass which is (1) tall enough and dense enough to afford cover at least through July; and is (2) on permanent or long-term sod, since prairie chickens do not fit into the usual short farm rotation. On the Buena Vista Marsh, prairie chickens are now produced on a few large and centrally located blocks of land owned or leased by the grass seed companies, and on many smaller parcels of grassland scattered throughout the marsh. The scattered nesting areas are especially subject to disturbance, and for that reason the mangement plan proposes that a *permanent* scatter-pattern of nesting and rearing areas be established throughout the marsh to the extent of approximately one forty per section—a total of 3,200 acres scattered through the 46,000-acre area. State purchase of the needed acres is complicated by the problem of local taxes. Private individuals show a definite and most encouraging wish to help save the prairie chicken—an 80-acre parcel kept on the tax roll has been bought specifically for prairie chicken management by the Wisconsin Conservation League.

FUR RESEARCH PROJECT

This project continues to operate as two subsections—the fur section deals mainly with muskrat and mink, and the beaver section deals with beaver and otter.

Fur Section—A publication was made of the findings of the level-ditching project for muskrat management at Horicon Marsh. Studies continued on these. A take of 881 rats was achieved on the ditches in 1951–52, which was a record. Of 199 litter-tagged muskrats, 171 were recovered during trapping operations, which indicates the effective manner in which ditching permits harvesting. This was aided by the very dry condition of the marsh.

Tag loss is estimated at 6 per cent for the period from tagging to fall and winter trapping.

Following the highly effective trapping season of 1951–52, the productivity of female muskrats zoomed to give a record production on the marsh of 13.3 young per adult female (based on 1952–53 winter sex and age ratios). Trapping conditions, and hence the harvest, were poor in 1952–53, which left an excessive breeding population in 1953. Productivity dropped in 1953 to 9.6 young per adult female.

Among approximately 500 rats litter-tagged in 1953, the peak of births occurred about May 3. Of these, only 33 per cent were recovered in the ensuing winter, which correlated with a light harvest of the very large population. Litters averaged 7.6 in size. Of the recoveries of ear-tagged rats, 79 per cent were taken from the same area trapping unit, 17 per cent from adjoining units, and 4 per cent from units farther removed from the original tagging site. The high turnover rate in the muskrat is demonstrated by the dearth of recoveries of tagged animals over three years old. The oldest recovery made was 976 days of age.

A complex of disease conditions struck the high population on the marsh in the fall of 1953. No single organism was found responsible, although Errington's disease often is a cause of muskrat mortality in Wisconsin. Pathological studies indicated that the causative agent is an organism of the *Clostridium* type.

The project was instrumental in recommending the water level drawdown in the summer of 1952 following late spring flood conditions on the marsh, which in combination with previous conditions had removed much of the vegetative area of the marsh. The trend to open water was halted by the stimulation of old emergent vegetation to growth, and the establishment of new.

A total of 586 known-age pelts was studied for priming pattern. Among immature rats, four general types of patterns were apparent. There was overlap in these among age of occurrence, and it is not yet possible to clearly differentiate age groups by this means.

Beaver Section—An analysis was made of beaver damage complaints from 1935–1953. From 1935 to 1938, the most common type reported was timber damage due to beaver being found commonly only in the northern one-half of Wisconsin. From 1938–53 the most common damage swung from timber to agriculture. This added support to the belief that the maximum range extension of beaver had reached its climax in the late forties with a push into the central and southwestern parts of Wisconsin. The fact that the average complaint beaver colony had 2.9 beaver live-trapped from it, gave further support to our belief that the average beaver colony in the state contains about 5 beaver. Much additional, very important, and significant data was obtained from this lengthy analysis, including a very good idea of where the areas are in the state that have the most beaver complaints annually.

Beaver population trends from 1950 to 1952 were analyzed, and it was found that there was a very slight decrease in the population during this period on a state-wide basis. This was determined from data from trappers, conservation wardens, department field personnel contacts, and the project leader. The decrease in this short period would have been more pronounced

if we had not been losing hundreds of trappers each year due mostly to the nationwide drop in the price of beaver pelts. Trapper interest decreased quite rapidly as the price fell.

Aerial transects were mapped out for Areas I, II, and III. Thirteen of these were laid out, and plans were made to correct the routes a little each year until perfected. The difficulties experienced were to be studied also. By the fall of 1953 these transects were in excellent shape, and it was admitted by all personnel who took part in flying them that they were accurate in indicating population trends and revealed various other information of interest. They will be a permanent part of the future management of beaver, and will be flown every fall.

Beaver movement studies were developed, and all damage-complaint beaver that were live-trapped were also ear-tagged. They were then released on streams and lakes. Later, retrapping of these by beaver trappers enabled movements to be determined for many of them. It was found that stream-released beaver moved an average of 5.4 miles, while pond and lake-released beaver moved less than a mile on the average. This has led to the releasing of complaint beaver in ponds and lakes whenever possible in an effort to keep them from moving again into a complaint situation.

Beaver disease was studied during an outbreak of an epizootic in the spring of 1953. Two hundred and two beaver colonies were reported by trappers as having evidence of disease, and out of this number eighty colonies finally were classified as being definitely affected by the disease. Too little data existed on the other colonies to determine whether or not they were infected. The central part of northern Wisconsin was the area most affected by this disease. While it was quite severe, it did not wipe out the population in any sense of the word. It was impossible to survey complete beaver habitats to determine accurately the loss, but it was estimated roughly that we lost at least 1,000 to 1,500 beaver. Every carcass autopsied was in advanced decomposition, and therefore pathogens were very difficult to isolate. In one case tularemia was found, and therefore it appears that this disease was operating to some extent in the die off. The gross pathological appearances of all carcasses were indicative of tularemia, but other diseases also leave necrotic foci in liver and spleen. A mouse population that was very much more dense than normal was found in the same area as the beaver disease. This led to the theory that the beaver might have become infected from this source, as the mice concentrated and died on the slopes and vegetational encroachments of the more or less stagnant beaver ponds. Nothing more definite than this was found during the investigation.

Beaver range was studied from the viewpoints of current and potential range. The present range of the beaver generally was found to be in very good shape from the food aspect, and without doubt the beaver was at its maximum range extension in Wisconsin at this time. As near as can be seen, the future of the beaver range is less promising. In many parts of the northern half of the state, the plant succession is trending from aspen to other more dominant, shade-tolerant species, such as maple, fir, spruce, etc. It is therefore the general conclusion of the project leader that in the future we will be losing beaver-carrying capacity in many areas, with a consequent reduction in beaver numbers.

Beaver pond studies were continued as they were in the summer of 1950 and 1951, and it was found again that the beaver pond offers improved habitat niches for many species of game and fur animals. This study has been so revealing that a lengthy report will be made in the future, possibly in the form of a technical bulletin.

Beaver reproductive studies were continued by analyzing thoroughly the data obtained in three years of carcass collecting and dissecting. It was found that the average litter size in Wisconsin is 4.5 young, that the larger females have the largest litters, that the peak of embryo formation is in early February, and that breeding thus occurs largely just before this time. The samples indicated that between 12 and 15 per cent of the females in a normal population are pregnant, and this would mean that the potential annual increase expected in beaver could conceivably be as high as 60%, excluding post partum mortality. Different external measurements of beaver were tested to see if frequency groupings indicated distinct age classes. Weight was the only one that showed any hope of being useful, and here it would not be 100% accurate. It seems that no simple way of aging beaver accurately is possible.

WILDLIFE PATHOLOGY STUDY

It is necessary to keep constantly on the lookout for disease outbreaks, to diagnose cases observed, and to study methods of disease prevention in wildlife populations. To accomplish this the wildlife pathology project carries on a combination of field observation and study, and controlled laboratory experiments.

All diseased and dead wildlife specimens found in the field are examined. Such examinations afford an excellent opportunity to detect any significant diseases or parasitisms which may be occurring among the wildlife populations of the state, particularly those which may be transmissible to man.

The pathology project continues to solicit the cooperation of other wildlife research projects to submit blood smears from all live and freshly-killed specimens handled during the course of other studies. Records are accumulating on the incidence and severity of blood parasitisms in grouse and waterfowl, and may prove especially effective in studying potential blood diseases that might be responsible for ruffed grouse population fluctuations; for example, the percentage of ruffed grouse infected with *Leucocytozoon*, a blood parasite, has increased from 19 per cent in 1949 to 81 per cent in 1952. Continued study will give a better idea of the influence of this heavy parasitism on the population level, particularly under unfavorable weather conditions.

Significant losses have occurred recently in the beaver population of the state due to disease. Although at least one beaver succumbed to tularemia, an initial study suggests the possibility that the pathogen, *Pseudomonas hydrophila*, which causes the disease "red leg" in frogs, may produce disease in aquatic animals.

The results of a year-round study on the ability of the hen pheasant to withstand stress have been written up for publication. Further studies

on the stress survival of pheasants were completed by the Department of Zoology at the University of Wisconsin. These laboratory investigations were concerned with the effects of environmental changes in the physiology and endocrine system of ring-necked pheasants.

GAME SURVEY PROJECT

The game survey project is responsible for the administration of surveys designed to obtain information on the status of game animals, as well as to establish or refine new or existing methods. Many of these have been initiated and tested by other research projects. At present there are fairly well established techniques applying to deer, pheasants, quail, ruffed grouse, and prairie grouse. Game populations usually undergo considerable seasonal swing during the course of the year, and it is desirable to be able to follow these changes. The seasonal approach can shed considerable light on the cause of variation in the status of species as it highlights the change period. A great many surveys are performed by area game management personnel who report their findings to this project. The procedures are being incorporated into a "technical specifications" series, and it is expected that this will provide a revisable handbook of techniques when all surveys are included.

The aid of rural mail carriers is being enlisted for a Hungarian partridge census. A preliminary questionnaire in early 1954 suggested that good results may be obtained from such an activity. A muskrat survey based on sign evaluation is also being attempted.

The deer yard survey procedure was increased in scope with the cooperation of the Botany Department of the University of Wisconsin. The additional information requested enables a classification to be made of the yards from the standpoint of plant succession; thus, a dynamic rather than a static approach can be made on deer yard management.

Cooperative surveys on migratory game birds are administered in cooperation with the U. S. Fish and Wildlife Service.

The facilities of the Federal-State Crop Reporting Service continue to be used for the conduct of several questionnaires involving game on farms.

A series of range maps of the various game species was reviewed by this project and the many other research projects, for reconciliation of abundance classification between areas, and for corrections. These maps were prepared by game division area and staff personnel.

The third year of the experimental game kill questionnaire was completed. Returns on this poll-type mailed questionnaire have remained at a high level during all three years of the experiment. Generally speaking, estimates of the harvest by the experimental method have given slightly lower results. This system has been recommended for replacement of the regular hunter reporting method, and steps are being taken to activate the necessary statutory revisions to permit its use. The biggest disadvantage is that it is necessary to wait until near the end of the hunting season to insure drawing a random sample of hunters, because names are selected from license buyers. This means the questionnaires may not be distributed

until after the close of the last season, and hunters receiving the questionnaire have to rely heavily upon memory to complete it. It is probable that this difficulty can be circumvented. Advantages of the system are a high rate of return, a well randomized sample of hunters, and ease of handling.

In addition to the development and administration of studies related directly to game populations and harvests, the game survey projects furnishes statistical service to other projects, mainly in the analysis of data. The project cooperated with the Fish and Wildlife Service in a survey of the Fox River valley to determine its recreational and wildlife-producing potentialities.

An annotated bibliography of cotton tail management papers was prepared. A paper on the audio census of game birds was presented at the Midwest Wildlife Conference in 1952. A survey of controlled deer hunting in all of the states and provinces was conducted.

An area census of bob-white quail on the Prairie du Sac area indicates that populations have been reduced to a rather low level. To a great extent, brushy roadside and fencerow cover have been removed from the area. Limited collections of material from quail hunters have been continued.

The project transplanted bobwhite quail to the southern unit of the Kettle Moraine Forest in a restocking attempt. Considerable dispersal of the birds occurred, and it remains to be seen whether the plant becomes dissipated or takes hold. The previous planting in the River Hills region of Milwaukee county still is in existence, but apparently some movement of the birds has occurred to the north into Ozaukee county. A stocking of 70 semi-wild turkeys was made in the Meadow Valley area in central Wisconsin, just at the close of the biennium.

A survey has been initiated to inventory the wetland areas in the state. This has been accomplished for Racine county, and is continuing in other adjoining counties. The one in Racine showed a loss of 87 per cent of the wetland area of the county since 1900. It is desired to complete the counties of more critical need, and bring in the assistance of the district game managers to complete the inventory. Data taken include mapping, acreage, type of wetland, predominant vegetation, adjoining cover, probability of drainage, and whether or not grazed. The inventory will point up the losses occurring in game habitat, and will serve as groundwork for any management measures that can be taken to combat these losses.

Law Enforcement

It is our sincere belief that any law enforcement agency, to fully live up to its duties and responsibilities, must have a sound program of prevention as well as a sound program of apprehension. We believe that this kind of a program, coupled with proper police power and adequate penalties for the habitual or repeater-type violator will eventually bring about the desired results, providing also, that the agency has the support of the public, the courts, and the prosecutor's office.

It has also been our contention that the police power of the state is the keystone which holds up the broad arch of conservation.

There are two schools of thought as to what role the conservation officer should play in the conservation program: (1) those who believe that the functions of conservation officers should be multiple, and (2) those who believe that the officer cannot do a proper job of enforcement if he has multiple functions to perform.

We wish to state here that we are in accord with the policy that the conservation officer performs manifold duties, and we have operated under this policy throughout the history of conservation in Wisconsin. Conservation today is in its broad sense *a salesman's job.*

With this fact in mind, it is necessary that new recruits who are to be employed have qualifications and requisites that will best fit them for this role of conservation officer. Further, they must be emotionally stable, resourceful, tactful, and alert. He must be honest and fair in all of his dealings. It is of vital importance that they must be leaders, and that they be trained in all policies and programs of the Conservation Department. In addition they must know these three things: (1) the law, (2) the public's rights, and (3) their own rights.

Good public relations come first within our own Department because this Department cannot possibly have the best possible public relations on the outside unless we first have such good relations on the inside, and that is why constant in-service training is necessary. Because of their strategic or regional locations in various parts of the state, it is necessary that the conservation officer be the interpreter and salesman for the Conservation Department. In order to carry out this function, it is of dire necessity that they have full knowledge of the multiple programs that are grouped as conservation. With their practical knowledge, the conservation officers are in the best position to dispense and sell the over-all program to the public.

It is recognized that one of the most potent tools available to game or fish management is regulation and protection. Because this is true, it is of vital importance that the officers have a broad understanding and be a part of such management. The officers can be considered one of the important arms of management in their respective areas.

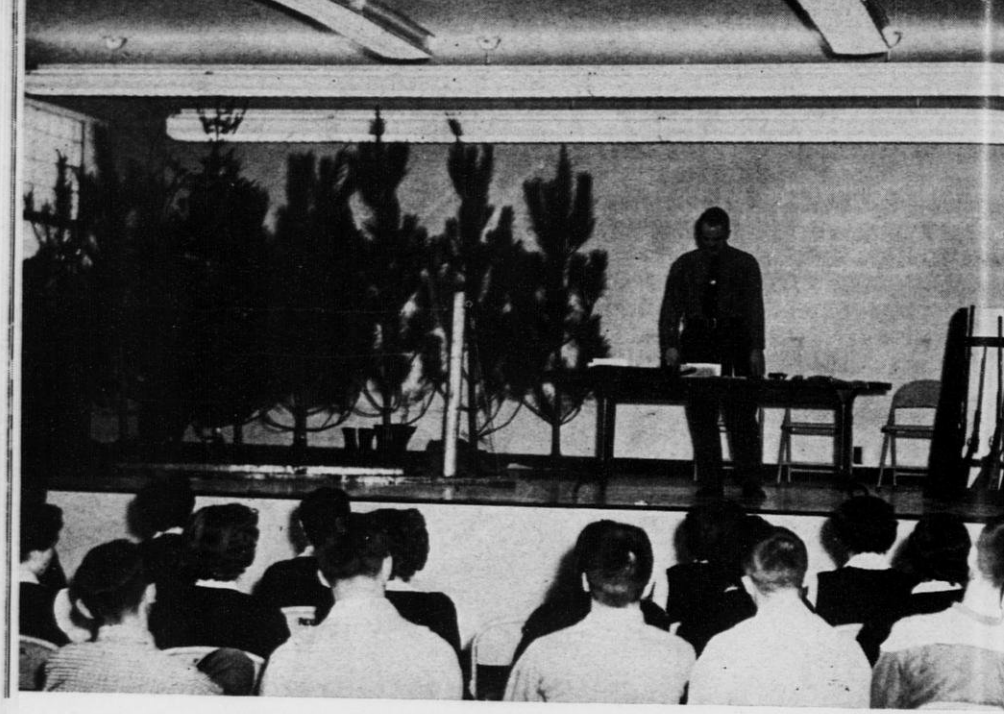
Illegal game seized by wardens. The department places heavy emphasis on stamping out commercial violation.

Again this year this department has sponsored a minor's gun safety bill; and if the legislature sees fit to pass this bill, the law enforcement division of the Conservation Department will administer the giving of instructions to all new hunters who are 12 to 21 years of age. It is our plan not only to teach them the safe handling of firearms, but also to teach them the basic concepts of conservation.

We are also continuing to contact the schools in the state with a conservation education day program, of which the law enforcement division is a part. We believe that through education we can eventually obtain observance of our conservation laws.

For the biennial ending June 30, 1954, 6,804 persons were arrested. Our record shows that we continue to have a 99 plus percentage of game law convictions. We do not wish to imply here that we are proud of this arrest record, as we would like to see the time come when the arrest record would be at a minimum. The goal in our division is not to see how many people we can arrest in any given period of time, but rather to see how many people we can prevent from violating the law. We also had during this period of time 3,238 seizures which consisted of game and fish and fur taken illegally as well as personal property which was confiscated by the courts as an added penalty for violating the law. All fine monies go to the State School Fund.

Under a specific section of the statutes the Conservation Department is required to pay actual damage caused by deer and bear. The legislature has placed a ceiling on these damages of $40,000 in any one year. The law



The modern warden is an educator as well as a law enforcement officer. Here a warden participates in a school Conservation Day program.

enforcement division investigates and processes all deer and bear damage claims and also investigates other damage claims where there is no payment provided for by legislation.

The beaver control section, which was formerly a part of the law enforcement division, was transferred to the game management division as this activity more properly comes under game management administration than law enforcement administration.

In 1933 the law enforcement division had approximately 65 conservation wardens. That same year we sold 58,467 resident fishing licenses and 42,976 nonresident fishing licenses. The record shows further that 185,095 hunting licenses were sold.

In 1953 we sold 743,066 resident fishing licenses and 282,997 nonresident fishing licenses. We sold 629,858 hunting licenses in this same year.

This will give an idea of the tremendous interest and increase in the sports of hunting and fishing; and, also, in this past biennium, we had 100 wardens to supervise the hunting and fishing activities of this great increase of persons participating.

If it were not for the enforcement division, it would be an accepted fact that people would not purchase the hunting and fishing licenses as they should; and, consequently, there must be adequate provision made for the protection service so that the department will get its fair share of the revenue from the sales of these licenses. Wisconsin in the past three years sold more nonresident fishing licenses than any other state in the Union.

Our main objective, as stated before, is to prevent as many violations as we possibly can. Conservation law enforcement is, in our opinion, one of the most difficult jobs of enforcement that there is. We have a small group of men assigned to police more than 56,000 square miles of land area, and in addition a water area in Lake Michigan, Green Bay and Lake Superior, which is one-eleventh the size of the land area of the state, where commercial fishing operations take place.

Much progress has been made in gaining the support of the public and courts and district attorneys as the people of this state are realizing more and more that conservation and our natural resources need proper protection as Wisconsin is blessed with a great share of the nation's wealth in this respect. We try to instill in the minds of the people that it is not only in the sportsmen's interest that the natural resources should be protected but in all of the people's interest as without proper land use, we cannot have life itself. Further, the economy of the state is geared to the type of program in a great degree that is administered by the State Conservation Commission. As has been pointed out before, more nonresidents come into Wisconsin for fishing purposes than any other state in the Union; and, of course, they spend a large amount of money in our state which makes good business for everyone.

By working together as a team with all of the public, elected officials and other state governmental agencies, the best results can be obtained.

Forest Protection

The twenty years preceding this biennium saw forest fire protection in Wisconsin develop from a puny, undermanned, unequipped and ineffective effort into an efficient, successful and nationally-recognized accomplishment which has changed the thinking and economic history of northern Wisconsin. The huge areas of barren, burned-over, tax-delinquent lands are no more. Nature released from the scorching handicap of uncontrolled fire has brought forth a new forest cover. Much of this new growth was at first considered inferior and of questionable value, but recent developments in paper making have opened up ready markets for the aspen.

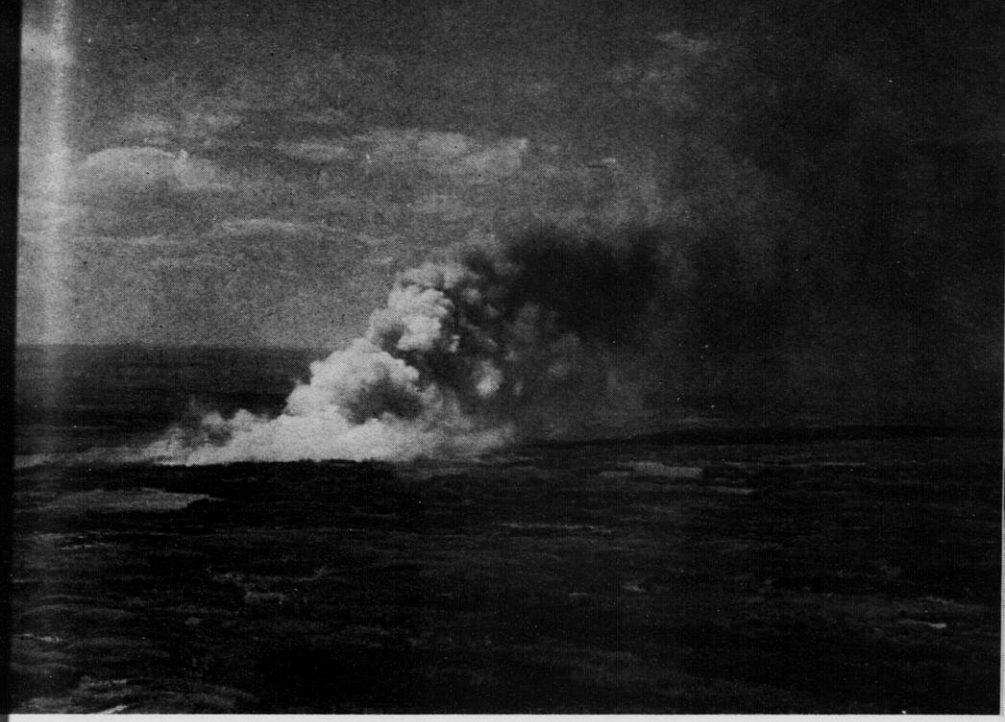
This 20-year period was marked by a rapid expansion in facilities and equipment in its youth, and by increased training, organization, and education of the using public in fire prevention in the latter part. The 1932 half million dollar relief appropriation, the CCC camps starting in 1933 closely followed by the WPA work program provided a source of manpower and materials eagerly transformed by the forest rangers into fire lanes, telephone lines, ranger stations, garages, and lookout towers. Regular budget money could then be stretched to cover the purchase of trucks, tractors, fireplows, pumpers, and materials out of which many trailers were built. Radio communication was introduced, and the use of airplanes started.

A generation ago there was considerable doubt that forest fires could be controlled. It now has been demonstrated that they can, and at reasonable cost. Wisconsin has progressed far in solving its forest fire problems, but the threat of forest fire remains. There can be no letup in protection effort if forest fires are to be kept under control. A constant effort must be made to hold the line and do the job more efficiently.

A reasonable margin of safety beyond normal requirements is also essential, since emergency conditions occur periodically and one bad year can wipe out all that has been gained in a generation. Fire control seeks to reach a point where fire losses can be so reduced that forest property becomes an insurable risk. While this does not guarantee the individual property owner against loss, it makes it feasible for him to protect himself by insurance or additional methods if he so desires.

Adequate forest protection is one of the prime requisites of any conservation program. Successful forest protection depends upon favorable public sentiment, wise regulation, strict enforcement, an intensive program of prevention, and an organization equipped to take prompt and definite action on all fires.

It has been and still remains the policy of the forest protection division to take speedy, energetic, and thorough suppression action on all fires that occur within the boundaries of the organized districts. This means that while the number of fires which may occur is always an unknown factor,



Typical forest fire scene as viewed from the air.

the fire plan must include decisive action to control all fires immediately, or to make a thorough analysis of the situation and of the control of every such fire within the first work period.

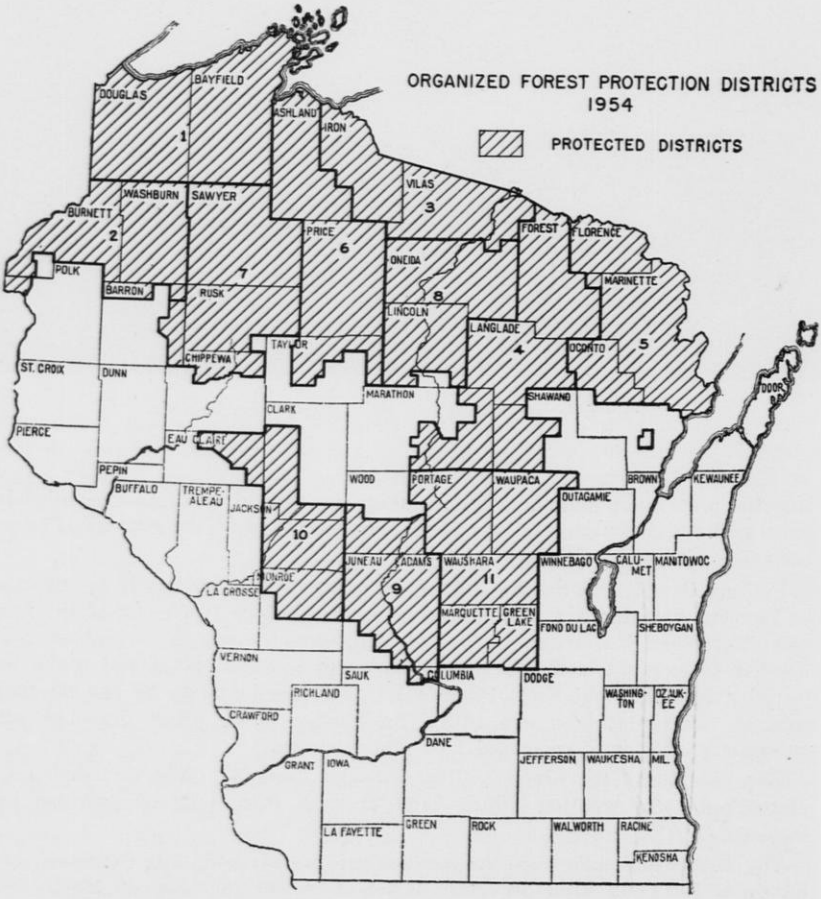
Failing in this effort, the attack each succeeding day will be planned and executed with the aim of securing control before 10 o'clock of the next morning. When the fire is controlled, suppression work is carried on until the fire is extinguished. The permanent and seasonal personnel make the initial attack on most fires. When conditions are found to be beyond their control, additional men are called into action from other divisions and emergency employes are hired from the vicinity.

The biennium from July 1, 1952 through June 30, 1954 included some exceedingly dry weather which brought with it periods of extreme fire hazards.

The 1952 fire season was the most severe since 1948. One thousand, two hundred, forty-six fires occurred, which were an increase of 166% over last year's total of 464 fires. The 1,246 fires burned 4,962 acres, which represents a 142% increase in total acres burned in 1952. The total damage increased from $14,518 in 1951 to $35,301 in 1952. The percentage of fires by causes remained approximately the same. The largest fire occurred on October 20 when 900 acres burned over. It is noteworthy to mention that again in 1952 over 93% of the fires were held to 10 acres or less.

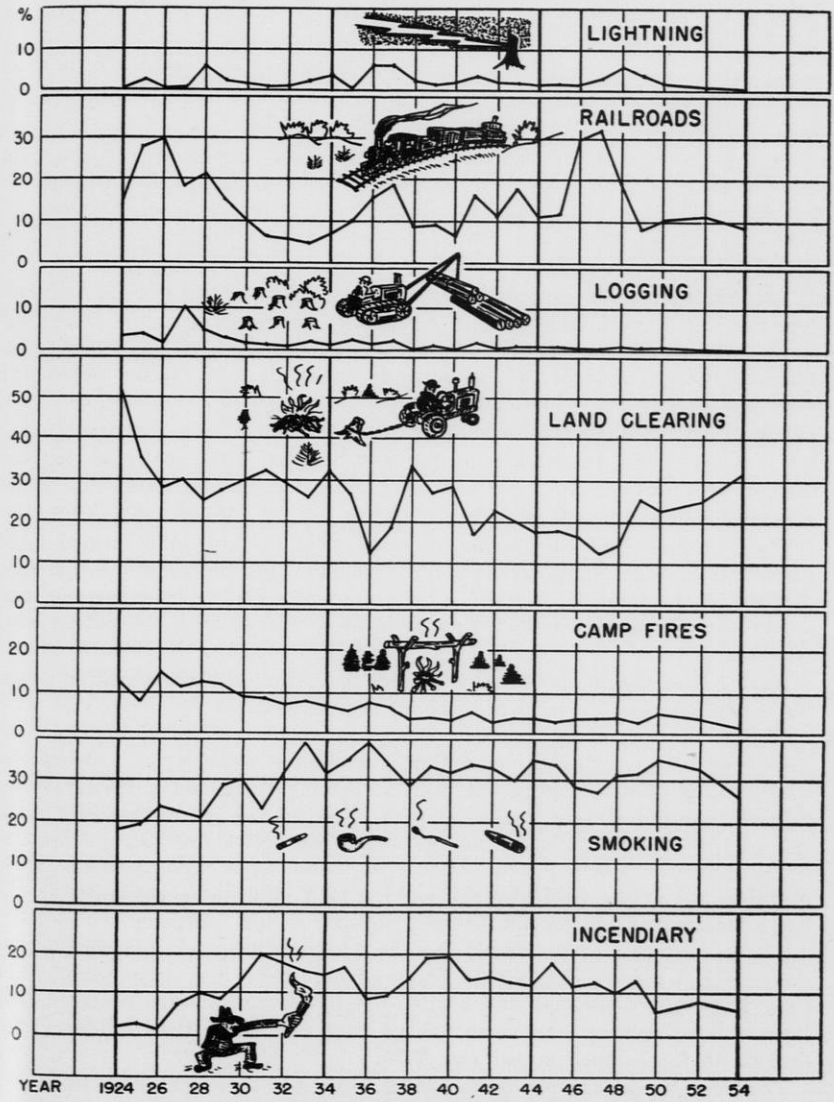
The 1952 fire season was one of the driest on record. This fact is reflected in the increase in the number of fires that occurred and the total acres burned as well as higher damage figures.

In the fire protection districts the rainfall from mid-September to mid-November was only a small fraction of the normal amount. In the central district rainfall during this period was only 7% of normal. In the northern districts the percentage of normal ranged from about 9% in the northwest districts to 11% in the north central and 14% in the northeast. During this time a number of areas had no measurable precipitation for as much as



32 days, and no appreciable amount for nearly 70 days. The burning index increased during late September and became high to extreme in early October. These conditions prevailed well into the fall hunting seasons or until general snow fell on November 25.

The 1953 fire season opened with moderate to severe conditions and ended in a similar manner. The drought of the fall of 1952 was carried on into the spring of 1953, and the fire conditions were serious as soon as the ground became bare. High winds were frequent during April and May,



Relative importance of the principal causes of forest fires by years — Wisconsin, 1924 – 1954

and two of the largest fires of recent years burned 1500 acres and 1900 acres respectively in the month of May.

Rainfall during the midsummer was generally above normal, but a severe drought commenced in September and continued through October and most of November until snowfall. The severity of the fall fire conditions caused a postponement of the deer season for one week, as the forest fuels were so critical that it was deemed too dangerous to allow the added risk of deer hunting.

During the 1953 fire season, 1,218 fires occurred, resulting in 9,799 acres burned with damage estimated at $64,941.00. This compares unfavorably with the 1952 season of 1,246 fires burning 4,962 acres with damage estimated at $35,301.00. Of the total 1,218 fires in 1953, over 92% were held to ten acres or less.

The 1952 and 1953 records were similar in the fall fire season characteristics and abnormal length of season. In both instances the conditions were right for serious fires, and only the cooperation of the forest-using public and the ability of the fire control organization to rapidly detect and suppress those fires which did occur made it possible to hold the total annual burn within acceptable limits.

Fires occurred each month in the first half of 1954 with 12% during March, 48% during April, 31% during May, 8% during June, and about 1% of the total number of fires occurring during January and February.

The 779 fires that occurred during the first half of 1954 burned 6,384 acres and caused damage estimated at $26,035. This represents an increase of 13% in the number of fires, a decrease of 23.5% in acres burned, and a decrease of 49.4% in reported damage, as compared with the same period in 1953.

During the biennium Wisconsin kept her fire loss comparatively low while fire damage ran high throughout the nation.

Within the organized districts, field equipment quotas have just about been reached, so during the biennium it was more a matter of renewing or modernizing existing equipment than increasing the amount. However, the original Stinson station wagon airplane was traded in for a new Cessna 180, and a two-place Piper Cub was added for better fire patrol work due to its slower cruising speed. Additional radio units were purchased for portable use in the field and are carried in a detachable container in the large tractor-hauling trucks, thereby serving a dual purpose.

About one third of the truck fleet, or 51 units, were exchanged for new units with a consequent reinstallation of accessory fire equipment on the new. Twenty-two pickups and 29 two-ton SWB trucks were replaced. The tractor fleet remains the same except that one small-size bulldozer was exchanged for a much larger size TD–14.

The Tomahawk shop also constructed three new all-steel tilting-bed trailers, four narrow-gauge water tank trailers, and four light-duty, rubber-tired fire plows. Modernization of equipment included the installation of 30 new heavy-duty Wisconsin two-way plow bottoms on older model plows, the installation of electric brakes on eight dual-wheel water tank trailers, and the replacement of wooden platforms with steel channels on eight older heavy-duty tilting-bed trailers.

Bulk shipment of state nursery stock.

In trying times the headquarters at Tomahawk continues to function as a center for directing the distribution of extra men and equipment as well as the transmitting of messages. As a central warehouse it provides on short notice everything from office forms and field equipment to fire prevention material.

A new district comprising all of Portage, Waupaca, Waushara, Marquette and Green Lake counties was organized and activated April 1, 1954. Forestry values in this group of counties are low compared to the extreme northern parts of our state; although other values (watershed, wildlife, soils and esthetic) make up an impressive total. Therefore, it was not felt that the degree of protection required should approach that in the organized districts but should be more in keeping with actual needs.

After careful consideration of the fire potential, no attempt was made to institute a burning permit system, but rather to prohibit burning during high hazard periods. As an alternate to a tower detection system, a plan for the use of airplanes supplemented by the people who live or travel the area was activated with fair results.

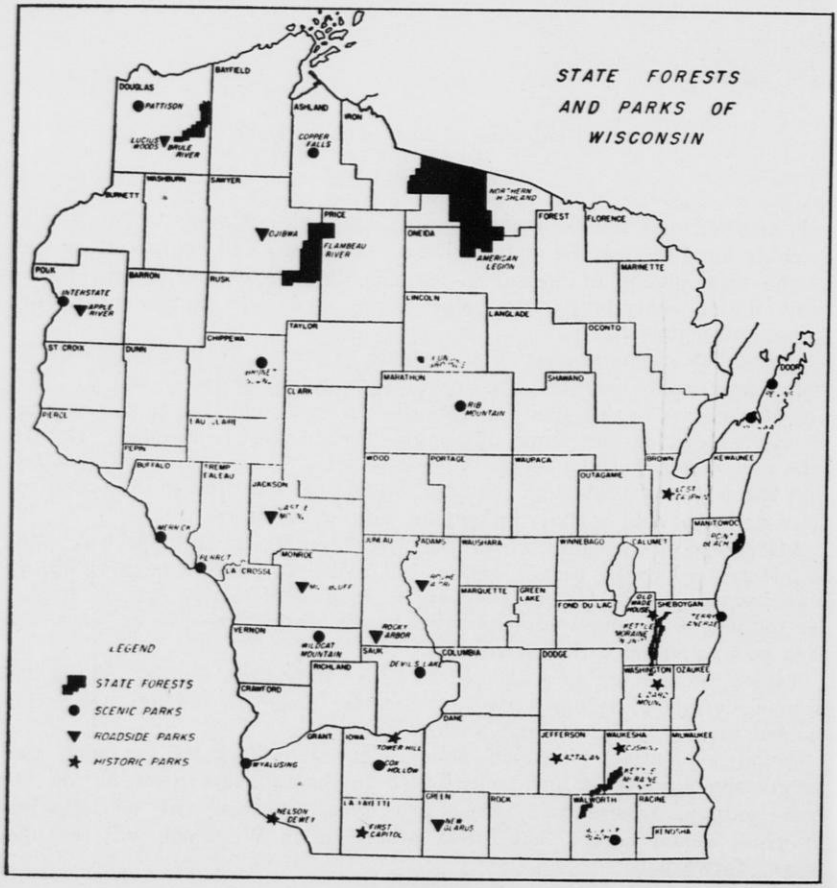
Forest fire prevention continued to be an important activity. There has been no letup in the popularity of "Smokey Bear" as the fire prevention symbol through the State and Nation.

Sound legislation, a stable policy, consistent financial support, and progressive leadership have contributed to the progress made during the past century. Adherence to these principles, together with technological progress should assure that forest protection in Wisconsin will continue to go "forward."

Forests and Parks

The biennial report of the activities of the Division of Forests and Parks has been divided into three parts: (1) State Forests, (2) State Forest Nurseries, and (3) State Parks.

From a comparison of definitions, values and legislative purpose and intent, it is found that forests and parks have many things in common. The minor purpose of forests corresponds with the major purposes of parks, and vice versa; the main purposes of each are different from the main and essential purposes of the other. The forests and parks of Wisconsin supplement and complement each other. Both are indispensable, yet their differentiation is largely a matter of degree.



WISCONSIN STATE FORESTS

Name	*Location and State Highway Connection*	*Dominant Feature*	*Swimming*	*Camping*	*Electrical Outlets*	*Store*	*Address of Forest Manager*	*Water Frontage*	*Picnic Grounds*
STATE FORESTS									
American Legion	Oneida Co., T. H. 47	Inland lakes, wooded terrain	Yes	Yes	No	Nearby	Boulder Junction	Many glacial lakes	Yes
Brule River	Douglas Co., T. H. 2	River scenery	Yes	Yes	No	Nearby	Brule	Brule River	Yes
Council Grounds	1 mi. W. of Merrill, Lincoln Co., T. H. 51	Pine woods, river scenery	Yes	Yes	No	Nearby	Merrill	Wis. River	Yes
Flambeau River	Sawyer Co., T. H. 13, 8, 70	Flambeau River, wilderness forest, canoeing	Yes	Yes	No	Nearby	Phillips	Flambeau River, Connors Lake	Yes
Kettle Moraine	N. Unit—5 mi. N. of Kewaskum, T. H. 55 and 45	Glacier formed hills and valleys	Yes	Yes	Yes	Nearby	Campbellsport	Mauthe Lake Long Lake	Yes
	S. Unit—4 mi. No. of Eagle, T. H. 59	Glacier formed hills and valleys	Yes	Yes	No	Nearby	Eagle	Whitewater Lake	Yes
Northern Highland	Vilas and Iron Counties, T. H. 51	Glacier formed lakes, wooded terrain	Yes	Yes	No	Nearby	Boulder Junction	Trout Lake and many other lakes	Yes
Point Beach	4 mi. No. of Two Rivers, T. H. 42	Lake Michigan, sand dunes, pine woods	Yes	Yes	Yes	Nearby	Two Rivers	Lake Michigan	Yes

State Forests

State forests, as defined by section 28.03 of the Wisconsin Statutes, "shall consist of well-blocked areas of state-owned lands which have been established as state forests by the Conservation Commission".

The state lands early acquired for forest reserve purposes formed the nucleus for the establishment of a system of state forests which began to take shape in 1931. Since that time the Conservation Commission has authorized the establishment of four such areas in the northern counties:

Northern Highland State Forest in Vilas and Iron Counties, Brule River State Forest in Douglas County, American Legion State Forest in Oneida County, and Flambeau River State Forest in Sawyer, Rusk and Price Counties.

Land for the Kettle Moraine State Forest in southeastern Wisconsin was first purchased in 1936, and Point Beach State Forest on Lake Michigan in Manitowoc County and Council Grounds State Forest in Lincoln County were added in 1938.

Although the state forests are areas set aside primarily for growing of forest crops; scenic values, scientific and educational values, outdoor recreation, public hunting and fishing and stabilization of stream flow are important extra benefits. There is an ever increasing public demand for the setting aside of zones or areas of the forests for special purposes such as recreation sites, game management areas, wilderness areas, scientific areas, canoe ways, stabilization of stream flow, and the application of forest aesthetics on lake shores and along streams and roads. The value of extra benefits from the state forests, though less tangible, will always transcend the value of the forest products harvested.

The seven state forests as of June 30, 1954 contained 274,690.79 acres. A tabulation showing location, how reached, dominant features and other information appears on page 89.

State Forest Land Acquisition

Over the biennium land examination and land acquisition within the established forest boundaries continued. Substantial progress was again made in blocking in the state ownership principally in the Kettle Moraine, Flambeau River, Northern Highland and Point Beach Forests. In total, there was acquired in excess of 3,200 acres of forest land as additions to the state forests.

The following table shows the total acreage of state-owned forest land by counties within the boundaries of the seven state forests:

STATE FOREST ACREAGE AS OF JUNE 30, 1954

Name	County	Acres	Total Acres
American Legion	Oneida		37,760.30
Brule River	Douglas		18,932.84
Council Grounds	Lincoln		278.17
Flambeau River	Price	7,115.48	
	Rusk	9,248.85	
	Sawyer	55,781.69	72,146.02
Kettle Moraine	Fond du Lac	3,756.57	
	Sheboygan	7,156.80	
	Washington	185.50	
	Northern Unit Total	11,098.87	
	Jefferson	981.01	
	Walworth	1,165.32	
	Waukesha	4,356.08	
	Scuppernong Total	6,502.41	17,601.28
Northern Highland	Iron	12,358.73	
	Vilas	113,635.41	125,994.14
Point Beach	Manitowoc		1,978.04
TOTAL			274,690.79

Reforestation on State Forest Lands

The reforestation of denuded lands within the state forests is considered one of the important phases of forest management. With a continuation of land purchases inside the forest boundaries, there will necessarily be much energy used to reforest the open areas of land as they are acquired. In some instances, the problem is one of planting small scattered openings or underplanting in areas with sparse or undesirable natural growth. The tree planting operations varied from machine plantings on open field to hand underplantings by the scalp-spud method. Although dry, warm weather prevailed during the planting season, planting was generally followed by adequate rainfall. Periodic random checks reveal good to fair survival.

The following table gives figures on the number of trees and acres planted on state forests for the years 1953 and 1954:

STATE PLANTING REPORT SUMMARY—1953 AND 1954

Forest	Trees	Acres		
		New Planting	Replanting	Total
American Legion	464,000	374	9	383
Brule River	128,900	113.5	49.5	163
Flambeau River	283,420	303.5	6.5	310
Kettle Moraine	659,442	455.0	25.8	480.8
Northern Highland	330,070	316.0	138.0	454
Point Beach	10,000	9.0		9
Misc. Gordon, C.W.C.A., Etc.	13,206	.5	14	14.5
Total State Forest	1,889,038	1,571.5	242.8	1,814.3

Sale of Forest Products

For the most part the lands incorporated within the boundaries of the state forests were cut over from 30 to 60 years ago and fire frequently followed the axe. With satisfactory fire control since the early nineteen thirties, many acres have regrown to thrifty second-growth stands now reaching a size where commercial values appear.

Prior to 1943, the production of timber products in the state forests of northern Wisconsin had consisted only of the sale of fuel wood and the salvage of blown down timber. It was realized that much young timber was growing into merchantable size and that there were many stands of aspen reaching maturity.

In 1942 plans were made to begin harvesting timber on a selective basis. The first timber sales were approved by the Conservation Commission and contracts let during the fall. Cutting began during November of that year and has continued to the present time.

There follows a summary of the results of the timber harvest from the beginning of the operations to the end of 1953:

SUMMARY OF TIMBER PRODUCTS SOLD AND VALUE FROM 1943 TO DECEMBER 31, 1953

	Pulpwood and Bolts–Cords	*Saw Timber Board Feet*	*Miscellaneous Products*	*Receipts*
American Legion Forest	8,669.68	317,224	665 pcs.	$ 30,054.91
Brule River Forest	4,752.61	23,760	665 pcs.	18,641.39
Flambeau River Forest	24,031.64	8,618,280	----------	192,880.78
Northern Highland Forest	38,361.75	6,943,913	----------	244,196.31
Scattered Forest Lands	915.14	173,160	1,685 Christmas trees	7,657.17
Blowdown on Pattison Park and Lucius Woods Park	664.44	----------	----------	2,853.43
	77,395.26	16,076,337	3,015	$496,283.99

Provided there is a ready market and other factors are equal, the volume and value of the forest products harvested will tend to increase as time goes on. Gross revenue derived from the sale of forest products over the biennium amounted to $161,879.79. Sales were somewhat hampered by poor markets over part of this period.

The apportionment to the counties of 25% of the revenue from the sale of wood products cut on state forests in accordance with Section 25.30 of the Wisconsin Statutes for 1953 and 1954 follows:

APPORTIONMENT TO COUNTIES OF REVENUE FROM SALE OF WOOD PRODUCTS CUT ON STATE FOREST LANDS. (SECTION 25.30, WISCONSIN STATUTES)

The following apportionment is made on the basis of state forest acreage as of June 30, 1954:

Forest and County	*Town*	*Town Acreage*	*County Acreage*	*Per Cent of County to Forest Total*	*Total Revenue by Forest*	*25% Due Counties*
AMERICAN LEGION						
Oneida	Lake Tomahawk	8,274.69				
	Newbold	10,917.56				
	Sugar Camp	7,805.45				
	Woodruff	10,762.60	37,760.30	100	$14,735.92	$ 3,683.98
BRULE RIVER						
Douglas	Bennett	720.00				
	Brule	4,316.27				
	Highland	9,692.78				
	Solon Springs	4,203.79	18,932.84	100	1,402.06	350.52
FLAMBEAU RIVER						
Price	Flambeau	1,236.98				
	Lake	5,878.50	7,115.48	9.8626		116.00
Rusk	Cedar Rapids	5,173.31				
	South Fork	4,075.54	9,248.85	12.8196		150.78
Sawyer	Draper	10,362.43				
	Winter	45,419.26	55,781.69	77.3178		909.40
					$ 4,704.70	$ 1,176.18
KETTLE MORAINE						
Fond du Lac	Auburn	2,396.54				
	Osceola	1,360.03	3,756.57	21.342		$ 47.34
Jefferson	Palmyra	981.01	981.01	5.573		12.36
Sheboygan	Greenbush	2,409.80				
	Mitchell	3,526 86				
	Plymouth	41.03				
	Scott	1,179.11	7,156.80	40.661		90.19
Walworth	La Grange	746.88				
	Whitewater	418.44	1,165.32	6.621		14.69
Washington	Kewaskum	185.50	185.50	1.054		2.34

APPORTIONMENT TO COUNTIES OF REVENUE FROM SALE OF WOOD PRODUCTS CUT ON STATE FOREST LANDS. (SECTION 25.30, WISCONSIN STATUTES)—Continued

Forest and County	*Town*	*Town Acreage*	*County Acreage*	*Per Cent of County to Forest Total*	*Total Revenue by Forest*	*25% Due Counties*
Waukesha	Eagle	2,019.88				
	Ottawa	2,336.20	4,356.08	24.749	----------	54.89
					$ 887.24	$ 221.81
NORTHERN HIGHLAND						
Iron	Mercer	7,244.96				
	Sherman	5,113.77	12,358.73	9.809	----------	$ 1,071.53
Vilas	Arbor Vitae	24,191.57				
	Boulder Junction	34,091.54				
	Cloverland	2,631.79				
	Land O'Lakes	5,857.51				
	Manitowish Waters	4,279.18				
	Plum Lake	31,814.03				
	Presque Isle	5,159.72				
	St. Germain	3,650.07				
	Winchester	1,960.00	113,635.41	90.191	----------	9,852.42
	Totals	272,434.58			$43,695.81	$10,923.95
					$65,425.73	$16,356.44

APPORTIONMENT TO COUNTIES OF REVENUE FROM SALE OF WOOD PRODUCTS CUT ON STATE FOREST LANDS. (SECTION 25.30, WISCONSIN STATUTES)

The following apportionment is made on the basis of state forest acreage as of June 30, 1953:

Total Acreage ---------- 273,790.15
Total Income ---------- $96,454.06
One-fourth of Income ---------- 24,113.52

County	*Town*	*Town Acreage*	*County Acreage*	*Per Cent of County to Total*	*Amount Due County*
Douglas	Bennett	720.00			
	Brule	4,316.27			
	Highland	9,692.48			
	Solon Springs	4,203.79	18,932.54	6.91498	$ 1,667.44
Fond du Lac	Auburn	2,396.54			
	Osceola	1,360.03	3,756.57	1.37206	330.85
Iron	Mercer	7,244.96			
	Sherman	5,113.77	12,358.73	4.51394	1,088.47
Jefferson	Palmyra	961.01	961.01	.35100	84.64
Lincoln	Merrill	278.17	278.17	.10160	24.50
Manitowoc	Two Rivers	1,978.04	1,978.04	.72247	174.21
Oneida	Lake Tomahawk	8,271.69			
	Newbold	10,917.56			
	Sugar Camp	7,685.45			
	Woodruff	10,762.60	37,637.30	13.74677	3,314.83
Price	Flambeau	1,236.98			
	Lake	5,878.50	7,115.48	2.59888	626.68
Rusk	Cedar Rapids	5,173.31			
	South Forks	4,075.54	9,248.85	3.37808	814.57
Sawyer	Draper	10,362.43			
	Winter	45,025.83	55,388.26	20.23019	4,878.21
Sheboygan	Greenbush	2,409.80			
	Mitchell	3,411.45			
	Plymouth	41.03			
	Scott	1,179.11	7,041.39	2.57182	620.16
Vilas	Arbor Vitae	24,171.57			
	Boulder Junction	34,091.54			
	Cloverland	2,631.79			
	Land O'Lakes	5,857.51			
	Manitowish Waters	4,277.68			
	Plum Lake	31,814.03			
	Presque Isle	5,159.72			
	St. Germain	3,650.07			
	Winchester	1,960.00	113,613.91	41.49671	10,006.32
Walworth	La Grange	746.88			
	Whitewater	391.44	1,138.32	.41577	100.26
Washington	Kewaskum	185.50	185.50	.06775	16.34
Waukesha	Eagle	1,819.88			
	Ottawa	2,336.20	4,156.08	1.51798	366.04
TOTALS		273,790.15	273,790.15	100.	$24,113.52

Improvements

Forest Roads—In cooperation with the State Highway Commission, the work of maintaining and improving the forest road system on all state forests continued. Another major link in the Kettle Moraine Scenic Drive was completed in 1953; and a one and one-half mile section of the Whitewater Lake road, including parking lots, was resurfaced with bituminous material. In 1954 there was constructed an additional one and one-quarter miles of relocation highway around the lower Whitewater Lake.

Segments of County Trunk "D" on the American Legion Forest were reconstructed and surfaced. A new bridge was completed over the South Fork of the Flambeau River; 3.8 miles of the Hawkins–Flambeau Forest road were surfaced and segments of the Winter–Phillips road were sand lifted and resurfaced. The regular summer and winter maintenance and other road betterments were carried out according to standard procedures.

Buildings and Grounds—The new headquarters building on the Flambeau Forest started during the previous biennium was completed in 1953.

The Connors Lake picnic grounds were extended and improved, new toilet buildings were constructed and additional fireplaces and picnic tables were provided. Work was started on the development of additional camping grounds.

New construction on the other northern forests was at a minimum during 1953 and 1954, consisting for the most part of extension and improvement of public use areas and the facilities available such as fireplaces, tables, parking areas, toilet buildings, beach improvements, etc.

On the Kettle Moraine there was a small concession building constructed at the Mauthe Lake public use area, 100 new tables built for use in picnic and campgrounds, a new camping area developed with all necessary facilities, and beach improvements at both Mauthe Lake and Long Lake Areas. The day use and Boy Scout camping area on the Scuppernong Unit of the forest was further improved.

On the Whitewater Lake Area, work was completed late in 1954 on an impoundment which will cause what is to be known as Lower Whitewater Lake. The structure consists of a small dam with earthen dike which will impound the waters of a branch of Whitewater Creek and create a lake of approximately 175 acres. It is expected that the new lake will materially enhance the recreational values on this unit of the forest.

Construction on the new trailer camp at Point Beach State Forest was completed, including the installation of water and electrical outlets and two new toilet buildings. A playground just west of the concession building was also completed.

Miscellaneous—

Plantation release cutting—600 man days
Timber stand improvement—470 man days
Planting site preparation—200 acres
Firebreak construction—2 miles
Permanent marking for perpetuation of survey corners
Fencing external boundaries
Informational and boundary signs

Removal and salvage of internal fences
Removal and salvage of buildings acquired with land purchases
Fifty thousand board feet of lumber and one thousand bundles of shakes and shingles sawed from salvaged material for use on forest and park properties

New Equipment—The program of annually acquiring a limited number of trucks, tractors and other power equipment as replacements for old worn-out units was continued over the biennium. The periodic exchange and purchase of new equipment resulted in dependable transportation and greater efficiency of operation.

Forest Damage

During the 1952 and 1953 fire seasons there were periods in both spring and fall when the forest fire danger was extremely high. Over this period there was a total of 98 fires inside the state forest boundaries which burned a total of 435.7 acres. The conditions were right for serious fires, and only the cooperation of the forest using public and the ability of the fire control organization to rapidly detect and suppress fires made it possible to hold the total burn to a minimum. The damage in dollars was relatively small.

Windstorms of extreme velocities knocked down an estimated 3 million board feet of timber on the Flambeau Forest in 1952, and 750,000 board feet on the Northern Highland Forest on June 30, 1953. Salvage operations have been completed.

Approximately 460 acres of Norway pine plantations on the Northern Highland and American Legion State Forests were sprayed with chemicals to minimize damage by the spittlebug. Subsequent checks revealed the treatment was from 95 per cent to 100 per cent effective.

Rather widespread mouse damage in certain Norway pine plantations on the Flambeau River Forest made it necessary to replant about 6½ acres.

Public Use

Considerable difficulty is experienced in recording quantitatively the public use of state forests. The sundry forms of such use; namely, camping, picnicking, swimming, canoeing, fishing, hunting, hiking, winter sports, field trials, photography and nature study, are, with the exception of registered camping or mechanical counts of vehicles at developed recreation areas, impossible to measure with the resources at hand.

Hunting and fishing are generally recognized to be steadily increasing through the state at large. State forests, being opened to the public for such use, are becoming increasingly popular as the public is faced with more "no trespass" signs on private land. Some of the finest canoe country in the midwest is found in the Brule, Flambeau and Northern Highland State Forests and this use is believed to be increasing although no data is available. The extension and improvement of rural highways are bringing portions of the northern state forests closer to the casual auto visitor while the provision for basic sanitary facilities and supplementary facilities in the recreational developments of the Kettle Moraine State Forest in southern Wisconsin is making these areas increasingly popular with the densely populated sections of southeastern Wisconsin.

ATTENDANCE AT DEVELOPED AREAS—STATE FORESTS 1952–1954 (CALENDAR YEARS)

Forest	Area	Visitors			Cars			Camper Days			Organized Camper Days			Trailers			Tents		
		1952	1953	1954	1952	1953	1954	1952	1953	1954	1952	1953	1954	1952	1953	1954	1952	1953	1954
Council Grounds		75,558	72,251	59,794	21,298	32,611	17,168	N.R.	555	103	N.F.	N.F.	N.F.	N.R.	28	37	N.R.	81	75
Kettle Moraine	Mauthe Lake	146,506	210,636	267,357	34,211	43,524	47,103	11,695	11,794	16,725	2,043	1,975	N.A.	437	333	596	2,105	2,257	3,651
	Long Lake	26,805	50,260	73,291	6,696	11,119	12,371	0	34	0	0	0	0	N.F.	N.F.	N.F.	0	8	0
	Greenbush Winter Sports Area	14,085	10,785	40,134	3,489	2,462	7,265	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.
	Whitewater Lake Picnic Area	21,940	26,710	31,710	5,515	2,839	7,977	211	272	541	N.F.	N.F.	N.F.	2	2	1	48	98	131
	Boy Scout Area	4,872	5,288	7,504	285	796	806	7,867	4,634	8,641	7,867	4,634	8,641	0	0	682	1,602	1,337	1,909
	All Waysides	30,532	25,448	38,240	7,638	6,407	9,575	44	147	245	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.	17	42	84
	Lapham Peak	14,364	14,670	17,960	3,593	3,690	4,510	76	102	78	N.F.	N.F.	N.F.	N.F.	N.F.	N.F.	21	39	33
Point Beach		258,544	228,289	232,062	78,505	65,627	60,346	1,967	4,688	3,441	N.F.	N.F.	N.F.	37	52	63	274	439	514
	TOTALS	593,206	644,337	268,052	161,230	169,075	167,121	21,860	22,226	29,774	9,910	6,609	8,641	476	415	1,379	4,067	4,301	6,397

N.F.—No facilities for the use indicated are presently provided.
N.R.—No report received.
N.A.—Data not available at time of printing.

Public use data available is of two types. In the northern forests campers are registered in supervised campgrounds. Exceptions to this occur at the Brule River State Forest where there are no supervised campgrounds, and at the Council Grounds State Forest where a mechanical counter is employed on the only access road. This data follows:

CAMPGROUND REGISTRATION—STATE FORESTS

1952–1953 (calendar years)

	Campers		*Camper Days*	
	1952	*1953*	*1952*	*1953*
American Legion	1,446	11,101	1,501	8,545
Flambeau River	No report	3,500	No report	509
Northern Highland	3,466	3,880	21,017	22,052
	4,912	18,481	22,518	31,106

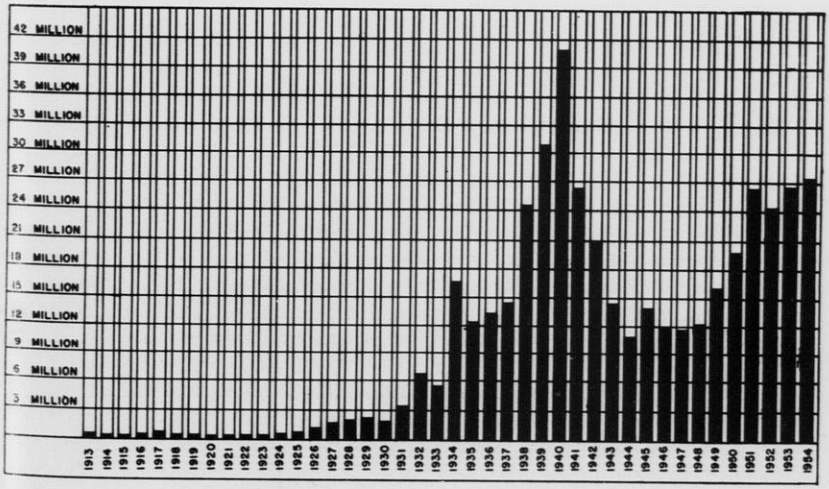
At Council Grounds and Point Beach State Forests and at the developed recreational areas of the Kettle Moraine State Forest, mechanical counts of vehicles are made as well as visual counts of tents, trailers and campers. Computations of camper days are made. This data is presented on page 98.

State Forest Nurseries

Distribution

The number of trees handled by the nurseries increased substantially over 1953. However, the net production (inter-nursery shipments deducted) amounted to about the same as the preceding year. In other words, a little over 23 million trees were produced in the six state nurseries. This excludes the 1,046,000 game food plants shipped from Boscobel.

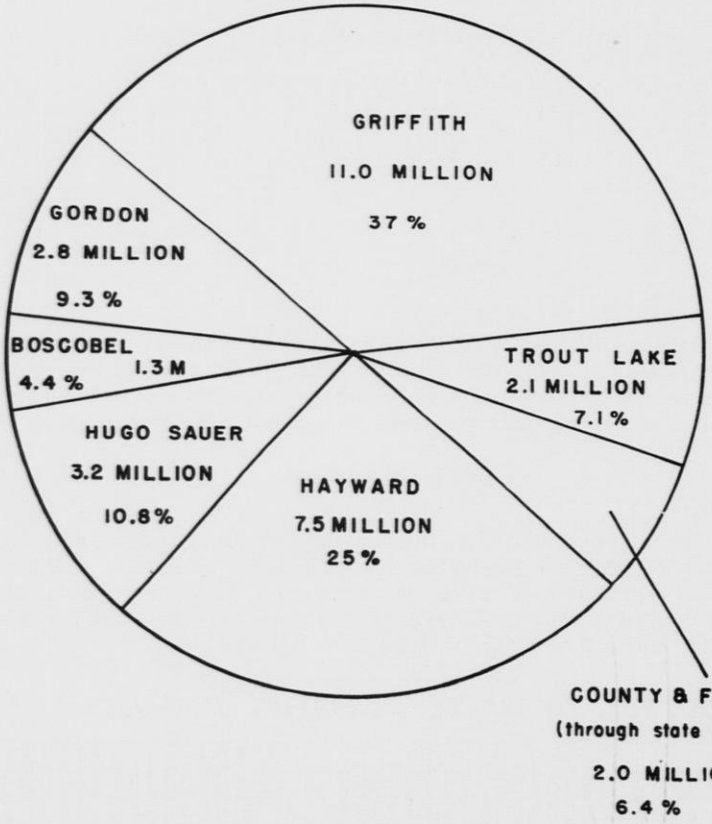
OUTPUT OF STATE NURSERIES 1913—1954



PRODUCTION OF TREES BY NURSERIES

(INCLUDES INTER-NURSERY SHIPMENTS)

Year of 1954



Planting on state and county forests was below last year's figures. On the other hand, shipments to private landowners continued to expand. As far as the nurseries were concerned, Griffith, Hayward, and Rhinelander furnished more trees, while Trout Lake and Gordon shipped less.

With the exception of jack pine, all plantable varieties and age classes were successfully moved. As a matter of fact, several million more trees could probably have been sold had they been available. Substantial amounts of overaged jack pine had to be discarded because of lack of demand for this variety. This was also true for lesser amounts of white ash and American elm.

It was again possible to purchase from federal nurseries several hundred thousand seedlings and transplants of those species in large demand. The making of this additional stock available to landowners was a big help to the overall tree distribution program.

Stock Inventories

Germination results in Norway pine at the northern nurseries were normal in 1954. At Griffith, however, germinative capacity in this variety was definitely substandard due largely to uneven sowing resulting from mechanical drill failure. The use of pelleted seed in fungi control has created additional problems in sowing procedures.

Germinative results in white pine was poor at all nurseries. The cause is not definitely known but can be attributed in large part to weather conditions and considerable late damping-off, particularly at Griffith.

Jack pine is in demand in less numbers each season and the inventory reflects this losing interest in this hardy, pioneer species. On the other hand, Norway pine continues to be in greater want each year and because of this interest, more stress is being given to a heavier production.

Because of the natural hazards in the raising of small trees, it is advantageous to decentralize production at several different nurseries. Therefore, while Griffith and Gordon show an inventory drop in 1954, Hayward and Rhinelander largely equalized this by making substantial gains. Trout Lake kept its 1954 inventory equal to 1953 and Boscobel denotes a nice gain.

In spite of poor germination at some of the nurseries, Norway pine, the most sought after variety, indicates the biggest increase in the 1–0 age class.

Labor

Seasonal help was ample at all nurseries with the exception of Trout Lake. The workers were also of better quality than former years. This reflects less demand for help in the higher paying industrial centers, along with increasing population trends. Both these economic and social factors do, of course, aid the early completion of seasonal nursery operations.

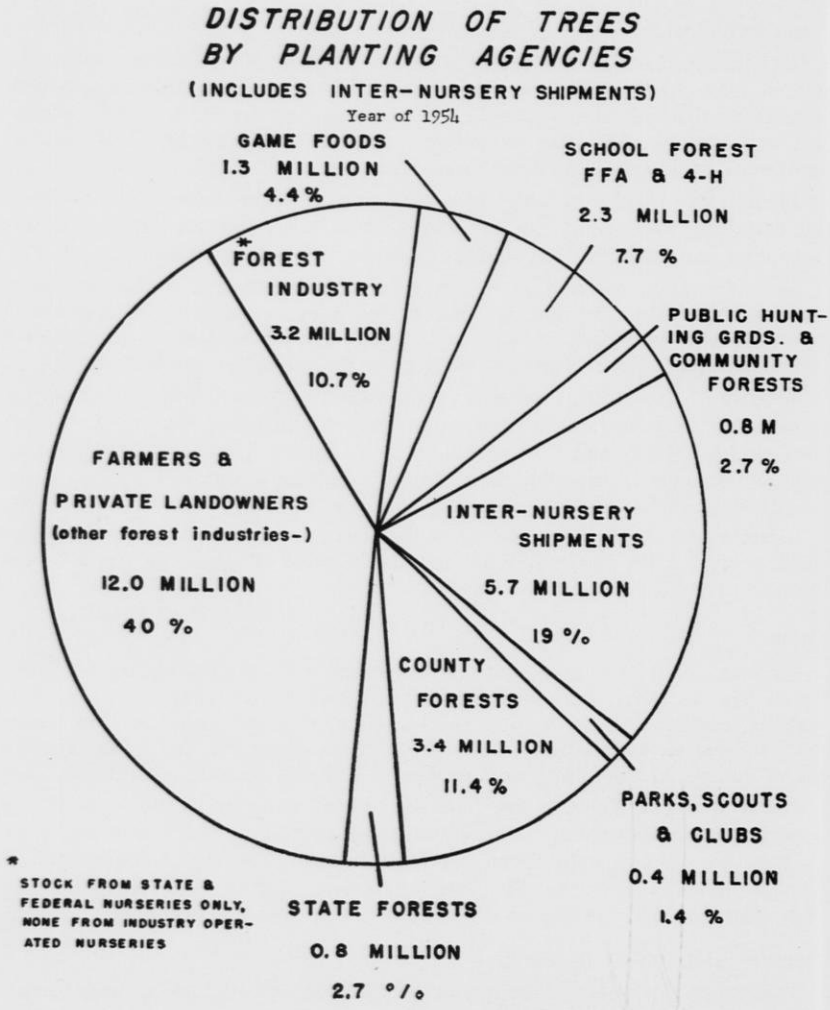
Labor needs at Gordon are handled almost entirely by inmates of the associated forestry penal camp. Trout Lake and Hugo Sauer also are aided in part by similar help from the McNaughton Forestry Camp which is located midway between the two nurseries. Griffith and Hayward are dependent entirely on the availability of local seasonal workers.

Nursery and Forest Research

The use of tetramethylthiram disulfide, known as both Arasan and Tersan, was again continued at Griffith and Boscobel for the control of Damping-Off. The results were good in holding the early damage (Rhizoctonia) to within reasonable bounds. At Griffith, however, a late, mid-summer loss from pythium, largely confined to white pine was noted. Hugo Sauer will treat some of its Norway pine 1954 fall seedings with arasan. It is planned to keep the Damping-Off research studies open for further limited study and observation.

The use of sawdust along with anhydrous ammonia was advanced at Griffith and Boscobel for the improvement of soil fertility. The soils at all nurseries were thoroughly analyzed and recommendations for optimum maintenance and improvement were submitted to those concerned.

Studies continued on the damaging effects of the pine aphid on closely planted pine seedlings in the nursery. Various types of sprays were used



with reasonable success. It appears that time and thoroughness of application are important and that nearby white spruce windbreak trees may be acting as alternate hosts.

White grub control in newly planted trees was also attempted in an experimental way, with the use of a chlordane paste applied at the time of planting. Results of these trials have so far been favorable.

Additional transplanting was done at Trout Lake, Hayward, and Griffith for the Genetic or tree breeding projects. Also several thousand selected Norway pines were grafted during the winter months at the Griffith greenhouse. The scientific early forecast of cone crop conditions, made annually by the tree breeding project was very helpful in formulating cone purchasing and collection plans.

The summer field station of the tree breeding research project is to be moved from Trout Lake to nearby Plum Lake where suitable facilities are being established.

Insects and Diseases

The red spider and spruce mites were prevalent in large number on the Griffith Nursery 2–0 spruce beds. Spraying with Nicotine, Vapatone and Selocide was instigated. The Selocide appeared to do the best job. Malathion will be used in any future outbreaks.

Leaf hoppers built up large numbers on the American elm but were successfully controlled with Nicotine sprays.

Nicotine was also used in early attempts to control the aphid patches on the 3–0 white and Norway pine beds.

Seeding and Transplanting

With the exception of white pine, the 1954 cone crop could be considered good. Cone collections in Norway pine, white spruce and Norway spruce were much better than any one of the previous four years.

Advantage was taken of the good crop and the following amounts were purchased:

Norway pine	3450	Bu.	@	$ 6.00	per	bushel
White pine	608	"	@	2.00	"	"
Jack pine	5	"	@	2.50	"	"
Norway spruce	450	"	@	3.50	"	"
White spruce	885	"	@	7.00	"	"
Balsam fir	½	"	@	4.00	"	"
Yellow birch	1	"	@	25.00	"	"

Flowering as observed by the Forest Genetic Research Project indicates a better crop of White pine for 1955. Norway pine and the spruces are expected to be less.

Results of the 1954 seedings were generally successful. White pine, however, was below average at most nurseries. In some northern nurseries, germination was poor, while at Griffith, mid-summer losses prevailed for the first time in the history of the nursery.

The 1954 fall transplanting in the northern nurseries was generally good. At Griffith, however, more than average losses occurred. Fall transplanting is never as successful as spring, and it is questionable whether the practice should be continued, at least at Griffith. Transplanting in the fall does materially ease the work load in the busy spring season, and it fits in well with the arrangement of nursery operations at that time of the year.

Production Problems

The severe drought of the fall of 1953 extended on through the winter months. Very little snow fell during the 1953–54 cold season and this lack of precipitation over this long period caused substantial mortality in windbreaks, plantations, and natural stands of forest growth. The windbreaks at the Griffith Nursery were particularly hard hit.

The growing season of 1954, however, was a normal one. Except for a period of dryness in May and again in July, rainfall was sufficient for good plant growth. Late September and early October saw unusually large

amounts of water falling along with many cool cloudy weeks. The fall of 1954 was completely in reverse of the drought conditions that prevailed during the 1952 and 1953 seasons.

The 1954 seeding germination results at Griffith indicated that when using arasan pelleted seed there is an increase in the possibility of the seed drill plugging. The seeding crew must be especially alert to this probability of a large number of seed beds only partially productive.

Boscobel has had much trouble from wind and sand blowing ever since its establishment. Additional snow fence has been obtained and also enough side boards to protect the majority of each year's seedings.

Sand washing is a problem at Gordon where portions of the nursery area are of a rolling nature. Barriers have been put in place to alleviate this washing and some land leveling has also been accomplished.

New Improvements

A second tying machine was obtained at the Griffith Nursery. This machine has the tying arrangement located above the trees being tied and should cause less wear of parts due to sand dropping from the tree roots directly onto the tying mechanism.

An additional transplanting machine is on hand at the Hugo Sauer Nursery. This machine was transferred to Rhinelander from the federal nursery at Eveleth, Minnesota.

A large mechanical device was constructed at the Tomahawk shop for the cutting of roots between large size trees. The machine was developed for the Oak Wilt Research Project in an attempt to restrict the spread of the oak wilt fungus through communal root grafts.

Public Relations

The furnishing of competent guides from nursery personnel for conducted tours during active nursery rush seasons continues to be a big problem. While groups touring the nurseries were most numerous during the spring shipping and planting season, requests for conducted tours were made throughout the entire summer season and well into the late autumn months.

The nurseries cooperated in the school educational programs and also several large conservation and associated field days by constructing necessary props, the painting of signs, furnishing motorized equipment, etc.

ANNUAL OUTPUT OF STATE FOREST NURSERIES

Year	Private	Public	Totals
1911		192,300	*192,300
1912		18,000	**18,000
1913		68,500	68,500
1914	20,200	458,430	478,630
1915	77,400		77,400
1916	110,200	216,650	326,850
1917	272,105	332,525	604,630
1918	246,278	262,485	508,763
1919	200,151	309,900	510,051
1920	206,682	113,875	320,557
1921	199,601	255,925	455,526
1922	39,842	83,710	123,552
1923	177,260	176,800	354,060
1924	247,000	163,300	410,300
1925	350,538	160,700	511,238
1926	748,497	424,200	1,172,697
1927	1,038,249	579,000	1,617,249
1928	1,101,464	637,200	1,738,664
1929	1,393,267	1,022,750	2,416,017
1930	1,185,075	981,500	2,166,575
1931	1,304,250	2,050,350	3,354,600
1932	880,315	5,701,500	6,581,815
1933	822,950	4,318,050	5,141,000
1934	1,486,725	15,209,785	16,696,510
1935	1,376,189	10,737,715	12,113,904
1936	3,592,224	9,535,482	13,127,706
1937	***5,811,662	8,702,429	***14,514,091
1938	***6,530,124	18,775,862	***25,305,986
1939	***8,775,557	21,872,280	***30,647,837
1940	***12,305,025	28,352,316	***40,657,341
1941	***11,085,364	15,575,351	***26,660,715
1942	***11,373,445	9,417,192	***20,790,637
1943	***9,612,340	4,117,192	***13,729,532
1944	***7,867,220	2,160,590	***10,027,810
1945	***10,080,584	3,252,224	***13,332,808
1946	***8,019,675	3,858,332	***11,878,007
1947	***7,077,654	4,509,653	***11,587,307
1948	***6,976,387	5,399,185	***12,375,572
1949	***9,378,035	6,526,090	***15,904,125
1950	***13,629,880	6,254,130	***19,884,010
1951	***18,008,314	8,166,322	***26,174,636
1952	***18,321,164	6,113,072	***24,434,236
1953	***21,307,339	5,272,524	***26,579,863
1954	***23,827,390	3,715,641	***27,543,031
	227,063,621	216,051,017	443,114,638

*Stock secured from Michigan State College.
**Stock Purchased.
***Includes Inter-Nursery shipments.

STATE NURSERY TREE DISTRIBUTION BY COUNTY

All Nurseries—State, County and Private (Not Federal) Year of 1954

County	*State Forests*	*County Forests*	**Extension*	***Private*	*High-way*	****General*	*Totals*
Adams			61,050	624,550			685,600
Ashland		8,000	17,100	132,725			157,825
Barron			49,625	52,325		24,250	126,200
Bayfield		461,400	15,900	105,050		5,000	587,350
Brown			55,000	37,200		10,100	102,300
Buffalo			27,225	64,050			91,275
Burnett		471,900	45,500	109,475			626,875
Calumet			6,925	24,425			31,350
Chippewa		50,000	66,600	222,300		47,475	386,375
Clark		267,820	54,500	190,300		398,935	911,555
Columbia			62,225	249,850		9,050	321,125
Crawford			24,925	8,700		500	34,125
Dane			29,425	76,700	2,000	42,980	151,105
Dodge			18,450	32,150		3,450	54,050
Door			46,800	65,875			112,675
Douglas	100,106	108,330	26,550	603,975		261,650	1,100,611
Dunn			108,825	193,175		8,500	310,500
Eau Claire		91,500	81,725	164,200			337,425
Florence		17,500	4,000	82,850			104,350
Fond du Lac	45,729		8,425	18,000		8,240	80,394
Forest		25,000	10,075	314,600	2,000		351,675
Grant			16,725	405,200	500	369,475	791,900
Green			32,650	120,750		12,780	166,180
Green Lake			21,625	44,650		7,000	73,275
Iowa			44,100	49,275			93,375
Iron		55,000	8,500	80,650		20,000	164,150
Jackson		141,600	41,175	174,100	10,000	10,450	377,325
Jefferson			25,525	186,925	1,000	27,025	240,475
Juneau		235,620	240,255	197,250		14,300	687,425
Kenosha			1,900	17,100		1,600	20,600
Kewaunee			36,450	44,525			80,975
La Crosse			68,625	110,550		4,000	183,175
Lafayette			6,850	15,450			22,300
Langlade		45,000	46,290	251,900	2,000	4,000	349,190
Lincoln		15,000	29,150	352,025	2,000	2,500	400,675
Manitowoc	5,000		34,975	105,625		4,050	149,650
Marathon			194,125	289,050	1,800	106,475	591,450
Marinette		128,000	68,575	602,000		9,100	807,675
Marquette			50,225	308,450		8,000	366,675
Milwaukee			5,400	26,130		100	31,630
Monroe		47,500	88,850	170,600		800	307,750
Oconto			117,700	465,075		1,000	583,775
Oneida	157,400	25,000	16,800	1,065,950	2,000	1,192,125	2,459,275
Outagamie			44,900	59,350		1,500	105,750
Ozaukee			7,500	74,225			81,725
Pepin			5,150	37,675			42,825
Pierce			43,125	44,650	10,000	3,600	101,375
Polk		79,500	35,075	65,600		11,500	191,675
Portage			72,475	1,101,000		3,700	1,177,175
Price		34,850	45,150	184,050	2,000		266,050
Racine			8,450	14,950		500	23,900
Richland			42,925	30,150			73,075
Rock			31,300	133,450		10,375	175,125
Rusk		25,000	33,100	152,050		1,700	211,850
Sauk			66,075	623,100	5,000	14,000	708,175
Sawyer	173,420	70,000	14,500	169,800		172,625	600,345

STATE NURSERY TREE DISTRIBUTION BY COUNTY—Continued

County	*State Forests*	*County Forests*	**Extension*	***Private*	*High-way*	****General*	*Totals*
Shawano			43,975	318,700		1,100	363,775
Sheboygan	99,831		13,975	99,350	5,000	3,000	221,156
St. Croix			29,650	95,625		2,725	128,000
Taylor		25,000	40,050	98,450		11,300	174,800
Trempealeau			74,995	67,575			142,570
Vernon			47,875	23,200		10,500	81,575
Vilas	64,800	155,000	6,600	291,600	7,000	195,225	720,225
Walworth			18,150	34,250		8,650	61,050
Washburn		69,800	15,450	96,750			182,000
Washington	2,000		34,500	54,675		4,000	95,175
Waukesha	180,735		17,150	123,975		7,500	329,360
Waupaca			84,825	728,310		3,700	816,835
Waushara			58,375	1,353,025		24,000	1,435,400
Winnebago			16,000	39,250		28,500	83,750
Wood		179,000	45,200	498,275	2,000	2,604,450	3,328,925
States of							
Arkansas						2,000	2,000
Iowa						600	600
Kansas				3,000			3,000
Maryland			25				25
Missouri						100	100
New York						25	25
TOTALS	829,021	2,832,320	3,013,840	15,071,765	54,300	5,741,785	27,543,031
****Game Food							1,046,810
TOTAL	829,021	2,832,320	3,013,840	15,071,765	54,300	5,741,785	28,589,841

*Extension—Stock distributed through the State Extension Forester, the Assistant State Club Leader, the Agricultural Instructors and the County Agricultural Agents. This column includes Community Forests.

**Private—Individual purchasing under the Tree Application and Agreement form.

***General—Trees transferred to the other State Nurseries and other agencies not covered by the above headings, i.e., Gordon Nursery, Soil Conservation Service, Parks, Clubs, Institutions, etc.

****Game Foods—Deciduous shrubs and vines distributed from Boscobel Nursery.

State Parks

The primary purpose of the state parks is to preserve the outstanding and unique scenic and historic places of the state for all time and to provide areas for public recreation and public education in conservation and nature study. An area may qualify as a state park by reason of its scenery, its plants and wildlife, or its historical, archaeological or geological interest. It is necessary that the use of the parks be regulated in such a manner as to preserve the qualities that justified the selection of the area for state park purposes.

To provide a basis for common understanding of what general sort of area and development are associated with each park property, they are classified as to their most logical employment or greatest usefulness.

The State Parks Proper or Scenic Parks are relatively large scenic, recreational areas. Each has a distinctive feature of state-wide significance. Thus, Devil's Lake (2,538 acres) is the most outstanding bit of mountainous scenery in Wisconsin; Pattison Park (1,160 acres) contains the highest waterfall (165 feet) in the state; Wyalusing Park (1,671 acres) is located on a most prominent piece of river and bluff scenery at the confluence of the Wisconsin and Mississippi Rivers.

WISCONSIN STATE PARKS

Name	Location and State Highway Connection	Dominant Feature	Swimming	Camping	Electrical Outlets	Store	Address of Park Manager	Water Frontage	Number of Acres	Picnic Area
SCENIC PARKS										
Big Foot Beach	1 mi. S. of Lake Geneva, T.H. 12, 50, 120	A beach park	Yes	Yes	No	Nearby	Lake Geneva	Lake Geneva	301	Yes
Brunet Island	1 mi. N. of Cornell, T.H. 27	River Island Park	Yes	Yes	Yes	Nearby	Cornell	Chippewa River	179	Yes
Copper Falls	4 mi. N. of Mellen, T.H. 13	River gorge, water falls, canyons	No	Yes	Yes	In Park	Mellen	Bad River—Tyler Fork	1,160	Yes
Cox Hollow	2 mi. N. of Dodgeville, T.H. 18	Wooded bluffs, valleys	No	No	No	Nearby	Baraboo	Mill Creek	850	No
Devil's Lake	3 mi. S. of Baraboo, T.H. 123	Bluffs, mountain scenery	Yes	Yes	Yes	In Park	Baraboo	Devil's Lake	2,538	Yes
Interstate	St. Croix Falls, T.H. 8	River gorge, rock bluffs	Yes	Yes	Yes	Nearby	St. Croix Falls	St. Croix River	675	Yes
Merrick	1 mi. N. of Fountain City, T.H. 35	A river park	Yes	Yes	No	Nearby	Fountain City	Miss. River	133	Yes
Pattison	10 mi. S. of Superior, T.H. 35	Highest waterfall in state, river gorge	Yes	Yes	Yes	In Park	Superior	Black River, Innerfalls Lake	1,160	Yes
Peninsula	Fish Creek, T.H. 42	Green Bay, limestone bluffs	Yes	Yes	Yes	Nearby	Fish Creek	Green Bay	3,641	Yes
Perrot	1 mi. N. of Trempealeau, T.H. 35	River scenery, wooded bluffs	No	Yes	No	Nearby	Trempealeau	Miss. River	937	Yes
Potawatomi	2 mi. NW. of Sturgeon Bay, T.H. 42	Sturgeon Bay, limestone bluffs	No	Yes	No	Nearby	Sturgeon Bay	Sturgeon Bay	1,046	Yes
Rib Mountain	4 mi. SW. of Wausau, T.H. 51	One of highest points in the state, rock outcrops	No	Yes	No	Nearby	Wausau	None	498	Yes
Terry Andrae	4 mi. S. of Sheboygan, T.H. 141	Lake Michigan sand dunes	Yes	Yes	Yes	Nearby	Sheboygan	Lake Michigan	167	Yes
Wildcat Mountain	T.H. 33 near Ontario	Bluff lands, upper Kickapoo River	No	Yes	No	Nearby	Ontario	Kickapoo River	696	Yes
Wyalusing	4 mi. S. of Prairie du Chien, T.H. 35	Junc. Wis. and Miss. Rivers, wooded bluffs	No	Yes	Yes	Nearby	Wyalusing	Miss. River	1,671	Yes

Name	Location and State Highway Connection	Dominant Feature	Swimming	Camping	Electrical Outlets	Store	Address of Park Manager	Water Frontage	Number of Acres	Picnic Area
HISTORICAL–MEMORIAL PARKS										
Aztalan	4 mi. E. of Lake Mills, T.H. 30	Site of ancient Indian village	No	No	No	Nearby	Eagle	Crawfish River	123	No
Cushing	Delafield, T.H. 30	Historic shaft	No	No	No	Nearby	Eagle	Bark River	10	Yes
First Capitol	3 mi. N. of Belmont, T.H. 151	First territorial capitol	No	No	No	Nearby	Belmont	None	2	Yes
Lizard Mound	2 mi. NE. of West Bend, T.H. 144	Indian mounds	No	No	No	Nearby	Campbellsport	None	20	Yes
Lost Dauphin	5 mi. SW. of De Pere, T.H. 41	Home of lost dauphin of France	No	No	No	Nearby	Fish Creek	Lower Fox River	19	Yes
Nelson Dewey	1 mi. N. of Cassville, T.H. 35	Home of 1st governor, river bluffs and valleys	No	Yes	No	Nearby	Cassville	Miss. River	579	Yes
Old Wade House	6 mi. W. of Plymouth, T.H. 23	Restored early American inn	No	No	No	Nearby	Greenbush	Mullet River	5	Yes
Tower Hill	3 mi. S. of Spring Green, T.H. 14, 23	Historic shot tower, river bluffs	No	Yes	No	Nearby	Spring Green	Wis. River	108	Yes
ROADSIDE PARKS										
Castle Mound	1 mi. S. of Black River Falls, T.H. 12	Roadside bluffs	No	Yes	No	Nearby	Black River Falls	None	211	Yes
Lucius Woods	Solon Springs, T.H. 53	Virgin pine timber, lake beach	Yes	Yes	No	Nearby	Solon Springs	Lake St. Croix	38	Yes
Mill Bluff	4 mi. W. of Camp Douglas, T.H. 12 and 16	Rocky Bluff	Yes	Yes	No	Nearby	Black River Falls	Roadside Pond	61	Yes
New Glarus Woods	1 mi. S. of New Glarus, T.H. 69	Wooded valleys	No	Yes	No	Nearby	New Glarus	None	78	Yes
Ojibwa	1 mi. E. of Ojibwa, T.H. 70	River scenery	No	Yes	No	Nearby	Ojibwa	Chippewa River	353	Yes
Roche A Cri	2 mi. N. of Friendship, T.H. 13	Woodlands, rocky bluffs	No	Yes	No	Nearby	Friendship	Carter Creek	259	Yes
Rocky Arbor	1 mi. NW. of Wis. Dells, T.H. 12	Rocky ledges, wooded valley	No	Yes	No	Nearby	Wis. Dells	None	227	Yes
								Total Acreage	17,745	

The State Historic and Memorial Parks are strictly what the name implies. They are relatively small in size but each possesses a distinctive and interesting historic story. These sites represent an important element in the cultural background of the entire state; their preservation in the case of notable sites is a public rather than semi-public or private responsibility.

The Roadside Parks are of lesser acreage and are intimately associated with the main permanently located trunk line highways. They constitute places where the traveler can turn off the pavement and find a safe and attractive spot for a picnic lunch, for a rest, or for an overnight stop with tent or trailer. For relatively short stops one will find adequate sanitary facilities, picnic tables, good drinking water and similar improvements.

The previous classification of *Natural Areas* has been eliminated. In their place has arisen *Scientific Areas.* These are areas which have been approved by the State Board for Preservation of Scientific Areas, a board created by the 1951 legislature. The board neither owns nor administers land but only approves upon application that the land meets the requisites of a scientific area; namely, that it is a tract of land in its natural state which is guaranteed to be used for research, instruction in conservation, and the preservation of the land in its natural state. Scientific areas have been designated which are administered by various agencies. The former Natural Areas in the state park system have been so designated.

A tabulation showing the state parks by classification, location, dominant features and other information is presented on pages 108 and 109.

Park Improvements

After necessary operational and maintenance costs are paid for with the devaluated dollar of today, there is little left from current park funds to invest in capital improvements. At such times acquisition of new sites, land purchase for better blocking on existing properties and the development or improvement of properties must of necessity be curtailed.

Of the improvements and developments made, the most intensive progress has been made at Old Wade House State Park. Although only accepted by the Commission during the biennium, the provision of basic and supplementary facilities for public health, safety and convenience has been completed to a point where in terms of a master plan no additional work is contemplated for the foreseeable future.

Limited progress has also been made at the Nelson Dewey State Park restoration. Museum repairs and additions, contact station, parking area and road surfacing have brought us closer to adequately meeting public needs. At Peninsula State Park many miles of roads have been resurfaced.

A summary of improvements at the 30 state parks follows:

Sewage system improved	1 property
Water system constructed	1 property
Water system improved	1 property
Roads improved	1 property
Roads constructed	1 property
Parking areas constructed	4 sites
Latrines constructed	4
Concession building constructed	1 property
Contact station constructed	1 property
Contact station improved	1 property

Garage constructed	1	property
Service building constructed	1	property
Archaeological restoration		
Effigy mounds reconstructed	2	
Pyramidal mound reconstructed	1	
Stockade partially reconstructed	1	
Shelter constructed	1	property
Museum addition and repairs	1	property
Dam repaired	1	property
Historical residence partially restored	1	property
Foot bridge constructed	2	properties
Stream realignment	1	property
Tree plantings	4	properties

Damages

Over the biennium the extremely high water conditions of Lake Michigan resulted in rather severe damage to lake shore property and facilities along the entire shore line. At Peninsula and Terry Andrae State Parks and Point Beach State Forest the damage from high water ran into many thousands of dollars. Not only were roads, parking areas, docking facilities, bathhouses and other improvements damaged, but the natural features also suffered. In some instances the sand dunes were cut away, composition of the beach material changed from one of sand to stones and gravel or a gentle sloping shore transformed to a cut bank. It appears that the water level is again receding as the biennium comes to a close.

Continued vandalism requires constant maintenance and expenditures to offset the damages done to state property and improvements. There is every indication that this tendency is increasing in proportion to attendance and is being experienced by all agencies in all parts of the country.

New Properties

Through the joint efforts of the State Historical Society and the Division of Forests and Parks, Old Wade House State Park was activated. The historical restoration was undertaken by the Kohler Foundation and completed during the biennium. This park of approximately five acres located at the Village of Greenbush in Sheboygan County contains a restored early American stagecoach inn and tavern complete with outlying buildings and furnishings.

Land Additions and Transfers

At Cox Hollow State Park presently in a state of initial development, 182 acres were acquired. At Peninsula State Park 13 acres on the periphery were sold to a town for high school purposes. Also, at the same park an even exchange of a small parcel allowed the park to acquire contiguous ownership on one side of a road and an abutting cemetery acquired similar ownership on the other side. Eighty acres were acquired at Parfrey's Glen to complete the land area needed at this location and 182 acres were added to the Big Foot Beach State Park.

History and Archaeology

Work with the State Historical Society in the field of applied history on the state historical sites continued. Progress was made in the assembling

STATE PARK ATTENDANCE 1952–1954 (Calendar Years)

State Park	Number of Visitors			Number of Cars			Camper Days		
	1952	1953	1954	1952	1953	1954	1952	1953	1954
Big Foot Beach	121,059	165,099	220,194	26,319	38,492	49,608	242	4,375	8,419
Brunet Island	171,398	192,184	109,099	36,949	38,938	26,772	3,298	3,462	2,356
Castle Mound	N.R.	N.R.	13,928	N.R.	N.R.	4,043	N.R.	N.R.	138
Copper Falls	78,765	67,580	83,399	17,064	14,906	18,079	2,108	2,335	3,457
Cushing	23,661	26,922	28,190	5,990	6,826	7,256	120	49	58
Devil's Lake	1,132,920	1,062,169	1,275,900	288,129	263,822	303,610	70,644	68,494	85,927
First Capitol	7,250	9,950	9,950	1,455	2,487	2,487	0	0	0
Interstate	404,760	452,447	435,929	89,900	98,763	95,169	4,293	3,516	3,520
Lizard Mound	9,713	30,662	30,022	2,450	6,561	7,167	0	0	0
Lucius Woods	54,540	84,772	140,877	15,276	21,955	36,938	605	687	750
Mill Bluff	N.R.	N.R.	27,037	N.R.	N.R.	7,722	N.R.	N.R.	196
Merrick	159,791	117,832	132,900	41,560	27,373	30,662	384	389	410
Nelson Dewey	58,570	52,325	49,745	11,714	10,457	9,549	46	78	122
New Glarus Woods	11,237	8,995	8,792	2,920	2,172	2,302	167	146	175
Ojibwa	9,238	7,557	7,500	2,006	1,894	1,849	402	617	610
Old Wade House*		41,730	28,002		10,433	7,001		0	0
Pattison	203,784	251,269	233,520	51,254	62,975	58,107	2,140	2,141	3,272
Peninsula	491,538	589,405	784,093	151,937	166,951	204,299	45,018	31,271	41,402
Perrot	33,300	50,560	48,701	7,560	9,957	11,995	164	376	350
Potawatomi	229,624	255,918	331,224	64,888	72,450	83,678	4,997	4,316	4,966
Rib Mountain	208,058	208,675	216,615	54,799	55,890	55,998	1,231	1,211	1,588
Roche a Cri	17,321	29,485	22,199	4,933	8,113	5,963	1,442	990	615
Rocky Arbor	55,098	81,441	57,940	16,231	23,635	16,494	1,460	4,106	5,096
Terry Andrae	71,803	102,810	146,555	14,893	23,410	32,202	9,577	4,896	9,998
Tower Hill	25,575	34,074	46,528	7,445	8,660	12,482	428	433	414
Wildcat Mountain	40,640	32,286	47,524	10,160	8,368	10,370	88	194	301
Wyalusing	143,690	138,900	118,115	28,738	25,590	26,352	688	1,140	2,167
Total	3,763,333	4,095,047	4,654,478	954,570	1,011,078	1,128,154	149,542	135,222	176,307

N.R. No record kept prior to 1954.
*Opened in 1953.

and acquisition of both original and period furnishings of the Nelson Dewey Farmstead and Lost Dauphin State Park.

In cooperation with the Wisconsin Archaeological Survey the exploration work at Aztalan was advanced. One of the pyramidal mounds in the northwest corner of the ancient walled city was restored during the summer of 1954. At Lizard Mound State Park two more effigy mounds were reconstructed.

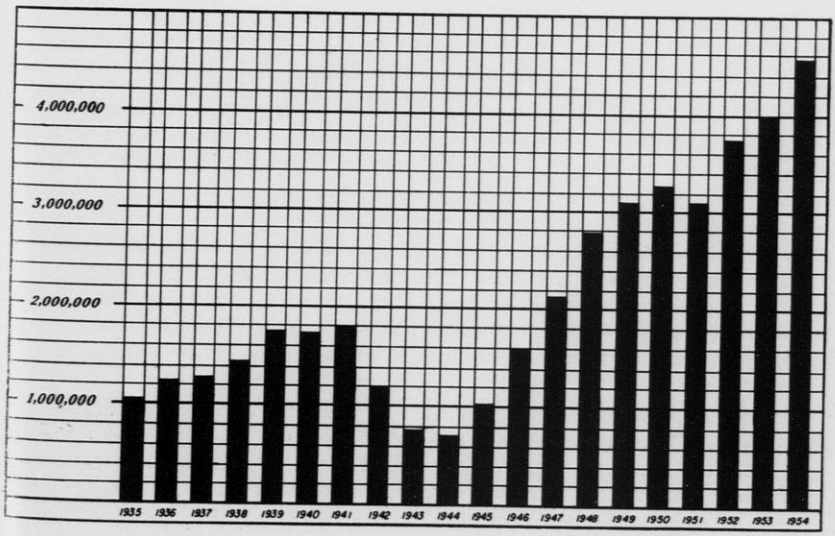
State Park Attendance

Reflecting the trend in attendance experienced by park agencies everywhere, Wisconsin state park attendance showed an increase of nearly one-half million visitors in the biennium. This is a reversal of the decrease of the preceding biennium. With the anticipated increase in population, this trend can only be expected to continue.

The distribution of visitation varies widely. Four parks; namely, Devil's Lake, Interstate, Potawatomi and Peninsula, account for 62% of total visitation. The addition of four other parks raises this figure to 77%. The remaining parks account for only 23% of total visitation.

A 1953 study of the geographical distribution of visitors was made using 19,000 car samples taken in 22 state park and forest properties. Although there were wide variations between the areas sampled, the averages of all areas indicated that 67% of all vehicles registered were from Wisconsin. The neighboring states of Illinois, Iowa, Indiana, Minnesota and Michigan accounted for 29% of the remaining 33%. Of these neighboring states, Illinois was first with 14%. All but one state (Delaware) were represented as well as Germany, England, South Africa, Canada and United States possessions.

STATE PARK ATTENDANCE 1935–1954



Cooperative Forestry

Forest Crop Law

Under the provisions of Chapter 77 of the statutes, both privately owned and county owned lands may be entered under the Forest Crop Law. As of June 30, 1954 there was a total of 2,444,006.69 acres entered under this law. This is an increase of 62,773.18 acres since the last biennium.

Entries of privately owned lands total 279,616.82 acres, an increase of 40,755.21 acres during the past two years. This increase is double that of the previous biennium. Entries under special classification now total 16,026 acres as compared to 10,889 acres at the end of the previous biennium. Lands under special classification are those outside of forest protection districts. For detailed data by county, refer to Table I.

The effectiveness of the Forest Crop Law is not alone the number of acres actually entered under the law but rather its effect in holding the level of general property taxes to a reasonable level which, if too high, may prevent good forest management—and such management is a long-term undertaking. Twelve wood-using industries now have forest holdings of 762,470 acres in 30 counties, on which forest practices have been approved by the Conservation Commission. Almost 52 million trees have been planted on these holdings.

Besides the economic benefit to the state as a result of improved forest management, there is also the benefit of providing the largest class of public hunting grounds in the state since all forest crop lands are open to public hunting and fishing.

Woodland Tax Law

The Woodland Tax Law, Section 77.16 of the statutes, was enacted by the 1953 legislature to encourage better forestry practices and to assist small woodland owners to do a better job of forest management.

This law permits the owner of a tract of land containing less than 40 acres to register his land with the state and receive the benefits of a lower and more equitable tax rate. He will also be given the technical advice and assistance of foresters for tree planting, estimating timber volume and growth, scaling logs, marking trees for a harvest, and preparing forest management plans. There are over 5,500,000 acres of farm woodlots in Wisconsin that contribute to the maintenance of the state's many wood-using industries.

To increase woodland timber production will also be of great importance in many conservation activities. The woodlots are a major source of hard-wood saw and veneer logs. They fit directly into the problem of watershed protection. Ungrazed, they will furnish a great volume of bushy edge important to wildlife in agricultural areas where wildlife cover is scarce.

Example of county forest road construction and improvement, Iron county.

To place lands under this law, the owner need only to file an application showing the location of his land and a pledge to manage the woods for greater timber production. The agreement is for 10 years and the owner will pay a fixed annual tax of 20 cents per acre. An examination will be made each year by a forester of the Conservation Department and recommendations made for improvement of the woodland.

The Woodland Tax Law became effective on January 1, 1954. During the first year of operation, there were 320 applications approved for 7,273 acres. To comply with the tax year, all entries were completed by March 20. During the second year, 516 applications for 12,232 acres have been received and will be processed for 1955 entry.

County Forests

The county forest program has continued to expand during the biennium. This expansion, through an increase in acreage of county owned lands entered under the Forest Crop Law and through continued development of the forests, has been taking place at a rather steady annual rate of increase in recent years. County owned lands entered under the law now total 2,164,389.87 acres, a net increase of 22,017.97 acres during the biennium. Land purchases to improve blocking of present holdings account for most of the increase in acreage. Extensions of county forest boundaries are now the exception rather than the rule.

The number of established county forests, twenty-seven, remains unchanged from the previous two years. Administration of the forests is by

COOPERATIVE FORESTRY—FOREST CROP LANDS BY COUNTIES

JULY 1, 1952–JUNE 30, 1954

County	Private Entries					County Entries					Total Forest Crop Lands
	Prior to July 1, 1952	1953	1954	Withdrawn	Net Private Lands	Prior to July 1, 1952	1953	1954	Withdrawn	Net County Lands	
Adams	1,651.27	200.00			1,851.27						1,851.27
Ashland	1,277.51	120.00			1,397.51	39,066.02	40.00			39,106.02	40,503.53
Barron	771.52				771.52	9,440.51		160.00	120.00	9,480.51	10,252.03
Bayfield	1,060.00	3,512.93	3,928.09	80.00	8,421.02	159,907.99	1,007.43	841.01		161,756.43	170,177.45
Buffalo	80.00				80.00						80.00
Burnett	380.30	106.05	1,524.85		2,011.20	104,471.80	600.00	1,037.26		106,109.06	108,120.26
Calumet	80.00				80.00						80.00
Chippewa	1,349.10	280.00	480.00	60.00	2,049.10	22,869.80	40.00	308.00	40.00	23,177.80	25,226.90
Clark	158.63	40.00	80.00	40.00	238.63	129,296.32	80.00	40.00		129,416.32	129,654.95
Crawford	519.20			519.20							
Door	1,928.73		175.10	73.60	2,030.23						2,030.23
Douglas	14,368.40	20,431.96	1,662.62		36,462.98	236,310.51	2,787.98	2,755.72	112.59	241,741.62	278,204.60
Dunn	1,274.55	641.48	663.30		2,579.33						2,579.33
Eau Claire	760.00	40.00			800.00	40,848.77	840.00	480.00	120.21	42,048.56	42,848.56
Florence	44,354.27		28.73	281.39	44,101.61	38,973.58		480.00	80.08	39,373.50	83,475.11
Forest	30,793.67		80.00	120.00	30,753.67	10,695.07				10,695.07	41,448.74
Grant			921.44	10.00	911.44						911.44
Iron	4,680.00				4,680.00	173,028.93	440.00	40.06		173,508.99	178,188.99
Jackson	400.00			160.00	240.00	112,457.08	360.00		600.63	112,216.45	112,456.45
Juneau	396.51				396.51	14,924.38	120.00	118.81		15,163.19	15,559.70
Kewaunee	78.47				78.47						78.47
La Crosse	160.00				160.00						160.00
Lafayette	51.67				51.67						51.67
Langlade	7,764.97	573.60	817.57	493.60	8,662.54	112,592.14	120.00	360.00	9.89	113,062.25	121,724.79
Lincoln	28,609.83		1,283.51	247.98	29,645.36	95,969.05		159.00	199.18	95,928.87	125,574.23
Manitowoc	190.00	213.50			403.50						403.50
Marathon	2,760.38		200.00		2,960.38						2,960.38
Marinette	818.00	40.00	80.00	40.00	898.00	224,924.20	2,249.21	400.00	40.00	227,533.41	228,431.41
Marquette	55.00	160.00		55.00	160.00						160.00
Monroe	134.00				134.00	2,627.08	271.40			2,898.48	3,032.48
Oconto	693.46				693.46	39,468.44	160.00	80.00	213.37	39,495.07	40,188.53
Oneida	60,857.99	505.89	626.60	78.19	61,912.29	79,313.40	560.00	875.51	752.01	79,996.90	141,909.19
Outagamie	440.00				440.00	236.98			236.98		440.00
Ozaukee			54.60		54.60						54.60
Pierce	150.00		115.00		265.00						265.00
Polk	2,005.61	123.60			2,129.21	9,269.49	360.00			9,629.49	11,758.70

COOPERATIVE FORESTRY–FOREST CROP LANDS BY COUNTIES—Continued

JULY 1, 1952–JUNE 30, 1954

County	Private Entries					County Entries					Total Forest Crop Lands
	Prior to July 1, 1952	1953	1954	Withdrawn	Net Private Lands	Prior to July 1, 1952	1953	1954	Withdrawn	Net County Lands	
Portage	1,545.44	650.02	567.35		2,762.81						2,762.81
Price	2,152.38	80.15	180.00	40.00	2,372.53	84,657.07				84,657.07	87,029.60
Rusk	1,125.22	100.20	156.35	117.40	1,264.37	80,110.76	461.39	780.00	162.00	81,190.15	82,454.52
St. Croix	100.00				100.00						100.00
Sauk	80.00				80.00						80.00
Sawyer	968.37			40.00	928.37	106,159.50	1,222.43	160.00	80.00	107,461.93	108,390.30
Shawano	6,011.03	80.00	284.09	40.00	6,335.12						6,335.12
Sheboygan	41.50				41.50						41.50
Taylor	1,771.28	40.00	420.29		2,231.57	16,016.27		139.89		16,156.16	18,387.73
Vernon	150.00				150.00						150.00
Vilas	2,063.69				2,063.69	31,525.25				31,525.25	33,588.94
Washburn	1,432.20				1,432.20	130,578.30	1,675.18	1,406.60	181.30	133,478.78	134,910.98
Waupaca	500.00	200.00			700.00						700.00
Waushara	500.00	164.00	675.00		1,339.00						1,339.00
Wood	9,367.46			56.30	9,311.16	36,633.21	749.33	200.00		37,582.54	46,893.70
Totals	238,861.61	28,303.38	15,004.49	2,552.66	279,616.82	2,142,371.90	14,144.35	10,821.86	2,948.24	2,164,389.87	2,444,006.69

SUMMARY OF PLANTING AND CULTURAL CUTTING ON COUNTY FORESTS

JULY 1, 1952 TO JUNE 30, 1954

County	*New Planting* — Acres				*Replanting* — Acres				*Cultural Cutting* — Acres			
	Prior to 1952-53	*1952-53*	*1953-54*	*Total to Date*	*Prior to 1952-53*	*1952-53*	*1953-54*	*Total to Date*	*Prior to 1952-53*	*1952-53*	*1953-54*	*Total to Date*
Ashland	466	8	10	484	55			55				
Barron	93	4		97					12			12
Bayfield	7,317	443	461	8,221	958			958	2,302			2,302
Burnett	5,457	457	446	6,360	2,803	66	85	2,954	3,242			3,242
Chippewa	271	41	51	363	6		22	28				
Clark	5,497	247	273	6,017	660			660	174	16		190
Douglas	6,861	52	108	7,021	339			339	42		13	55
Eau Claire	1,975	121	130	2,226	262			262	6			6
Florence	2,265		19	2,284	120			120	50			50
Forest	426	38	20	484	9			9				
Iron	4,109	72	50	4,231	636			636	1,024			1,024
Jackson	6,213	226	221	6,660	972			972	310	240	570	1,120
Juneau	3,192	193	105	3,490	161	20	64	245	251	4		255
Langlade	4,727	48	18	4,793	1,032		3	1,035	1,090	2		1,092
Lincoln	3,001	21	15	3,037	153			153	64	130		194
Marinette	12,128	579	256	12,963	2,883	203	13	3,099	4,833	214	65	5,112
Monroe	98	28	37	163	120			120				
Oconto	6,906	162	56	7,124	889	36		925	2,304			2,304
Oneida	1,703	67	25	1,795	1,425			1,425	1,092		125	1,217
Polk	500	70	70	640	61	22		83	33			33
Price	1,078	48	34	1,160	49			49	230	42		272
Rusk*	942	18	26	986	378			378	2,955		19	2,974
Sawyer*	3,937	71	42	4,035	1,790		39	1,829	4,075	193	21	4,289
Taylor	317	32	27	376	2	2		4	68	0		68
Vilas	2,322	180	53	2,555	6			6	158			158
Washburn	1,487	74	87	1,648	443			443	1,349	144		1,493
Wood	3,767	195	226	4,188	515			515	493			493
TOTALS	87,055	3,495	2,866	93,401	16,727	349	226	17,302	26,157	985	813	27,955

*All figures for "Prior to 1953" have been corrected.

county board committee with the Conservation Department, through its district foresters and assistants providing technical advice and assistance. County supervision of the work program varies from county to county with some counties naming the county agricultural agent as county forest administrator and others having full-time administrators. Principal forest management activities include tree planting, timber sales and cultural cutting. However, many other important activities such as access road construction, firebreak construction, surveying, development of special use areas, watershed management program, more intensive forest management in those counties in which county forest inventories have been completed, etc. are carried on. The department has placed additional foresters on this program in order to properly develop these activities and also to expand service to private owners, a field which warrants increased emphasis.

Work Program

Tree planting programs have been continued but on a smaller scale than in early years of the county forest program. The planting of the large areas of denuded forest land which existed some years ago is now nearing completion. Rather, smaller tracts are now being planted and there is also increased interest in underplanting to improve stocking. Such planting of necessity is more costly as it requires larger size stock and may be limited to hand planting—with a resultant decrease in number of acres planted.

Prior to July 1, 1952, there were 87,055 acres of established county forest plantations. During the first year of the biennium, 3,495 acres were planted and 2,866 acres were established during the second year, bringing the total of established county forest plantations to 93,401 acres. The 2,866 acres planted during the past two-year period is a reduction of 629 acres from the acreage planted during the preceding biennium. These figures are "net" in that plantation failures are written off. Counties having the larger current planting programs are Marinette, Burnett, Bayfield, Clark, Jackson and Wood.

Replanting is being continued on a moderate scale with a total of 575 acres replanted during the two-year period. Improved planting techniques and a series of years with normal rainfall have reduced the necessity for replanting with the result that the total is less than that for the preceding biennium.

Cultural cutting has also been continued, however, on a moderate scale. A total of 1,798 acres was improved during the biennium.

Table II gives detailed information on the above activities by county.

Timber Sales

The volume of timber harvested on county forest lands increased somewhat during the first year of the biennium over the amount harvested the preceding year. It should be noted that Table III is for the period from July 1, 1952 to December 31, 1952, Table IV is for the full year 1953 and Table V is for the period from January 1, 1954 to June 30, 1954. In 1953, the number of sales totaled 528 and a volume of 3,317,650 board feet of sawlogs was harvested. During the same year a total of 86,830 cords of cordwood products was harvested as well as other products such as poles, posts and crossties. As usual, aspen was the leading species cut with 57,375

SUMMARY OF TIMBER SALES ON COUNTY FORESTS

July 1, 1952 to December 31, 1952

County	No. of Sales	Logs		Cordwood						Piece Products			Total Sales Value
		Softwoods	Hardwoods	Pine	Spruce	Balsam	Other Conifers	Aspen	Other Hwds.	Ties	Posts	Poles	
		Board Feet											
Ashland													
Barron													$
Bayfield	20	74,930	116,320	104	22	562	378	8,311			173		23,028.05
Burnett	1			152	1								1,156.12
Chippewa	1	360				1		51					103.52
Clark													
Douglas	39	58,340	20,250	324	353	1,262	20	9,675	2		3,183	87	21,545.71
Eau Claire	10	1,330		950				254					5,242.33
Florence	7	6,160	3,030	160	82	206		703	5				3,374.14
Forest													
Iron	14	5,550	277,660	1	385	648	340	642	153				10,206.73
Jackson	6			374				94	35				1,762.02
Juneau	1			40									80.14
Langlade	21	48,550	268,200	36	508	1,718	110	1,156	4		2,827		25,817.31
Lincoln	5				99	464	265	169	63	21	135		4,085.35
Marinette	20	118,300	106,140	723	145	414	105	8,432			3,657		37,579.56
Monroe													
Oconto	14	23,660	2,580	221		3		943	23		162		4,435.77
Oneida	3	10,070	6,600				82	83					516.44
Polk													
Price													
Rusk	28	37,120	130,760		5	8		686			928		4,725.54
Sawyer	30	85,400	58,480	94	74	43	277	1,347	6		22,736	45	7,617.18
Taylor													
Vilas													
Washburn	15	19,140	165,850	34	21	109		1,125	20			503	5,814.37
Wood													
TOTALS	235	488,910	1,155,870	3,213	1,695	5,438	1,577	33,671	311	21	33,801	635	$157,090.28

SUMMARY OF TIMBER SALES ON COUNTY FORESTS

1953

County	No. of Sales	Logs		Cordwood						Piece Products			Total Sales Value
		Softwoods	Hardwoods	Pine	Spruce	Balsam	Other Conifers	Aspen	Other Hwds.	Ties	Posts	Poles	
		Board Feet											
Ashland	37	9,700	214,510	10	323	1,994	1,177	455	21		3,598	364	$ 17,638.43
Barron	1							69					119.85
Bayfield	13	2,190	57,180	1,269	304	59		1,650					14,161.94
Burnett	14	1,310	3,400	1,778	12	71	21	255			1,400		15,521.19
Chippewa	24	2,550	6,580			5		599	29		297		1,482.94
Clark	13	38,210	34,050	584				69	2				6,814.85
Douglas	40	25,460	46,650	395	201	680		12,371	9		11,531	1,375	29,480.61
Eau Claire	9			1,416				201					9,304.81
Florence	10	23,200	2,500	176	42	80	12	1,241			1,155	37	3,918.62
Forest	1		1,920										32.64
Iron	32	328,500	45,170		462	1,566	566	3,669	326	377			25,323.48
Jackson	11	4,100		3,013				6					17,624.59
Juneau	2			57									276.57
Langlade	17	66,800	162,870		98	1,052	831	551	215		101	160	14,630.35
Lincoln	19	2,460	5,520		51	454	236	2,192	135		1,227		9,436.53
Marinette	36	286,500	121,800	868	822	1,258	124	10,478			13,338	942	54,299.07
Monroe													
Oconto	10	6,800	26,900			1	15	1,145					4,420.05
Oneida	49	77,570	113,580	175	720	1,211	1,415	3,542	390		4,580	539	27,466.58
Polk	4	11,580	2,840	866									5,433.87
Price	58	41,710	33,240		132	195	376	12,244	294				32,693.44
Rusk	48	81,370	862,520					905			3,282		27,213.83
Sawyer	32	106,030	239,300		9	57	90	2,416	37		11,899		10,316.89
Taylor	14	3,460	1,870		2	37	14	403	116		728		1,241.06
Vilas	4	1,250	17,470	3	26	35		922	100				2,265.18
Washburn	27	23,990	171,040	163	18	37	44	1,887				200	9,547.53
Wood	3	100	1,900	73				105					607.65
TOTALS	528	1,144,840	2,172,810	10,846	3,222	8,792	4,921	57,375	1,674	377	53,136	3,617	$341,172.55

SUMMARY OF TIMBER SALES ON COUNTY FORESTS

January 1, 1954–June 30, 1954

County	No. of Sales	Logs		Cordwood						Piece Products			Total Sales Value
		Softwoods	Hardwoods	Pine	Spruce	Balsam	Other Conifers	Aspen	Other Hwds.	Ties	Posts	Poles	
		Board Feet											
Ashland													$
Barron													
Bayfield	8	79,310	210,090	7	39	315	163	2,858			1,730	176	13,898.90
Burnett	11	300		2,357	4		51	302			1,166		17,066.10
Chippewa	29	6,050	12,230			5		1,175			158		2,852.57
Clark	14	4,460	53,240	90				365	15				6,257.11
Douglas	20	5,310	13,040	71	36	379	49	1,289			2,209	101	5,701.89
Eau Claire	12	7,900	12,500	2,185			37	20					12,696.09
Florence	1							564					563.84
Forest													
Iron	20	2,290	940,110		206	645	498	68	180				24,432.58
Jackson	15	5,300		1,779				30			225		11,020.50
Juneau	1			20									102.41
Langlade	11	50,710	186,660		67	612	834	2,121	276		111		18,273.69
Lincoln	10				41	292	35	1,172	110		1,097		4,034.70
Marinette	3	6,420			25	197	7	3,590	49		1,550		10,044.50
Monroe	1			67									385.97
Oconto	17	22,500	9,800	24	2	24	5	673	12		689		3,335.47
Oneida	42	84,900	51,580	252	337	777	676	6,642	345		313	92	26,974.12
Polk													
Price													
Rusk													
Sawyer													
Taylor	13	590				35	3	590	108		621		1,494.59
Vilas	2	4,310	8,900	6	3	33	17	576	77				1,943.07
Washburn	28	16,350	75,140	246	23	179	186	1,130			401		7,629.91
Wood	4	5,640	2,950	77				48	15				312.22
TOTALS	262	302,340	1,576,240	7,181	783	3,493	2,561	23,213	1,187		10,270	369	$169,020.23

cords. Spruce with 10,846 cords and balsam with 8,792 cords ranked second and third respectively. Total value of these products was $341,172.55.

For the first six months of 1954 (Table V) the figures indicate that the harvest has remained fairly constant. However, fewer new sales were made during this period due to poor market conditions so revenues may be reduced for a time in the future. During this period the number of sales completed was 262. Sawlog volume totaled 1,878,580 board feet and cordwood volume totaled only 38,418 cords, a reflection of the slump in the pulpwood market. Total sales value for the period was $169,020.23.

Assistance to Private Forest Landowners

The objectives of this phase of the cooperative forestry program are to maintain and improve the productivity of small woodlands, thereby increasing the financial return to the woodland owner through increased quantity and quality of timber as well as increasing the supply of raw materials used by the wood-using industries of the state. Besides the financial aspect, much consideration is given to the conservation of soil and water as well as providing favorable food and cover conditions for many species of wildlife.

To accomplish these objectives, forestry advice and assistance are given to private landowners in the management of their forest lands. These services include cruising and determination of growth for the preparation of management plans, marking, marketing, planting recommendations based on site analysis and plantation layout and other forestry services. In addition, the foresters whose districts are not within the area of the state under intensive forest protection are responsible for the department's cooperative forest fire control program.

ACCOMPLISHMENT REPORT—SERVICE TO PRIVATE OWNERS

Item	*Fiscal Years*		*Total*
	1952-53	*1953-54*	
Projects activated	11	16	
Owners given assistance—No.	1,463	1,914	3,377
Woodland involved—Acres	46,011	65,780	111,791
Timber marked—M.B.F.	4,793	8,411	13,204
—Cords	1,262	1,542	2,804
—Acres	4,609	5,145	9,754
Timber inventoried for management plans—M.B.F.	17,568	25,771	43,339
—Cords	3,272	5,302	8,574
—Acres	4,898	6,347	11,245
Woodlands using improved practices—No.	1,083	1,349	2,432
Commercial timber cut—Acres	4,277	4,633	8,910
Forest stand improvement cut—Acres	521	1,133	1,654
Land planted—Acres	2,892	3,019	5,911
Woodland protected, grazing—Acres	21,178	33,220	54,398
Products harvested using improved practices:			
Sawlogs, veneer, lumber—M.B.F.	4,858	3,515	8,373
Pulpwood—Cords	1,486	2,401	3,887
Ties—No.	19,969	22,246	42,215
Fuel wood—Cords	829	1,410	2,239
Posts—No.	6,600	8,405	15,005
Total—Converted to M.B.F.	6,646	6,190	12,830
Products harvested—Market assistance only	1,367	2,126	3,493
Total products harvested—M.B.F.	7,999	8,258	16,257

The U. S. Forest Service cooperates with the department in the small woodland or farm forestry program through federal aids which support the program in part and are received under the Cooperative Forest Management Act of 1950. This cooperative agreement applies to the farm forestry projects only.

In addition, similar service is given to private owners in the north by the district foresters under the county forest program.

Use of standard farm machinery to load wood products— in this case, pulpwood.

Table VI is a statistical summary of the 16 farm forestry projects and shows that for the biennium 3,377 owners were given assistance of which 2,432 adopted improved practices. The woodland involved totaled 111,791 acres. The acreage planted was 5,911 and there were 54,398 acres placed under protection from grazing. Products harvested using improved practices include 8,373,000 board feet of saw and veneer logs, 3,887 cords of pulpwood, 42,215 tie cuts, 2,239 cords of fuel wood, 15,005 posts and other products such as poles, piling and Christmas trees. The total when con-

verted to log scale equivalent amounts to 12,830,000 board feet. An additional 3,493,000 board feet were harvested with marketing assistance only, bringing the total cut on which assistance was given to 16,257,000 board feet. It should be pointed out that there has, with slight variations, been a steady increase since the beginning of the program in all activities including the number of requests for assistance.

In addition to the accomplishments shown in the tabulated statistical report, there are numerous other functions carried on such as other departmental responsibilities and cooperation with other agencies. Cooperative projects of an educational nature were carried on with the 4–H, Future Farmers of America and school forest programs under which free trees are received from the department and technical advice from the district foresters in the selection, care and planting of trees is also provided. A similar type of program is carried on with the public and quasi-public agencies entitled to free trees such as community forests, Boy Scouts, Girl Scouts, church groups, conservation groups and others. Forest management assistance is also furnished to many of these groups.

Tree planting, forest management and maple syrup demonstrations and institutes are carried on in cooperation with the Extension Service of the University of Wisconsin.

The district foresters have been delegated the responsibility of making technical recommendations and inspecting forestry practices under the Agricultural Conservation Program. They also are responsible for the technical forest management phases for the landowners cooperating with the Soil Conservation Service.

Considerable time is spent in cooperating with other divisions of the department such as forest protection (in areas where the foresters are not responsible for fire control), law enforcement, fish and game habitat projects, watershed management projects and the high school information and education program.

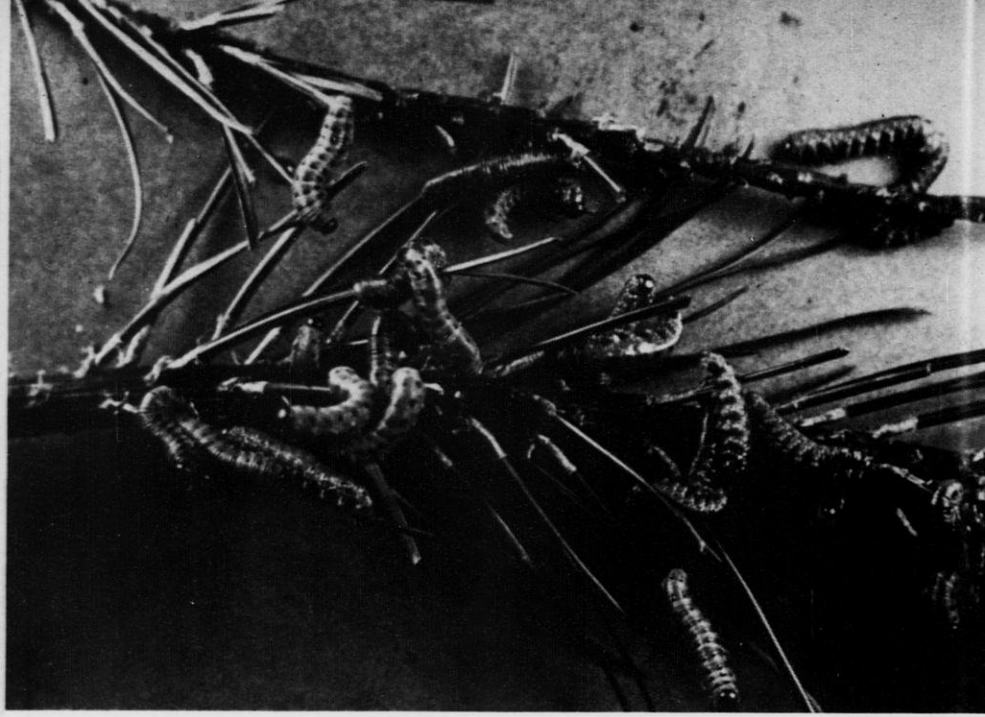
Projects closely allied to technical forest management but also impossible to adequately summarize statistically are cooperating in insect and disease survey and control, Forest Crop and Woodland Tax Law land examinations, and working with conservation and agricultural committees of the county boards.

Cooperative programs and technical service are furnished to the smaller wood-using industries and woodland operators who request it.

Forest Pest Control

The past biennium has witnessed a remarkable recovery of Norway pine plantations treated for the Saratoga spittlebug. During this time some of the more critical insect infestations have abated but others that previously had played, for the most part, a relatively minor role, have flared up and now pose as a threat to valuable stands ranging in size from reproduction to those approaching merchantable sizes. Also of great concern are pests that are dangerously close to Wisconsin's borders.

During this same period the addition of more personnel to the observer force has increased its effectiveness in coverage, reporting and control. The forest pest control program was supplemented in 1953 with an increased



Red-headed pine sawfly larvae feeding on jack pine.

number of observers from other divisions of this department as well as from counties and private industry. As of 1954, there were 125 departmental observers and about 50 cooperative observers.

In both 1953 and 1954, training schools were held at Eagle River for the purpose of instructing department observers in the basic concepts of entomology, survey and control. Instructors were professors from the University of Wisconsin and department personnel.

In 1953, the acreages sprayed were much lower than had been anticipated earlier in the year. Aerial spraying was done on 265 acres of county forest in Oconto, Marinette and Florence Counties for the Saratoga spittlebug *(Aphrophroa saratogensis)*.

Approximately 150 acres were sprayed by hand to control a number of destructive sawflies. The largest single area was in Lincoln County where 20 acres were sprayed to control the red-headed pine sawfly *(Neodiprion lecontei)* on Norway pine.

In May and early June, private landowners in Bayfield, Burnett, Douglas and Washburn Counties had aerial spraying done to control the forest tent caterpillar *(Malacosoma disstria)* on and adjacent to their property. The state did some ground control work in Pattison Park.

An outbreak of the forest tent caterpillar has been in progress since the summer of 1952. Complete defoliation of aspen and other hardwoods has taken place over thousands of acres in the northwest counties of the state. Appraisal surveys indicate the peak of the outbreak may have been reached in this area during the 1954 season. Although the infestation is increasing

in area, the caterpillar population is expected to be reduced in areas which previously have been heavily defoliated. A native parasitic fly *(Sarcophaga aldrichi)* along with starvation, adverse weather and other physiological and biological factors, has undoubtedly caused a material decline in the caterpillar population. Unfortunately, the appearance of this fly in great numbers in resort areas is a nuisance.

The resultant damage caused by the series of defoliations to our aspen forests has been negligible to date. Aspen defoliates in July and continues to grow throughout the season. The most significant detriment is the discomfort to local residents and vacationers caused by the appearance of millions of caterpillars and flies during the height of the vacation season.

In 1953, the continued buildup of a sucking insect, the pine tortoise scale, was noted in jack pine plantations of Oconto, Marinette and Florence Counties. This rather inconspicuous, sedentary insect, which previously had been considered a minor pest, caused severe losses in an outbreak of over 5,000 acres. Aerial and ground surveys were conducted to determine the extent of the outbreak. During the summer of 1954, about 1,200 acres of the more heavily infested areas were sprayed experimentally. The project was conducted in cooperation with Marinette County and the University of Wisconsin. Results of this operation cannot be evaluated at this time. However, it is estimated that approximately 500 acres of plantation and valuable natural reproduction have been destroyed by this pest.

Another destructive insect of economic importance to the state's jack pine stands is the jack pine budworm. Two serious outbreaks of the insect were surveyed in 1954. An outbreak of approximately 20,000 acres is in progress at present in Washburn and Douglas Counties. The epidemic is developing in mature stands of jack pine and most of the damage is confined to the smaller diameter classes and to the reproduction in these stands. This was determined through the cooperative efforts of the University and the department.

In Marinette County, a budworm infestation of 8,900 acres is attacking stands of variable stocking and age classes.

A cooperative project between the Lake States Forest Experiment Station and the department was conducted in late June of 1954 for the purpose of determining the maximum elevation at which cover type mapping by use of airplanes could be conducted with reasonable accuracy employing an operations recorder. It is felt that an instrument of this type can be used in mapping infestations in the state quickly and cheaply. The department's Cessna 180 airplane was used in the operation and the operations recorder was furnished by the U. S. Forest Service. A check strip of the timber types covering 36 linear miles was prepared by photo interpreters for determining the reliability of the type delineation.

The Dutch elm disease constitutes a serious threat to the elms in the state since large numbers of the principal vector, the smaller European elm bark beetle, can now be found in most of the southern counties of the state. This insect has been found as far north as Fond du Lac. To date, the disease has not been reported in the state but it is known to be just across the border in Rockford, Illinois. Phloem necrosis, a virus disease of the American elm, is also known to be in Rockford. The causative virus

is highly infectious and in some areas of the country 50 to 75 percent of the American elms have been killed within 5 years. The vector of this disease is a leafhopper *(Scaphoideus luteolus)* which can be found in numbers in Wisconsin. It is not known whether the disease will spread northward as it appears to prefer the milder climates.

Another serious pest that is dangerously close to Wisconsin is the gypsy moth which causes millions of dollars of damage annually in the East. The insect was found in Lansing, Michigan in 1954. Controls were instituted immediately but results are not fully known as yet.

During the past two years, a series of meetings and conferences have been held with representatives of neighboring states, U. S. Forest Service and Canada to coordinate survey and control activities.

Forest Inventory

The forest inventory of 32 northern and central counties, based on the use of aerial photographs and consisting of an area of approximately 18,000,000 acres to be surveyed, has progressed considerably although not as rapidly as planned. This project may be divided into two types of surveys, namely: (1) the extensive survey of entire counties based on a statistical sampling plan and (2) the intensive inventories of state and county forests and the 100% mapping of the industrial forests of cooperators. Original plans called for completion of the aerial photography and field work for the extensive survey within a three-year period with the fourth year to complete the computing and county reports. It was expected that completion of the intensive inventories would follow completion of the extensive survey as rapidly as possible. Lack of photography has prevented completion of the extensive inventory as scheduled.

The status of the various phases of the inventory project is as follows:

Photography: Completed aerial photography has been obtained for 27 of the 32 counties to be inventoried. Those counties for which satisfactory photography is not available are Lincoln, Marinette, Oconto, Price and Shawano Counties.

Many problems have been had in obtaining the necessary photography. A combination of poor weather for the taking of aerial photos during the early years of the project and a contractor who was unable to meet his contract account for the failure to complete this important phase of the work. Accomplishments during the biennium in obtaining photography have been negligible.

It should be noted that the lack of photography for five counties directly affects the completion of a total of 14 counties. This is due to the inventory's having been set up on the basis of sampling units of two or more counties each and as long as photography is unavailable for one county, it prevents completion of all of the other counties in the sampling unit or units. Four sampling units are so affected and although the mapping and field work has been completed for nine counties within these units, no further progress can be made until photography is available for the above named counties.

Mapping: All mapping for the extensive survey has been completed to the limit of available photography with the exception of Bayfield County

which is 90% complete. This means that this phase of the work is completed for all counties within the inventory area except Lincoln, Marinette, Oconto, Price and Shawano Counties. Mapping includes the photo interpretation and field checking of 36 or 54 forty-acre sample blocks per township, depending upon whether or not a county has more or less than 40% forest land. The 54 sample block system is used when a county has less than 40% forest land and vice versa.

Cruising: Progress in cruising, which consists of the measurement of a large number of 1/5 acre sample plots to determine volume, growth, allowable cut, etc., the number of plots depending on the value and density of stocking of the type to be cruised, is the same as that for mapping—it has been completed for all practical purposes to the limit of available photography. To date, a total of 7,225 sample plots has been measured for the extensive inventory, 849 of which are permanent sample plots which will be available for remeasurement in the future in order to keep the inventory up to date.

Computing and reporting: The computing phase of inventory work is rather complex and it is difficult to report progress. Acreage computations have been completed for 17 counties; volume, growth and allowable cut computations for 12 counties; special studies for 15 counties; reports have been written for five counties and reports for four additional counties are 75% complete. The "Forest Resources of Waushara County" report has been published and reports for Waupaca, Portage, Adams and Marquette Counties need only to be published. Reports for Jackson, Juneau, Monroe and Wood will follow.

Intensive Inventories: As previously stated, the intensive inventory of the industrial forests of cooperators is defined as the 100% mapping of the forests; that for state and county forests includes not only 100% mapping but cruising, computing and reporting as well so that a complete inventory is the result.

While the lack of photography has caused a delay in the extensive survey, there has been a corresponding acceleration in the intensive survey. To date, 925,422 acres or 82% of the industrial forests, 1,210,632 acres or 56% of the county forests and 558,317 or 97% of other ownerships have been mapped. The latter group includes state forests (Brule River and 80% of the Flambeau River), the Central Wisconsin Conservation Area, Buena Vista Marsh, Necedah Wildlife Refuge, Superior Municipal Forest and others. A total of 12 county forests has been mapped during the biennium and the mapping of the Langlade County Forest will be completed in the near future.

Cruising of the Douglas County Forest has been completed and that for the Oneida County Forest is approximately 50% complete.

Work will be continued on the intensive surveys as time permits but emphasis will remain on the extensive surveys in order to complete them as rapidly as possible.

Clerical

The clerical division is composed of employees not only in the Madison office but in all of the five conservation area headquarters, and twelve other offices in cities throughout the state and as such renders service to the department, both in the Madison headquarters and in the field according to the programs of the various divisions.

The department has continued expansion in all fields of activity and this expansion has reflected itself in the greater amount of work delegated to the clerical division—typing, filing, mail and supply, stenographic. It was difficult to keep pace with this work because of rapid personnel turn-over and University students were hired on a part-time emergency basis to supplement the regular force.

More labor saving equipment was purchased to enable the division to speed up and organize its work. Mimeograph machines were purchased for four area offices to enable them to keep abreast with the increased work loads. In the main office, a collator speeds assembling of duplicated material. A varigraph facilitates preparation of covers and front pages for booklets, programs and similar material, and also lends a professional appearance to the finished product. A mimeograph, DSJ composing machine and copying machine were also purchased, each doing its part to speed up the work and add to the efficiency of the division.

A new telephone system has been installed. The central switchboard was abolished and individual phones installed whereby a division chief's telephone may be answered either in his office or at his secretary's desk in his absence. This enables the receptionist to devote her time to general incoming calls and to visitors seeking information.

A considerable amount of work was entailed in revising the Conservation Bulletin mailing list. The revision involved the mailing out of about 45,000 double postcards. Those who returned the cards were kept on the list and those who did not were dropped. The list was carefully checked for duplication and incorrect addresses.

The filing section was redecorated and fluorescent lighting installed. The typing section was assigned additional space so that most of the equipment and personnel are now located in one office, enabling this section to operate more efficiently.

Tragedy again struck the clerical division when Margaret Mack Wilson, an employee at the Nevin headquarters, was killed in an automobile accident in Wyoming, following her marriage nine days earlier to Robert Wilson, also a department employee in the fish management division.

FINANCIAL REPORT 1952–1953

CONSERVATION FUND

Exhibit A

BEGINNING AND ENDING BALANCES AND TRANSACTIONS OF THE OVERALL CONSERVATION FUND FOR THE FISCAL YEAR 1952–1953

	Balance Forwarded From 1951-52	*Plus Revenue 1952-1953*	*Minus Disbursements 1952-1953*	*Plus Transfers 1952-1953*	*Minus Transfers 1952-1953*	*Balance Forwarded To 1953-1954*
Fish and Game	$ 711,976.83	$3,517,493.29	$3,032,020.81	$	(a) $ 9,500.00	
					(b) 38,356.11	
					(c) 6,000.00	
					(d) 42,017.00	
					(e) 100,000.00	
				(j) 87,507.02	(f) 273,275.00	
				(k) 212,043.89	(g) 40,000.00	
				(l) 21,092.81	(h) 37,000.00	
				(m) 14,172.61	(i) 193,209.00	$ 792,908.53
U. of W. Wildlife Education			9,500.00	(a) 9,500.00		—0—
Water Pollution Committee			38,356.11	(b) 38,356.11		—0—
Water Regulatory Board			6,000.00	(c) 6,000.00		—0—
Bounties—½ Fox			42,017.00	(d) 42,017.00		—0—
Deer Feeding and Deer Yard Acq	78,698.71	104,105.14	115,667.09	(k) 19,682.07		86,818.83 (1)
Public Hunt. and Fish. Grounds (Res. Hunt. Lic.)	71,665.03	180,454.98	259,958.20	(k) 148,721.79		140,883.60 (1)
Public Hunt. and Fish. Grounds (Civil Action)	3,939.67	665.50				4,605.17 (1)
Public Hunt. and Fish. Grounds (Sportsmen's Lic.)	87,994.69	89,384.23	107,874.01			69,504.91
C.W.C.A.—Black River Falls	4,442.18	43,172.32	10,115.07	(k) 3,325.07		40,824.50 (1)
C.W.C.A.—Meadow Valley	11,177.01	13,812.52	4,386.76			20,602.77 (1)
Cancelled Drafts	3,132.92	425.58	893.80			2,664.70
Fire Loss	3,787.78	1,297.52	1,981.21			3,104.09
Recreational Advertising	979.77		93,276.25	(e) 100,000.00		7,703.52 (1)
Imprest Fund	5,000.00					5,000.00
Federal Aid—Clarke-McNary		351,260.63			(n) 351,260.63	—0—
Federal Aid—Dingell-Johnson		87,507.02			(j) 87,507.02	—0—
Federal Aid—Pittman Robertson	155.31	383,617.51			(k) 383,772.82	—0—
Rough Fish Control	21,092.81		245,647.46	(f) 273,275.00	(l) 21,092.81	27,627.54 (1)
Forestry	945,399.61	2,754,511.12	2,319,148.44		(o) 180,000.00	
				(n) 351,260.63	(p) 200,000.00	1,352,022.92
Kettle Moraine—Operation	72,566.63	13,911.53	159,082.90	(p) 200,000.00	(q) 66,667.00	60,728.26
Kettle Moraine—Land	30,748.80		95,683.15	(q) 66,667.00		1,732.65
County Forestry Aid			180,000.00	(o) 180,000.00		—0—
Forestry Reserve	300,000.00					300,000.00
Deer and Bear Damage	14,172.61		11,518 10	(g) 40,000.00	(m) 14,172.61	28,481.90 (1)
Raccoon Propagation	13,441.70	11,359.10	7,251.98			17,548.82 (1)
Conservation Warden Pension			37,000.00	(h) 37,000.00		—0—
State Parks	9,136.20	218,040.53	407,502.12	(i) 193,209.00		12,883.61 (1)
TOTAL CONSERVATION FUND	$2,389,508.26	$7,771,018.52	$7,184,880.46	$2,043,830.00	$2,043,830.00	$2,975,646.32

(1) Balance will revert to Fish and Game.

Schedule A–1

CONSERVATION FUND

TRANSFERS

(a) $9,500.00 transferred from Fish and Game Appropriation to University of Wisconsin Wildlife Education and Research in accordance with statutes.
(b) $38,356.11 transferred from Fish and Game Appropriation to Water Pollution Committee in accordance with statutes.
(c) $6,000.00 transferred from Fish and Game Appropriation to Water Regulatory Board in accordance with statutes.
(d) $42,017.00 transferred from Fish and Game Appropriation to cover the payment of ½ of the Fox Bounties.
(e) $100,000.00 transferred from Fish and Game Appropriation to Recreational Advertising Appropriation.
(f) $273,275.00 transferred from Fish and Game Appropriation to Rough Fish Control Appropriation.
(g) $40,000.00 transferred from Fish and Game Appropriation to Deer and Bear Damage Appropriation in accordance with statutes.
(h) $37,000.00 transferred from Fish and Game Appropriation to Conservation Wardens Pension fund in accordance with statutes.
(i) $193,209.00 transferred from Fish and Game Appropriation to State Parks Appropriation.
(j) $87,507.02 transferred from Dingell–Johnson Federal Aid to Fish and Game Appropriation.
(k) $212,043.89 transferred to Fish and Game Appropriation, $19,682.07 transferred to Deeryard Acquisition and Feeding, $148,721.79 transferred to Public Hunting and Fishing Appropriation, and $3,325.07 transferred to C.W.C.A.—Black River Falls Appropriation from Pittman–Robertson Federal Aid.
(l) $21,092.81 transferred to Fish and Game Appropriation from Rough Fish Appropriation.
(m) $14,172.61 transferred to Fish and Game Appropriation from Deer and Bear Damage Appropriation.
(n) $351,260.63 transferred from Clarke–McNary Federal Aid to Forestry Appropriation.
(o) $180,000.00 transferred from Forestry Appropriation to County Forestry Aid Appropriation.
(p) $200,000.00 transferred from Forestry Appropriation to Southern Wisconsin Forests (Kettle Moraine) Appropriation.
(q) $66,667.00 transferred from Southern Wisconsin Forests Appropriation to Kettle Moraine Land Appropriation.

Schedule A–2

CONSERVATION FUND REVENUE

	Net Revenue 1952–1953
FISH AND GAME	
Fishing Licenses	
Fish Shipping Coupons	$ 1,117.40
Nonresident Fishing Licenses	1,022,425.85
Nonresident Combination 10 Day Fishing Licenses	163,646.75
Resident Fishing Licenses	617,454.20
Great Lakes Commercial Fishing Licenses	12,562.00
Mississippi River Commercial Fishing Licenses	5,299.25
Bank Pole Fishing Licenses	1,238.40
Cisco Fishing Licenses	549.00
Private Fish Hatchery Licenses	1,485.00
Slat Net Licenses and Tags	1,577.00
Wholesale Fish Dealer Licenses	4,925.00
Bait Dealer Licenses	3,695.00
Set Line Licenses and Tags	3,459.10
Sturgeon Tags	6,550.00
Game Licenses	
Sportsmen Licenses—(Hunting, Fishing, Trapping)	148,344.00
Resident Small Game Hunting Licenses	485,618.20
Resident Big Game Hunting Licenses	379,974.30
Nonresident Small Game Hunting Licenses	49,671.25
Nonresident Big Game Hunting Licenses	61,946.25
Nonresident Archer Hunting Licenses	10,138.20
Nonresident Hunting Preserve Licenses	1,355.00
Shooting Preserve Licenses and Tags	1,002.00
Settler's Small Game Hunting Licenses	463.50
Settler's Big Game Hunting Licenses	396.00
Trapping Licenses	18,141.60
Trap Tags	59,603.30
Beaver Trapping Licenses	3,605.00
Beaver Pelt Tags	13,524.00
Deer Farm Licenses and Tags	1,583.35
Game Farm Licenses and Tags	1,522.99
Muskrat Farm Licenses and Tags	7,555.90
Beaver Farm Licenses and Tags	197.75
Otter—Raccoon—Skunk Farm Licenses	379.23
Fur Dealer Licenses	4,850.00
Other Licenses	
Christmas Tree Dealer Licenses and Tags	5,999.15
Duplicate Licenses	1,426.75
Guide Licenses	970.00
Taxidermist Licenses	510.00
Scientist Certificates	56.00
Miscellaneous	
Interest on Investments	57,229.09
Interest on Deposits	543.85
Premium on Bonds	475.00
Warden and Witness Fees	4,128.83
Rent and Rentals	1,209.03
Accommodation Services	205.00
Activity Services	2,300.00
Supervision Services	527.46
Convenience Services	34.75
Sale of Resources	38,225.11
Sale of Confiscations and Seizures	14,591.29
Sale of Produced or Processed Items	7,793.50
Sale of Equipment	6,793.66
Sale of Supplies	5,560.23
Sale of Buildings and Structures	1,133.00
Sale of Signs	443.09
Sale of Salvage and Scrap	572.63
Sale of Other Products	44.40
Sale of Rough Fish	156,808.12
Commission on Sale of Rough Fish	8,551.61
Gifts and Donations	10.00
Occupational Tax—Mink	5,634.22
Other Revenue	161.75
Highway Commission Contribution—Rec. Adv.	100,000.00
TOTAL FISH AND GAME	$3,517,493.29

CONSERVATION FUND REVENUE—Continued

	Net Revenue 1952-1953
DEER FEEDING AND DEERYARD ACQUISITION	
Resident Big Game Hunting Licenses	$ 99,964.00
Settler's Big Game Hunting Licenses	99.00
Sale of Resources	2,591.74
Sale of Supplies	1,427.40
Prepayment of Taxes	23.00
TOTAL DEER FEEDING AND DEERYARD ACQUISITION	$ 104,105.14
PUBLIC HUNTING AND FISHING GROUNDS (Res. Hunt. Lic.)	
Resident Small Game Hunting Licenses	$ 173,415.00
Settler's Small Game Hunting Licenses	154.00
Rent and Rentals	15.00
Sale of Resources	1,943.75
Sale of Buildings and Structures	4,695.70
Sale of Salvage and Scrap	123.00
Prepayment of Taxes	106.21
Other Revenue	2.32
TOTAL PUBLIC HUNTING AND FISHING GROUNDS (Res. Hunt. Lic.)	$ 180,454.98
PUBLIC HUNTING AND FISHING GROUNDS (Civil Action)	
Civil Action Damages	$ 665.50
TOTAL PUBLIC HUNTING AND FISHING GROUNDS (Civil Action)	$ 665.50
PUBLIC HUNTING AND FISHING GROUNDS (Sportsmen Licenses)	
Sportsmen Licenses—Hunting, Fishing, Trapping	$ 89,233.23
Sale of Buildings and Structures	151.00
TOTAL PUBLIC HUNTING AND FISHING GROUNDS (Sportsmen's Licenses)	$ 89,384.23
C.W.C.A.—Black River Falls	
Rent and Rentals	$ 539.69
Sale of Resources—Timber	38,128.58
Sale of Resources—Moss	4,386.30
Sale of Resources	52.50
Sale of Produced or Processed Items	56.25
Sale of Salvage and Scrap	9.00
TOTAL C.W.C.A—Black River Falls	$ 43,172.32
C.W.C.A.—Meadow Valley	
Sale of Resources—Timber	$ 9,287.01
Sale of Resources—Moss	4,149.40
Sale of Resources—Minnows	290.11
Other Revenue	86.00
TOTAL C.W.C.A—Meadow Valley	$ 13,812.52
CANCELLED DRAFTS	
Cancelled Drafts	$ 425.58
TOTAL CANCELLED DRAFTS	$ 425.58
FIRE LOSS	
Fire Loss	$ 1,297.52
TOTAL FIRE LOSS	$ 1,297.52

CONSERVATION FUND REVENUE—Continued

	Net Revenue 1952–1953
FEDERAL AID	
Pittman-Robertson	
Co-ordination	$ 29,446.97
Pheasant—Quail Research	16,177.92
Deer Research	12,702.63
Fur Research	19,230.59
Waterfowl Research	23,640.93
Grouse Research	20,310.88
Pathological Research	2,013.56
Capercaillie and Black Grouse Research	87.20
Game Census and Survey	22,947.07
Regional Development	44,616.28
Ackley Area Development	104.77
Crex Meadows Development	24,802.11
C.W.C.A.—Black River Falls Development	9,528.91
C.W.C.A.—Meadow Valley Development	10,634.02
Yellowstone Development	7,117.88
Totogatic Development	10,267.04
Browntown Development	6,524.81
Wood County Development	2,534.38
Rock County Maintenance	1,939.73
Horicon Marsh Maintenance	12,586.60
C.W.C.A.—Black River Falls Maintenance	1,522.97
C.W.C.A.—Meadow Valley Maintenance	451.67
Crex Meadows Maintenance	11,204.09
Forest Habitat Improvement	19,682.07
Muskrat and Waterfowl Habitat Improvement	5,370.44
Land Acquisition	68,201.99
TOTAL FEDERAL AID—Pittman-Robertson	$ 383,617.51
FEDERAL AID	
Dingell-Johnson	
Mapping	$ 2,344.70
Watershed Stabilization	83,067.06
Co-ordination	2,095.26
TOTAL FEDERAL AID—Dingell-Johnson	$ 87,507.02
FEDERAL AID	
Clarke-McNary	
Co-operative Forest Fire Fighting	$ 315,548.33
Co-operative Forest Planting Stock	9,200.00
Co-operative Forest Management	26,512.30
TOTAL FEDERAL AID—Clarke-McNary	$ 351,260.63
FORESTRY	
Campsite Fees	$ 365.00
Rent and Rentals	976.03
Employee Rents and Accommodation Services	5,519.65
Fire Suppression	11,835.02
Activity Services	3,554.37
State Roads	1,842.96
Sale of Resources	6,092.52
Sale of Produced or Processed Items	149,203.74
Sale of Equipment	1,246.10
Sale of Supplies	3.36
Sale of Buildings and Structures	2,846.50
Sale of Salvage and Scrap	391.88
Gifts and Donations	85,779.48
4/5 Severance Tax	96,777.51
Withdrawals	462.58
2/10 Mill Tax	2,386,273.85
Lanham Act	821.15
Other Revenue	519.42
TOTAL FORESTRY	$2,754,511.12

CONSERVATION FUND REVENUE—Continued

	Net Revenue 1952–1953
SOUTHERN WISCONSIN FORESTS—Kettle Moraine	
Campsite Fees	$ 1,727.20
Rent and Rentals	5,164.25
Employee Rents and Accommodation Services	20.00
Activity Services	223.17
Convenience Services	43.65
State Roads	5,763.72
Sale of Resources	561.00
Sale of Produced or Processed Items	92.30
Sale of Equipment	5.00
Sale of Buildings and Structures	27.00
Sale of Salvage and Scrap	244.83
Other Revenue	39.41
TOTAL SOUTHERN WISCONSIN FORESTS	$ 13,911.53
RACCOON PROPAGATION	
Raccoon Tags	$ 11,359.10
TOTAL RACCOON PROPAGATION	$ 11,359.10
STATE PARKS	
General Fund Receipt	$ 150,000.00
Campsite Fees	11,478.75
Golf Fees	17,551.00
Rent and Rentals	18,674.25
Employee Rents and Accommodation Services	130.00
Activity Services	234.25
Convenience Services	2,633.95
State Roads	16,104.27
Sale of Resources	272.40
Sale of Produced or Processed Items	253.05
Sale of Buildings and Structures	443.00
Sale of Salvage and Scrap	228.58
Other Revenue	37.03
TOTAL STATE PARKS	$ 218,040.53
GRAND TOTAL CONSERVATION FUND	$7,771,018.52

Schedule A–3

CONSERVATION FUND DISBURSEMENTS

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952–1953 Disbursements*
FISH AND GAME					
Central Adm. Transfers	$ 119,687.53	$	$	$	$ 119,687.53
General Administration					
Administration	33,171.00	3,881.38	3,251.38	88.02	40,391.78
Personnel		774.67	408.66	74.75	1,258.08
	$ 33,171.00	$ 4,656.05	$ 3,660.04	$ 162.77	$ 41,649.86
Less Administrative Disbursements Prorated to Forestry, Deer Yard Acq. and Feeding, Public Hunting and Fishing Grounds, C.W.C.A., Raccoon Prop., and State Parks	21,657.93				21,657.93
	$ 11,513.07	$ 4,656.05	$ 3,660.04	$ 162.77	$ 19,991.93
Finance					
Administration	$ 12,714.00	$ 1,003.66	$ 954.34	$	$ 14,672.00
Cashier	3,477.00	3.86	116.02		3,596.88
Cost Accounting	24,544.38	1,584.76	919.00	267.00	27,315.14
General Accounting	29,176.64	180.32	5,532.31	172.99	35,062.26
License Sales	36,251.83	575.48	55,315.95	295.82	92,439.08
Statistical	3,327.00		85.98		3,412.98
	$ 109,490.85	$ 3,348.08	$ 62,923.60	$ 735.81	$ 176,498.34
Less Administrative Disbursements Prorated to Forestry, Deer Yard Acq. and Feeding, Public Hunting and Fishing Grounds, C.W.C.A., Raccoon Prop., and State Parks	43,710.82				43,710.82
	$ 65,780.03	$ 3,348.08	$ 62,923.60	$ 735.81	$ 132,787.52
Engineering	$ 64,002.53	$ 9,626.24	$ (49,193.76)	$ 827.23	$ 25,262.24
Commission Services					
Commission Services	$ 6,055.43	$ 4,306.76	$ 2,614.14	$	$ 12,976.33
Less Administrative Disbursements Prorated to Forestry, Deer Yard Acq. and Feeding, Public Hunting and Fishing Grounds, C.W.C.A., Raccoon Prop., and State Parks	5,904.23	843.46			6,747.69
	$ 151.20	$ 3,463.30	$ 2,614.14	$	$ 6,228.64

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
Staff Services					
Forestry Advisory Com.	$ 5,997.00	$ 2,644.70	$ 353.12	$ 31.82	$ 9,026.64
Inventory and Property	4,317.00	85.23	18.76	----------	4,420.99
Legal	4,437.00	482.74	4,839.15	----------	9,758.89
Office Rent	----------	----------	24,078.50	----------	24,078.50
Organization and Training	4,617.00	425.94	461.50	148.77	5,653.21
Procurement	6,238.10	317.31	1,013.64	----------	7,569.05
	$ 25,606.10	$ 3,955.92	$ 30,764.67	$ 180.59	$ 60.507.28
Less Administrative Disbursements Prorated to Forestry, Deer Yard Acq. and Feeding, Public Hunting and Fishing Grounds, C.W.C.A., Raccoon Prop., and State Parks	14,586.55	----------	21,210.02	----------	35,796.57
	$ 11,019.55	$ 3,955.92	$ 9,554.65	$ 180.59	$ 24,710.71
FISH MANAGEMENT					
Fish Management Adm.					
General Fish Adm.	$ 28,200.09	$ 4,085.34	$ 6,810.77	$ 306.14	$ 39,402.34
Area I Coordinator	4,617.00	913.55	134.55	----------	5,665.10
Area II Coordinator	4,241.30	1,373.24	204.70	66.00	5,885.24
Area III Coordinator	4,542.00	1,004.70	183.15	.75	5,730.60
Area IV Coordinator	4,542.00	1,064.21	298.46	----------	5,904.67
Area V. Coordinator	4,557.00	973.40	332.76	----------	5,863.16
	$ 50,699.39	$ 9,414.44	$ 7,964.39	$ 372.89	$ 68,451.11
Fishery Operations					
Area I Headquarters	$ 69,937.66	$ 2,511.09	$ 10,990.14	$ 15,385.13	$ 98,824.02
Bayfield	10,966.63	330.76	6,506.86	1,897.42	19,701.67
Brule	7,039.00	239.33	5,704.72	132.92	13,115.97
Hayward	6,707.94	45.85	4,172.10	137.58	11,063.47
Osceola	20,636.00	447.13	14,013.54	1,114.32	36,210.99
St. Croix Falls	14,987.33	61.60	10,711.70	77.53	25,838.16
Area II Headquarters	65,881.23	3,254.72	15,403.85	11,979.32	96,519.12
Crystal Springs	9,576.33	209.36	7,653.39	442.17	17,881.25
Lakewood	6,378.76	174.21	3,906.11	180.36	10,639.44
Langlade	6,776.38	206.51	3,702.65	611.90	11,297.44
Thunder River	6,200.00	151.19	3,088.89	965.73	10,405.81
Area III Headquarters	15,883.52	2,634.35	3,057.50	2,795.02	24,370.39
Area IV Headquarters	15,019.10	2,099.17	5,637.51	17,513.03	40,268.81
Hartman's Creek	12,413.79	443.86	2,677.93	121.64	15,657.22

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
Westfield	$ 8,068.44	$ 177.11	$ 6,640.26	$ 179.39	$ 15,065.20
Wild Rose	22,826.45	168.70	15,446.34	28,378.86	66,820.35
Area V. Headquarters	53,126.20	1,288.37	7,855.42	1,868.20	64,138.19
Delafield	7,308.06	372.89	1,746.83	457.89	9,885.67
Nevin	12,999.74	38.33	13,550.13	27,761.67	54,349.87
Cannery	4,522.29	312.10	(3,800.74)	684.11	1,717.76
	$ 377,254.85	$ 15,166.63	$ 138,665.13	$ 112,684.19	$ 643,770.80
Fishery Biology					
Area I	$ 18,821.37	$ 1,291.10	$ 2,138.90	$ 714.17	$ 22,965.54
Area II	19,747.18	2,461.60	2,253.42	633.34	25,095.54
Area III	11,730.01	1,230.15	1,315.22	1,661.84	15,937.22
Area IV	14,094.99	1,586.79	2,176.47	2,290.65	20,148.90
Area V	20,445.65	1,646.69	3,597.15	265.00	25,954.49
	$ 84,839.20	$ 8,216.33	$ 11,481.16	$ 5,565.00	$ 110,101.69
Great Lakes Commercial Fishing	$ 6,665.34	$ 1,011.65	$ 1,544.12	$	$ 9,221.11
Watershed Management					
Area I	$ 6,775.57	$ 1,388.20	$ 736.17	$ (8.64)	$ 8,891.30
Area II	10,435.19	963.73	2,531.01	135.98	14,065.91
Area III	7,404.99	874.99	2,076.43	407.39	10,763.80
Area IV	6,305.98	680.60	1,236.07	365.62	8,588.27
Area V	12,002.65	985.66	503.53	591.45	14,083.29
	$ 42,924.38	$ 4,893.18	$ 7,083.21	$ 1,491.80	$ 56,392.57
Dingell-Johnson					
Coordination	$ 1,919.35	$ 284.24	$ 78.33	$	$ 2,281.92
Mapping	815.42	213.29	3,257.13	1,111.91	5,397.75
Water Stab.—Area I	15,034.79	1,441.66	516.48	600.43	17,593.36
Water Stab.—Area II	15,689.05	1,700.11	2,435.17	2,119.09	21,943.42
Water Stab.—Area III	10,174.77	1,313.10	1,738.93	5,062.81	18,289.61
Water Stab.—Area IV	12,232.72	1,521.64	2,171.30	2,099.73	18,025.39
Water Stab.—Area V	16,107.48	3,694.20	4,559.60	14,354.92	38,716.20
Largemouth Bass Studies	3,197.44	451.87	499.83		4,149.14
	$ 75,171.02	$ 10,620.11	$ 15,256.77	$ 25,348.89	$ 126,396.79

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
GAME MANAGEMENT					
Game Administration	$ 13,246.07	$ 2,209.52	$ 5,149.84	$ 6.00	$ 20,611.43
General Game Management					
Field Adm.	$ 11,613.85	$ 2,656.12	$ 1,285.39	$ 31.50	$ 15,586.86
Area I	15,521.41	3,747.59	2,267.93	540.92	22,077.85
Area II	14,992.08	4,012.99	3,890.15	676.70	23,571.92
Area III	23,820.86	4,973.35	2,772.08	208.14	31,774.43
Area IV	19,950.79	4,949.45	3,081.26	113.16	28,094.66
Area V	13,102.77	3,379.86	2,158.70	(1,915.79)	16,725.54
Nursery	2,942.00	245.15			3,187.15
	$ 101,943.76	$ 23,964.51	$ 15,455.51	$ (345.37)	$ 141,018.41
Game and Fur Farm	$ 172,571.76	$ 5,958.58	$ 138,824.74	$ 2,442.73	$ 319,797.81
Pittman-Robertson					
Coordination	$ 26,873.97	$ 3,655.81	$ 7,031.45	$ 643.79	$ 38,205.02
Capercaille and Black Grouse	7.21				7.21
Deer Research	8,722.80	1,778.17	1,812.80		12,313.77
Fur Research	16,728.82	2,871.07	1,226.41	261.31	21,087.61
Game Survey and Census Res.	30,551.27	6,714.37	9,321.56	425.79	47,012.99
Grouse Research	19,069.13	5,608.87	1,984.08	66.47	26,728.55
Pathology Research	2,111.93	41.70	90.21	109.48	2,353.32
Pheasant-Quail Research	18,452.28	3,116.57	700.82	60.38	22,330.05
Waterfowl Research	19,532.51	3,123.88	1,912.84		24,569.23
Reg. Dev.—Area I	2,145.54	680.53	64.89	244.50	3,135.46
Reg. Dev.—Area II	2,018.52	463.49	2,198.80		4,680.81
Reg. Dev.—Area III	2,068.47	945.96	1,506.32	1.63	4,522.38
Reg. Dev.—Area IV	7,660.33	1,932.80	5,009.55	527.31	15,129.99
Reg. Dev.—Area V	25,681.45	5,371.36	11,245.92	7.65	42,306.38
Horicon Marsh Maintenance	11,956.94	659.48	6,079.38	563.63	19,259.43
Rock Co. Maintenance	348.68	137.57	1,847.85		2,334.10
	$ 193,929.85	$ 37,101.63	$ 52,032.88	$ 2,911.94	$ 285,976.30

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
Law Enforcement					
Administration	$ 17,976.30	$ 5,256.91	$ 2,092.76	$ 125.95	$ 25,451.92
Area I	81,391.44	38,527.17	2,728.26	1,708.13	124,355.00
Area II	74,305.31	36,875.57	3,200.83	2,699.57	117,081.28
Area III	93,851.00	44,327.13	3,582.05	2,538.82	144,299.00
Area IV	75,257.27	34,209.92	2,735.20	2,459.36	114,661.75
Area V	63,949.50	30,360.95	1,800.38	1,578.71	97,689.54
Lake Superior	12,596.00	2,637.28	2,793.01	103.04	18,129.33
Lake Michigan	12,731.00	3,801.28	1,908.21	891.55	19,332.04
Radio Dispatching	44,250.61		1,627.17		45,877.78
Undersized Fish Purchases			892.97		892.97
	$ 476,308.43	$ 195,996.21	$ 23,360.84	$ 12,105.13	$ 707,770.61
Information and Education Trans. (Also under Forestry)	$ 42,233.14	$	$ 38,095.65	$	$ 80,328.79
Land Purchase				11,943.20	11,943.20
State Employees Ret. Fund			2,795.16		2,795.16
Wis. Retirement Fund			94,419.98		94,419.98
Workmen's Comp. Awards			828.80		828.80
Unemployment Compensation			5,255.06		5,255.06
Rivers Survey	8,304.00	2,087.95	492.06	371.47	11,255.48
Dodge Co. *25%* Sale of Fur			6,138.24		6,138.24
Investment Expense			878.90		878.90
TOTAL FISH AND GAME	$1,918,245.10	$ 341,690.33	$ 595,281.11	$ 176,804.27	$3,032,020.81
DEER YARD ACQUISITION AND FEEDING					
Deer Feeding					
Area I	$ 12,404.96	$ 1,930.14	$ 10,054.47		$ 24,389.57
Area II	6,453.37	2,043.60	1,055.32	765.62	10,317.91
Area III	387.46	40.92	196.23		624.61
	$ 19,245.79	$ 4,014.66	$ 11,306.02	$ 765.62	$ 35,332.09

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
Deer Yard Acquisition and Management					
Area I	$ 2,725.07	$ 550.89	$ 670.69	$ 2,620.85	$ 6,567.50
Area II	1,934.12	910.48	245.08	437.96	3,527.64
Area III				6,764.62	6,764.62
	$ 4,659.19	$ 1,461.37	$ 915.77	$ 9,823.43	$ 16,859.76
P. R.—DEER YARD ACQUISITION AND FEEDING					
Forest Habitat Improvements					
Area I	$ 15,170.53	$ 3,057.83	$ 1,715.54	$ 1,164.59	$ 21,108.49
Area II	21,766.44	4,960.09	3,517.14	20.70	30,264.37
	$ 36,936.97	$ 8,017.92	$ 5,232.68	$ 1,185.29	$ 51,372.86
Deer Food Rev. Adm.			1,993.52		1,993.52
Central Adm. Transfers	9,810.40	298.46			10,108.86
TOTAL DEER YARD ACQ. AND FEEDING	$ 70,652.35	$ 13,792.41	$ 19,447.99	$ 11,774.34	$ 115,667.09
PUBLIC HUNTING AND FISHING GROUNDS (Res. Htg. Lic.)					
Public Hunting and Fishing					
Administration	$	$	$ 2,398.32	$	$ 2,398.32
Area I	7,679.22	1,440.89	1,967.80	1,504.08	12,591.99
Area II	7,541.53	2,345.84	1,862.07	1,592.62	13,342.06
Area III	18,130.99	3,340.21	7,059.53	803.84	29,334.57
Area IV	16,802.23	3,960.26	3,661.93	1,676.15	26,100.57
Area V	21,569.85	6,848.49	5,377.39	1,988.69	35,784.42
	$ 71,723.82	$ 17,935.69	$ 22,327.04	$ 7,565.38	$ 119,551.93
Pittman-Robertson					
Crex Acquisition	$ 371.95	$ 54.08	$	$ 10.55	$ 436.58
Eldorado Acquisition	435.80	243.49	152.97	97.25	929.51
Fish Lake Acquisition	28.85	1.20			30.05
French Creek Acquisition	28.19	8.38			36.57
Jackson Marsh Acquisition	157.22	40.81	19.30	1.00	218.33
Kiezer Lake Acquisition	22.70	4.26			26.96
Little Rice Acquisition	402.78	84.67	58.97		546.42
Navarine Marsh Acquisition	66.75	10.42			77.17
New Munster Acquisition	58.99	22.39			81.38
Pine Island Acquisition	214.55	58.60			273.15

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
Princess Point Acquisition	$ 208.15	$ 74.09			$ 282.24
Rice Bed Creek Acquisition	194.36	41.82		$ 101.20	337.38
Thunder Lake Acquisition	131.20	3.40	$ 7.25		141.85
Tiffany Acquisition	33.58	21.02			54.60
Vernon Acquisition	179.65	37.75	27.92	132.00	377.32
C.W.C.A.—Black River Falls Dev.	5,093.73	279.28	2,140.78	12,179.28	19,693.07
C.W.C.A.—Meadow Valley Dev.	9,742.60	528.66	2,086.52	902.69	13,260.47
Ackley Area Dev.	413.82	76.93	269.41	96.65	856.81
Browntown Dev.	1,380.27	206.54	541.87	6,578.87	8,707.55
Crex Meadows Dev.	2,793.48	294.02	2,035.21	9,477.37	14,600.08
Totogatic Dev.	3,408.86	478.09	1,332.10	9,770.80	14,989.85
Yellowstone Dev.	5,955.93	899.93	991.78	1,194.31	9,041.95
Yellowstone Dam Dev.	180.03	59.60	9,373.17	1,960.77	11,573.57
Wood Co. Dev.	2,159.95	197.41	213.28	3,489.86	6,060.50
C.W.C.A.—Black River Falls Maintenance	2,270.89	106.35	1,838.85	(17.64)	4,198.45
C.W.C.A.—Meadow Valley Maintenance	3,461.04	288.60	791.12	6.40	4,547.16
Crex Meadows Maintenance	6,924.40	626.13	1,480.12	1,097.51	10,128.16
	$ 46,319.72	$ 4,747.92	$ 23,360.62	$ 47,078.87	$ 121,507.13
Central Adm. Trans.	18,899.14				18,899.14
TOTAL PUBLIC HUNTING AND FISHING GROUNDS	$ 136,942.68	$ 22,683.61	$ 45,687.66	$ 54,644.25	$ 259,958.20
C.W.C.A.—Black River Falls					
Black River Falls	$ 5,464.00	$ 294.77	$ 1,409.13	$ 1,628.62	$ 8,796.52
Central Adm. Trans.	1,279.63	38.92			1,318.55
TOTAL C.W.C.A.—BLACK RIVER FALLS	$ 6,743.63	$ 333.69	$ 1,409.13	$ 1,628.62	$ 10,115.07
C.W.C.A.—Meadow Valley	$ 3,023.00	$ 127.51	$ 1,228.75	$ 7.50	$ 4,386.76
Cancelled Drafts			893.80		893.80
Fire Loss	28.57		1,405.97	546.67	1,981.21
Wildlife Research and Education			9,500.00		9,500.00
Transfer to General Fund for Water Pollution Com.			38,356.11		38,356.11
Transfer to General Fund for Water Regulatory Board			6,000.00		6,000.00

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
Bounties—Fox			$ 42,017.00		$ 42,017.00
Recreational Advertising	$ 3,043.29	$ 779.41	$ 89,013.50	$ 440.05	$ 93,276.25
ROUGH FISH CONTROL					
Administration	$	$	$ 11,204.55	$	$ 11,204.55
Area IV Headquarters	6,359.60	421.10	4,060.22	1,140.07	11,980.99
Fond du Lac	31,763.61	3,025.39	7,402.53	2,471.44	44,662.97
Horicon	25,623.89	2,503.29	6,994.44	3,669.23	38,790.85
Oshkosh	17,327.78	754.01	4,135.98	87.67	22,305.44
Area V Headquarters	5,558.70	822.96	4,298.94	1,632.43	12,313.03
McFarland	36,067.72	2,497.56	6,916.53	13,852.45	59,334.26
Newville	32,525.20	3,321.10	7,168.46	2,040.61	45,055.37
TOTAL ROUGH FISH CONTROL	$ 155,226.50	$ 13,345.41	$ 52,181.65	$ 24,893.90	$ 245,647.46
PUBLIC HUNTING AND FISHING GROUNDS (Sportsmen's Licenses)					
Area I	$	$	$ 1,268.67	$	$ 1,268.67
Area II			1,414.31	2,002.00	3,416.31
Area III			7,766.33	448.50	8,214.83
Area IV			13,482.33	2,500.00	15,982.33
Area V			20,382.81		20,382.81
Crex Meadows Acquisition				1,606.96	1,606.96
Eldorado Acquisition				22,542.45	22,542.45
Fish Lake Acquisition				750.89	750.89
French Creek Acquisition				3,073.75	3,073.75
Jackson Marsh Acquisition				2,767.00	2,767.00
Keizer Lake Acquisition				2,854.41	2,854.41
Little Rice Acquisition				3,972.35	3,972.35
Peshtigó Brook Acquisition				3,472.75	3,472.75
Pine Island Acquisition				5,308.40	5,308.40
Princess Point Acquisition				3,004.80	3,004.80
Rice Bed Creek Acquisition				34.60	34.60
Thunder Lake Acquisition				1,502.10	1,502.10
Tiffany Acquisition				5,281.10	5,281.10
Vernon Acquisition				2,437.50	2,437.50
TOTAL PUBLIC HUNTING AND FISHING GROUNDS (Sportsmen's Licenses)			$ 44,314.45	$ 63,559.56	$ 107,874.01

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
FORESTRY					
Central Adm. Trans.	$ 66,165.05	$	$ 21,210.02	$	$ 87,375.07
Forestry Administration	$ 5,235.00	$ 569.93	$ 303.25	$	$ 6,108.18
Clerical					
Clerical	$ 200,726.90	$ 390.36	$ 46,381.51	$ 1,850.25	$ 249,349.02
Less Administrative Disbursements Prorated to Fish and Game, Deer Yard Acq. and Feeding, Public Hunting and Fishing Grounds, C.W.C.A., Raccoon Prop., and State Parks	(146,617.22)				(146,617.22)
	$ 54,109.68	$ 390.36	$ 46,381.51	$ 1,850.25	$ 102,731.80
Forest Protection					
Administration	$ 12,841.00	$ 2,151.16	$ 180.00	$	$ 15,172.16
Tomahawk Warehouse			(3,178.35)	11,985.15	8,806.80
Tomahawk Headquarters	81,696.00	4,533.90	42,388.19	38,385.87	167,003.96
Central Area Headquarters	4,737.00	885.11	826.74	123.85	6,572.70
District 9	69,908.62	844.64	9,461.59	1,840.07	82,054.92
District 10	70,037.16	990.25	7,761.74	2,915.70	81,704.85
Northern Area Headquarters	4,977.00	1,414.04	24.59	160.47	6,576.10
District 3	68,786.84	1,797.58	8,676.28	893.95	80,154.65
District 6	60,442.15	1,556.91	9,005.15	932.30	71,936.51
District 8	77,518.16	1,007.87	6,733.52	1,061.71	86,321.26
Northeast Area Headquarters	4,797.00	1,094.99	173.63	5.87	6,071.49
District 4	88,129.35	1,903.85	11,513.34	2,537.06	104,083.60
District 5	77,530.94	1,752.11	8,038.67	991.35	88,313.07
Northwest Area Headquarters	4,737.00	1,514.76	(241.95)	(73.00)	5,936.81
District 1	82,202.30	1,306.14	7,970.06	861.31	92,339.81
District 2	72,001.96	850.78	9,137.52	1,769.52	83,759.78
District 7	88,795.60	2,078.55	8,091.46	1,606.96	100,572.57
	$ 869,138.08	$ 25,682.64	$ 126,562.18	$ 65,998.14	$1,087,381.04
Fire Suppression					
Reportable Fires	$ 19,866.30	$ 757.69	$ 2,254.10		$ 22,878.09
Nonreportable Fires	36,132.67	866.88	1,346.59		38,346.14
	$ 55,998.97	$ 1,624.57	$ 3,600.69		$ 61,224.23

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
Cooperative Forestry					
Administration	$ 15,624.74	$ 4,693.96	$ 1,493.98	$ 34.66	$ 21,847.34
County Forestry	69,345.50	15,836.98	790.07	672.25	86,644.80
Farm Forestry	60,878.15	15,537.66	1,881.91	682.67	78,980.39
Insect Control	8,765.56	2,677.89	1,557.22	425.76	13,426.43
State Forest Inventory	76,191.24	15,517.29	3,738.18	321.59	96,768.30
	$ 230,805.19	$ 55,263.78	$ 9,461.36	$ 2,136.93	$ 297,667.26
Nurseries					
Administration	$ 8,850.00	$ 870.08	$ 480.63	$	$ 10,200.71
Gordon	9,672.32	207.73	6,496.95	360.69	16,737.69
Griffith	85,362.49	53.52	23,106.40	3,965.38	112,487.79
Hayward	38,568.89	326.80	4,615.23	487.32	43,998.24
Hugo Sauer	16,965.13	123.00	6,023.40	3,409.29	26,520.82
Trout Lake	27,800.91	103.70	3,118.25	16.18	31,039.04
	$ 187,219.74	$ 1,684.83	$ 43,840.86	$ 8,238.86	$ 240,984.29
State Forests					
Administration	$ 4,707.00	$ 784.86	$ 483.96	$ 151.25	$ 6,127.07
American Legion	8,460.70	565.74	4,145.13	179.17	13,350.74
Brule River	3,685.75	131.56	1,855.81	54.52	5,727.64
Council Grounds	2,161.52	1.30	427.59	10.39	2,600.80
Flambeau	31,466.62	603.92	2,413.63	2,136.19	36,620.36
Northern Highland	63,821.57	868.12	14,856.04	3,327.46	82,873.19
Trout Lake Adm.	8,994.00	1,492.58	127.30	44.75	10,658.63
	$ 123,297.16	$ 4,448.08	$ 24,309.46	$ 5,903.73	$ 157,958.43
Forestry Research					
Forest Insect Research	$ 11,556.04	$ 2,293.45	$ 3,043.39	$ 3,921.26	$ 20,814.14
Tree Disease Research	18,326.23	1,811.87	1,351.44	429.42	21,918.96
Blister Rust Control	7,348.58	3,114.35			10,462.93
Forest Soils Research	16,293.88	2,275.25	1,296.20	1,848.12	21,713.45
Forest Genetics	10,278.69	736.12	2,976.96	2,825.86	16,817.63
	$ 63,803.42	$ 10,231.04	$ 8,667.99	$ 9,024.66	$ 91,727.11

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
Information and Education Administration (Also under Fish and Game)					
Administration	$ 6,897.00	$ 970.54	$ 348.53		$ 8,216.07
Central Adm. Trans.	(4,420.25)				(4,420.25)
	$ 2,476.75	$ 970.54	$ 348.53		$ 3,795.82
Information					
Publications	$ 5,677.00	$	$ 51,984.45		$ 57,661.45
Newspaper Service	5,337.00	322.67	1,317.07		6,976.74
Special Services	5,457.00	249.24	465.32		6,171.56
Central Adm. Trans.	$ 16,471.00	$ 571.91	$ 53,766.84		$ 70,809.75
			(38,095.65)		(38,095.65)
	$ 16,471.00	$ 571.91	$ 15,671.19		$ 32,714.10
Education					
Schools	$ 5,877.00	$ 948.55	$ 756.33	$	$ 7,581.88
Clubs	4,437.00	1,158.73	1,281.65	1,165.53	8,042.91
Visual Aids	15,573.00	1,108.35	5,471.17	595.21	22,747.73
Exhibits	12,691.40	5,242.47	3,554.82	790.80	22,279.49
Conservation Congress		3,278.03	1,712.49	191.59	5,182.11
Central Adm. Trans.	$ 38,578.40	$ 11,736.13	$ 12,776.46	$ 2,743.13	$ 65,834.12
	(37,812.89)				(37,812.89)
	$ 765.51	$ 11,736.13	$ 12,776.46	$ 2,743.13	$ 28,021.23
Land Purchase	$	$	$	$ 4,650.00	$ 4,650.00
Wis. Retirement Fund			99,803.02		99,803.02
Workmen's Comp. Awards			2,339.39		2,339.39
Unemployment Comp.			14,651.87		14,651.87
Timber Harvest			15.60		15.60
TOTAL FORESTRY	$1,675,485.55	$ 113,173.81	$ 429,943.38	$ 100,545.70	$2,319,148.44

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
SOUTHERN WISCONSIN FORESTS					
Administration	$ 6,217.00	$ 1,931.17	$ 9,349.45	$ (134.64)	$ 17,362.98
Southern Purchase Unit	26,235.37	158.90	2,887.31	3,373.46	32,655.04
Northern Purchase Unit	42,768.76	263.69	8,111.42	20,113.21	71,257.08
Point Beach	17,865.54	146.32	3,521.63	2,201.39	23,734.88
Big Foot Beach	10,308.05	125.75	1,883.13	1,755.99	14,072.92
TOTAL SOUTHERN WISCONSIN FORESTS	$ 103,394.72	$ 2,625.83	$ 25,752.94	$ 27,309.41	$ 159,082.90
KETTLE MORAINE LAND				$ 95,683.15	$ 95,683.15
COUNTY FOREST AID			$ 180,000.00		$ 180,000.00
BEAR AND DEER DAMAGE					
Bear Damage			$ 3,420.44		$ 3,420.44
Deer Damage			8,084.57		8,084.57
Deerproof Fence			13.09		13.09
TOTAL BEAR AND DEER DAMAGE			$ 11,518.10		$ 11,518.10
RACCOON PROPAGATION					
Raccoon Propagation	$ 3,717.00	$	$ 3,095.46		$ 6,812.46
Central Adm. Trans	426.54	12.98			439.52
TOTAL RACCOON PROPAGATION	$ 4,143.54	$ 12.98	$ 3,095.46		$ 7,251.98
CONSERVATION WARDEN'S PENSION			$ 37,000.00		$ 37,000.00
STATE PARKS					
Administration	$ 13,636.00	$ 1,494.06	$ 20,112.67	$ 12.93	$ 35,255.66
Aztalan	100.00		254.80	423.98	778.78
Brunet Island	9,573.37	28.20	1,075.90	911.44	11,588.91
Castle Mound	2,057.00	43.82	132.81	55.09	2,288.72
Copper Falls	10,336.64	19.04	1,810.83	133.02	12,299.53
Cox Hollow			527.57		527.57
Cushing Memorial	860.00	14.86	134.45		1,009.31
Devils Lake	45,531.32	559.78	7,763.57	1,112.50	54,967.17

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
First Capitol	$ 1,807.88		$ 119.20		$ 1,927.08
Interstate	18,414.73	$ 446.76	2,179.05	$ 280.08	21,320.62
Lost Dauphin	684.50		76.34	36.33	797.17
Lucius Woods	9,058.62	111.93	1,362.24	2,206.88	12,739.67
Merrick	10,060.00	393.27	2,285.81	945.59	13,684.67
Mill Bluff	1,666.52	39.84	143.22	335.42	2,185.00
Nelson Dewey	7,834.38	10.25	1,398.62	4,790.15	14,033.40
New Glarus	1,357.00	14.81	16.38	37.66	1,425.85
Ojibwa	1,722.42	32.58	217.39	667.64	2,640.03
Pattison	11,719.20	99.43	4,056.83	258.12	16,133.58
Peninsula	37,763.12	996.19	7,972.94	6,731.34	53,463.59
Perrot	11,471.00	48.25	1,698.24	773.25	13,990.74
Potawatomi	9,284.50		1,086.47	990.80	11,361.77
Rib Mountain	13,393.93	310.65	4,561.62	240.81	18,507.01
Roche a Cri	1,727.00	6.60	78.43	77.16	1,889.19
Rocky Arbor	2,509.18	3.00	119.63	76.28	2,708.09
Terry Andrae	7,972.94	62.18	1,423.86	39.15	9,498.13
Tower Hill	6,102.00	21.60	441.38	76.28	6,641.26
Wildcat Mountain	11,373.00	191.71	2,084.76	2,542.35	16,191.82
Wyalusing	17,194.61	188.54	2,033.21	1,004.76	20,421.12
Golf Course—Peninsula Park	14,882.50	235.72	1,945.75	1,605.37	18,669.34
Coop. State Historical Society	3,816.00	548.29			4,364.29
Coop. Aztalan Exploration	760.95			233.76	994.71
Land Purchase				6,496.78	6,496.78
	284,670.31	5,921.36	67,113.97	33,094.92	390,800.56
Central Adm. Trans.	16,208.46	493.10			16,701.56
TOTAL STATE PARKS	$ 300,878.77	$ 6,414.46	$ 67,113.97	$ 33,094.92	$ 407,502.12
GRAND TOTAL CONSERVATION FUND	$4,377,807.70	$ 514,979.45	$1,701,160.97	$ 590,932.34	$7,184,880.46

Exhibit B

REFORESTATION FUND

Beginning and ending balances and transactions of the Reforestation Fund for the fiscal year 1952–1953

	Balance Forwarded From 1951-52	*Plus Revenue 1952-53*	*Minus Disbursements 1952-53*	*Balance Forwarded 1953-54*
REFORESTATION	$129,854.38	$164,941.49	$ 96,590.45	$198,205.42
TOTAL REFORESTATION FUND	$129,854.38	$164,941.49	$ 96,590.45	$198,205.42

Schedule B–1

REFORESTATION FUND REVENUE

	Net Revenue 1952-1953
REFORESTATION	
Rent and Rentals	$ 1,867.00
Sale of Timber	96,454.06
Federal Aid—Pittman–Robertson	61,619.42
Interest on Investments	4,894.97
Interest on Deposits	106.04
TOTAL REFORESTATION	$164,941.49

Schedule B–2

REFORESTATION FUND DISBURSEMENTS

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1952-1953 Disbursements*
REFORESTATION					
Land Purchase	$	$	$	$ 15,803.70	$ 15,803.70
State Aid			24,113.52		24,113.52
Boscobel Nursery	26,157.42	1,133.85	9,688.00	19,670.05	56,649.32
Investment Expense			23.91		23.91
TOTAL REFORESTATION	$ 26,157.42	$ 1,133.85	$ 33,825.43	$ 35,473.75	$ 96,590.45

Exhibit C

GENERAL FUND DISBURSEMENTS

	Appropriation	*Minus Disbursements 1952-1953*	*Unexpended Balance*
LAPSING BALANCES			
Forest Crop Law			
Adm.—Conservation Dept.	$ 5,020.55	$ 5,020.55	—0—
—Dept. of Taxation	1,187.58	1,187.58	—0—
Forest Crop Withdrawals	1,875.62*	1,875.62	—0—
Forest Crop Severance Tax	3,232.19*	3,232.19	—0—
Bounties			
½ Fox Bounties	42,017.00*	42,017.00	—0—
Bounties on Other Animals	55,080.00*	55,080.00	—0—
Advertising Wisconsin	102,871.00	99,673.20	3,197.80
State Parks	150,000.00	150,000.00**	—0—

*Sum Sufficient.

**Listed disbursement is payment to Conservation Fund. Actual disbursement is included with Conservation Funds disbursement for the same purpose.

NON-APPROPRIATED REVENUE

FOREST CROP	
Forest Crop Withdrawals	$ 184.45
Forest Crop Severance Tax	25,891.90
TOTAL FOREST CROP	$26,076.35

FINANCIAL REPORT 1953–1954

CONSERVATION FUND

Exhibit A

BEGINNING AND ENDING BALANCES AND TRANSACTIONS OF THE OVERALL CONSERVATION FUND FOR THE FISCAL YEAR 1953–1954

Appropriation	*Balance Forwarded From 1952-1953*	*Plus Revenue 1953-1954*	*Minus Disbursements 1953-1954*	*Plus Transfers 1953-1954*	*Minus Transfers 1953-1954*	*Balance Forwarded To 1954-1955*
Fish and Game	$1,131,819.76	$4,314,032.87		(a) $ 7,703.52	(e) $ 9,500.00	
				(b) 28,481.90	(f) 39,695.32	
				(c) 12,883.61	(g) 6,000.00	
				(d) 526,772.95	(h) 7,255.65	
					(i) 4,121,089.23	
					(j) 160,100.96	
					(k) 28,740.25	
					(l) 203,100.00	
					(m) 40,000.00	
					(n) 458,707.00	
					(o) 2,700.00	$ 944,806.20
Wildlife Research and Education	—0—		$ 9,500.00	(e) 9,500.00		—0—
Water Pollution Costs	—0—		39,695.32	(f) 39,695.32		—0—
Water Regulatory Costs	—0—		6,000.00	(g) 6,000.00		—0—
Trempealeau County Judgment	—0—		7,255.65	(h) 7,255.65		—0—
Fish and Game Operating	—0—		3,823,742.10	(i) 4,121,089.23		(v) 297,347.13
Retirement—Contributions—Fish and Game	—0—		160,100.96	(j) 160,100.96		—0—
Cancelled Drafts	2,664.70	2,527.51	1,801.50			3,390.71
Fire Loss	3,104.09	3,470.12	2,704.51			3,869.70
Bounties—Fox	—0—		28,740.25	(k) 28,740.25		—0—
Recreational Advertising	7,703.52		184,931.71	(l) 203,100.00	(a) 7,703.52	(v) 18,168.29
Imprest Fund Advance	5,000.00					5,000.00
Federal Aid—Clarke-McNary	—0—	319,336.38			(p) 319,336.38	—0—
Federal Aid—Pittman-Robertson		571,967.54			(d) 45,194.59	
					(d) 526,772.95	—0—
Public Hunting and Fishing (Sportsmen's Lic.)	69,504.91	95,784.35	86,398.43	(d) 45,194.59		
Forestry	1,352,022.92	2,929,194.23		(p) 319,336.38	(q) 205,008.57	124,085.42
					(r) 102,504.29	
					(s) 215,343.35	
					(t) 2,668,646.81	
Southern Wisconsin Forests	60,728.26		160,058.41	(q) 205,008.57	(a) 112,574.25	1,296,476.26
Kettle Moraine Land	1,732.65		67,382.06	(r) 102,504.29		105,678.42
County Forest Aid	—0—		215,343.35	(s) 215,343.35		36,854.88
Forestry—Operating	—0—		2,439,503.81	(t) 2,668,646.81		—0—
Retirement Contributions Forestry	—0—		112,574.25	(u) 112,574.25		(w) 229,143.00
Forestry Reserve	300,000.00					—0—
Bear and Deer Damage	28,481.90		17,415.86	(m) 40,000.00	(b) 28,481.90	300,000.00
State Parks	12,883.61	92,813.65	419,367.97	(n) 458,707.00	(c) 12,883.61	(v) 22,584.14
Chapter 668—Guy LaFond Award	—0—		2,700.00	(o) 2,700.00		(v) 132,152.68
						—0—
TOTAL CONSERVATION FUND	$2,975,646.32	$8,329,126.65	$7,785,216.14	$9,321,338.63	$9,321,338.63	$3,519,556.83

See following page for footnotes

CONSERVATION FUND TRANSFERS

(a) $7,703.52 is prior year Recreational Advertising Appropriation Balance which reverts to Fish and Game Appropriation.
(b) $28,481.90 is prior year Bear and Deer Damage Appropriation Balance which reverts to Fish and Game Appropriation.
(c) $12,883.61 is prior year State Parks Appropriation Balance which reverts to Fish and Game Appropriation.
(d) $526,772.95 transferred to Fish and Game Appropriation and $45,194.59 transferred to Public Hunting and Fish Grounds Appropriation from Federal Aid—Pittman–Robertson Appropriation.
(e) $9,500.00 transferred from Fish and Game Appropriation to University of Wisconsin Wildlife Education and Research in accordance with statutes.
(f) $39,695.32 transferred from Fish and Game Appropriation to Water Pollution Committee in accordance with statutes.
(g) $6,000.00 transferred from Fish and Game Appropriation to Water Regulatory Board in accordance with statutes.
(h) $7,255.65 transferred from Fish and Game Appropriation to Trempealeau County Judgment in accordance with statutes.
(i) $4,121,089.23 transferred from Fish and Game Appropriation to Fish and Game Operating Appropriation.
(j) $160,100.96 transferred from Fish and Game Appropriation to Retirement—Fish and Game Appropriation.
(k) $28,740.25 transferred from Fish and Game Appropriation to cover payment of ½ of the Fox Bounties.
(l) $203,100.00 transferred from Fish and Game Appropriation to Recreational Advertising Appropriation.
(m) $40,000.00 transferred from Fish and Game Appropriation to Bear and Deer Damage Appropriation in accordance with statutes
(n) $458,707.00 transferred from Fish and Game Appropriation to State Parks Appropriation.
(o) $2,700.00 transferred from Fish and Game Appropriation in payment of Guy LaFond Award.
(p) $319,336.38 transferred from Federal Aid—Clarke–McNary Appropriation to Forestry Appropriation.
(q) $205,008.57 transferred from Forestry Appropriation to Southern Wisconsin Forests Appropriation.
(r) $102,504.29 transferred from Forestry Appropriation to Kettle Moraine Land Appropriation.
(s) $215,343.35 transferred from Forestry Appropriation to County Forest Aid Appropriation.
(t) $2,668,646.81 transferred from Forestry Appropriation to Forestry Operating Appropriation.
(u) $112,574.25 transferred from Forestry Appropriation to Retirement—Forestry Appropriation.
(v) Balances revert to Fish and Game Appropriation.
(w) Balance reverts to Forestry Appropriation.

Schedule A–2

CONSERVATION FUND REVENUE

	Net Revenue 1953–1954
FISH AND GAME	
Fishing Licenses	
Fish Shipping Coupons	$ 1,249.40
Nonresident Fishing Licenses	1,136,334.45
Nonresident Combination 10 Day Fishing Licenses	170,360.75
Resident Fishing Licenses	640,911.10
Great Lakes Commercial Fishing Licenses	11,568.50
Bait Dealers Licenses	3,960.00
Mississippi River Commercial Fishing Licenses	5,231.00
Private Fish Hatchery Licenses	1,825.00
Slat Net Licenses and Tags	1,570.50
Wholesale Fish Dealer Licenses	5,175.00
Trammel Net Licenses	380.00
Bank Pole Fishing Licenses	1,589.85
Cisco Licenses	579.10
Set Line Licenses and Tags	5,045.60
Sturgeon Tags	8,032.00
Bait Net Licenses	7.00
Game Licenses	
Resident Hunting Licenses—Small Game	677,746.20
Resident Hunting Licenses—Big Game	462,593.20
Nonresident Hunting Licenses—Small Game	53,144.75
Nonresident Hunting Licenses—Big Game	55,746.40
Nonresident Hunting Licenses—Archers	11,660.50
Nonresident Shooting Preserve Hunting Licenses	1,825.00
Shooting Preserve Licenses and Tags	934.55
Settlers' Hunting Licenses—Small Game	591.90
Settlers' Hunting Licenses—Big Game	602.50
Trapping Licenses	15,754.50
Trap Tags	53,570.03
Beaver Trapping Licenses and Tags	11,964.00
Deer Farm Licenses	1,750.00
Dead and Live Deer Tags	473.15
Resident Fur Dealer Licenses	4,730.00
Game Farm Licenses and Tags	2,047.90
Muskrat Farm Licenses and Tags	7,330.56
Beaver Farm Licenses and Tags	196.87
Otter, Raccoon, Mink and Skunk Farm Licenses and Tags	461.22
Raccoon Tags	11,775.66
Voluntary Sportsmen's Licenses	160,904.50
Other Licenses	
Christmas Tree Dealer Licenses and Tags	7,084.82
Duplicate Licenses	1,504.25
Guide Licenses	940.00
Scientific Certificates	56.00
Taxidermist Licenses	490.00
Miscellaneous	
Warden and Witness Fees	4,166.02
Rent and Rentals	17,849.40
Employee Rents and Accommodation Services	14,966.45
Activity Services	1,577.17
Supervision and Inspection Services	745.44
Convenience Services	.55
Other Services	23.15
Sale of Resources	36,711.25
Sale of Confiscations and Seizures	22,188.16
Sale of Produced or Processed Items	6,256.02
Sale of Equipment	7,805.51
Sale of Supplies	4,774.90
Sale of Buildings and Structures	2,234.50
Sale of Signs	497.62
Sale of Salvage and Scrap	669.15
Sale of Rough Fish	160,778.57
Commission on Sale of Rough Fish	6,184.57
Sale of Other Items	6.00
Gifts and Donations	131.25

CONSERVATION FUND REVENUE—Continued

	Net Revenue 1953–1954
Occupational Tax—Mink	$ 5,337.71
Other Revenue	1,123.58
Civil Action Damages	2,125.00
Investment Income	49,959.46
Highway Commission Contribution—Recreational Advertising	100,000.00
General Fund Contribution—Recreational Advertising	103,100.00
General Fund Contribution—State Parks	150,000.00
C.W.C.A. Black River Falls Receipts	
Activity Services	32.00
Sale of Resources	52,801.40
Sale of Produced or Processed Items	122.00
Sale of Buildings and Structures	515.00
Sale of Salvage and Scrap	146.92
C.W.C.A. Meadow Valley Receipts	
Rent and Rentals	80.00
Sale of Resources	21,426.41
TOTAL FISH AND GAME	$4,314,032.87
CANCELLED DRAFTS	
Cancelled Drafts	$ 2,496.26
Other Revenue	31.25
TOTAL CANCELLED DRAFTS	$ 2,527.51
FIRE LOSS	
Fire Loss	$ 3,470.12
TOTAL FIRE LOSS	$ 3,470.12
FEDERAL AID	
Clarke-McNary	
Cooperative Fire Fighting	$ 286,712.38
Cooperative Forest Planting Stock	10,282.00
Cooperative Farm Forestry	22,342.00
TOTAL FEDERAL AID—CLARKE-McNARY	$ 319,336.38
FEDERAL AID	
Pittman-Robertson	
Coordination	$ 23,240.17
Pheasant-Quail Research	15,365.97
Deer Research	6,340.48
Fur Research	11,926.38
Game Survey and Census Research	35,158.18
Waterfowl Research	13,520.68
Grouse Research	19,268.20
Pathology Research	2,988.80
Capercaillie and Black Grouse	5.41
Regional Development	49,736.74
Horicon Marsh Maintenance	14,321.97
Ackley Area Development	1,783.87
Crex Meadows Development	13,614.85
Rock County Maintenance	373.31
Rock Prairie Refuge Area	2,906.61
C.W.C.A.—Black River Falls Development	10,505.37
C.W.C.A.—Meadow Valley Development	3,373.06
Yellowstone Development	9,725.34
Yellowstone Dam Development	42,147.49
Totogatic Development	3,243.28
C.W.C.A.—Black River Falls Maintenance	3,576.25
C.W.C.A.—Meadow Valley Maintenance	3,417.98
Crex Meadows Maintenance	8,071.54
Land Acquisition	49,231.62
Forest Habitat Improvement	38,130.66
Browntown Development	813.33
Little Rice Development	852.99
Wood County Development	12,123.09
Mazomanie Development	993.62
Prairie Chicken Development	312.09

CONSERVATION FUND REVENUE—Continued

	Net Revenue 1953–1954
Dingell–Johnson	
Coordination	$ 4,005.83
Lake Mapping	2,240.55
Watershed Stabilization	94,096.42
Yellowstone Dam	63,221.25
Large Mouth Bass Studies	11,334.16
TOTAL FEDERAL AID—PITTMAN–ROBERTSON and DINGELL–JOHNSON	$ 571,967.54
PUBLIC HUNTING AND FISHING GROUNDS—Sportsmen's Licenses	
Sportsmen's Licenses	$ 95,784.35
TOTAL PUBLIC HUNTING AND FISHING GROUNDS—SPORTSMEN'S LICENSES	$ 95,784.35
FORESTRY	
Campsite Fees	$ 4,383.05
Rent and Rentals	11,517.13
Employee Rents and Accommodation Services	19,933.68
Fire Suppression	14,844.79
Activity Services	1,112.71
Supervision and Inspection Services	647.26
Convenience Services	93.13
State Roads	7,238.10
Other Services	520.44
Sale of Resources	9,562.46
Sale of Produced or Processed Items	169,430.61
Sale of Equipment	317.15
Sale of Supplies	17.80
Sale of Buildings and Structures	691.00
Sale of Salvage and Scrap	531.25
Gifts and Donations	18,225.48
4/5 Severance Tax	111,250.09
Withdrawals	934.87
2/10 Mill Tax	2,556,612.40
Lanham Act	843.24
Other Revenue	487.59
TOTAL FORESTRY	$2,929,194.23
State Parks	
Campsite Fees	$ 29,727.15
Golf Fees	18,484.50
Rent and Rentals	29,214.76
Employee Rents and Accommodation Services	2,923.87
Activity Services	148.25
Convenience Services	2,510.70
State Roads	8,061.54
Other Services	83.20
Sale of Resources	294.00
Sale of Produced or Processed Items	165.00
Sale of Equipment	20.00
Sale of Buildings and Structures	361.00
Sale of Salvage and Scrap	464.63
Other Revenue	355.05
TOTAL STATE PARKS	$ 92,813.65
GRAND TOTAL CONSERVATION FUND	$8,329,126.65

CONSERVATION FUND DISBURSEMENTS

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953-1954 Disbursements*
WILDLIFE RESEARCH AND EDUCATION			$ 9,500.00		$ 9,500.00
TRANSFER TO GENERAL FUND FOR WATER POLLUTION			$ 39,695.32		$ 39,695.32
TRANSFER TO GENERAL FUND FOR WATER REGULATORY BOARD			$ 6,000.00		$ 6,000.00
TRANSFER TO GENERAL FUND JUDGMENT—TREMPEALEAU COUNTY			$ 7,255.65		$ 7,255.65
FISH AND GAME					
General Administration Transfers Between Appropriations	$ (14,786.10)	$ (1,365.21)	$ (1,613.86)	$ (223.37)	$ (17,988.54)
Finance Transfers Between Appropriations	(36,857.35)	(1,253.81)	(4,189.25)	(638.28)	(42,938.69)
Commission Services Transfers Between Appropriations	(2,674.44)	(1,401.31)	(277.41)		(4,353.16)
Staff Services Transfers Between Appropriations	(15,128.60)	(3,170.77)	(14,635.97)	(2.37)	(32,937.71)
Rivers Survey Transfers Between Appropriations	(4,477.04)	(939.81)	(224.88)	(277.22)	(5,918.95)
Clerical Transfers Between Appropriations	111,590.10	333.95	23,021.66	1,702.27	136,647.98
Information and Education Adm. Transfers Between Appropriations	3,720.60	677.05	137.79		4,535.44
Information Transfers Between Appropriations	7,144.69	243.20	28,544.08		35,931.97
Education Transfers Between Appropriations	21,483.62	8,288.70	10,620.54	1,524.75	41,917.61
General Administration					
Administration	32,143.70	2,991.40	2,921.81	485.59	38,542.50
Personnel		259.10	920.71		1,179.81
	$ 32,143.70	$ 3,250.50	$ 3,842.52	$ 485.59	$ 39,722.31
Finance					
Administration	$ 13,530.00	$ 1,075.21	$ 1,544.46	$	$ 16,149.67
Cashier	3,781.05	37.62	154.52	128.78	4,101.97
Cost Accounting	27,945.64	1,867.26	1,254.11	1,250.89	32,317.90
General Accounting	31,252.98	5.18	7,021.32	7.91	38,287.39
License Sales	35,681.51	395.50	77,704.57	37.10	113,818.68
Statistical	3,615.00				3,615.00
	$ 115,806.18	$ 3,380.77	$ 87,678.98	$ 1,424.68	$ 208,290.61
Engineering	58,891.27	7,888.04	(42,929.32)	1,384.73	25,234.72
Commission Services	5,814.00	3,336.45	660.51		9,810.96

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953-1954 Disbursements*
Staff Services					
Forestry Advisory Committee	$ 6,315.00	$ 2,609.82	$ 453.40	$	$ 9,378.22
Inventory and Property	4,515.00	180.23	91.47		4,786.70
Legal	4,655.00	329.90	5,244.57		10,229.47
Office Rent			27,779.84		27,779.84
Organization and Training	5,115.00	261.97	231.87		5,608.84
Procurement	4,875.00	563.50	420.27	5.15	5,863.92
	$ 25,475.00	$ 3,945.42	$ 34,221.42	$ 5.15	$ 63,646.99
Fish Management Administration					
General Fisheries Administration	$ 31,913.49	$ 4,679.13	$ 3,107.41	$ 245.95	$ 39,945.98
Area I Coordinator	5,295.00	892.88	118.91		6,306.79
Area II Coordinator	5,295.00	1,074.61	357.56		6,727.17
Area III Coordinator	4,938.05	882.52	267.23	463.00	6,550.80
Area IV Coordinator	4,875.00	1,140.56	401.12		6,416.68
Area V. Coordinator	5,295.00	874.69	247.41		6,417.10
	$ 57,611.54	$ 9,544.39	$ 4,499.64	$ 708.95	$ 72,364.52
Fishery Operations					
Area I Headquarters	$ 68,676.27	$ 2,504.13	$ 14,539.11	$ 5,440.63	$ 91,160.14
Bayfield	11,961.50	85.82	7,493.27	2,753.08	22,293.67
Brule	7,761.50	155.58	4,632.05	322.98	12,872.11
Hayward	7,860.95	40.25	3,852.93	38.42	11,792.55
Osceola	22,485.72	406.70	11,893.50	1,416.34	36,202.26
St. Croix Falls	15,275.50	104.13	10,775.26	1,433.06	27,587.95
Area II Headquarters	72,089.86	4,139.11	7,032.57	4,707.35	87,968.89
Crystal Springs	9,917.27	179.31	6,234.89	84.03	16,415.50
Lakewood	7,139.50	171.60	3,972.59		11,283.69
Langlade	7,401.50	155.43	4,025.41	161.51	11,743.85
Thunder River	7,036.00	145.19	3,344.98	128.63	10,654.80
Area III Headquarters	17,661.18	2,152.83	4,485.62	3,304.49	27,604.12
Area IV Headquarters	42,009.09	3,362.15	14,894.30	14,855.63	75,121.17
Fond du Lac	36,696.26	3,184.29	7,319.11	9,154.24	56,353.90
Hartmen's Creek	9,742.85	331.33	1,268.83	115.45	11,458.46
Horicon	26,375.18	1,976.87	6,095.90	406.05	34,854.00
Westfield	8,007.81	359.73	5,473.15	471.60	14,312.29
Wild Rose	22,647.02	209.69	15,203.28	1,741.81	39,801.80
Area V Headquarters	68,710.85	2,331.55	15,045.97	1,634.44	87,722.81
Cannery			181.71		181.71
McFarland	37,313.35	2,089.50	6,086.12	2,775.73	48,264.70
Nevin	16,542.56	60.64	12,589.35	3,653.53	32,846.08
Newville	33,631.89	1,896.47	5,886.09	3,499.70	44,914.15
	$ 556,943.61	$ 26,042.30	$ 172,325.99	$ 58,098.70	$ 813,410.60

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953–1954 Disbursements*
Fishery Biology					
Area I Biology	$ 21,014.65	$ 1,587.13	$ 2,452.95	$ 729.44	$ 25,784.17
Area II Biology	18,607.03	2,424.51	3,295.85	758.05	25,085.44
Area III Biology	13,738.29	1,820.11	1,072.04	1,449.25	18,079.69
Area IV Biology	17,721.47	1,560.15	3,029.38	976.31	23,287.31
Area V Biology	18,170.06	1,787.47	2,024.55	224.59	22,206.67
	$ 89,251.50	$ 9,179.37	$ 11,874.77	$ 4,137.64	$ 114,443.28
Great Lakes Commercial Fishing	$ 6,978.17	$ 1,210.24	$ 888.24		$ 9,076.65
Watershed Management					
Area I	$ 4,667.28	$ 623.95	$ 1,178.63	$ 94.54	$ 6,564.40
Area II	3,705.25	293.64	2,610.68	43.11	6,652.68
Area III	5,391.39	721.88	1,670.06	16.15	7,799.48
Area IV	2,582.05	152.61	308.66		3,043.32
Area V	412.55	459.63	892.53		1,764.71
	$ 16,758.52	$ 2,251.71	$ 6,660.56	$ 153.80	$ 25,824.59
Dingell–Johnson—Fish and Game					
Coordination	$	$	$ 3,824.78	$	$ 3,824.78
Evaluation	5,082.25	292.09	186.54	2,646.92	8,207.80
Land Acquisition	14.56	.85		4,262.50	4,277.91
Largemouth Bass	14,157.41	1,058.33	2,668.44	3,908.41	21,792.59
Mapping	2,738.62	871.82	3,653.50	1,370.60	8,634.54
Watershed Stabilization Area I	19,187.58	2,295.70	1,902.40	2,285.04	25,670.72
Watershed Stabilization Area II	25,674.83	1,902.36	2,265.08	27.06	29,869.33
Watershed Stabilization Area III	13,307.84	1,326.93	4,239.04	150.28	19,024.09
Watershed Stabilization Area IV	21,503.70	2,491.60	5,881.10	454.63	30,331.03
Watershed Stabilization Area V	29,245.30	4,311.19	6,012.78	1,708.04	41,277.31
Yellowstone Dam				121,481.75	121,481.75
	$ 130,912.09	$ 14,550.87	$ 30,633.66	$ 138,295.23	$ 314,391.85
Game Administration	$ 15,741.73	$ 2,093.75	$ 7,303.48	$ 28.25	$ 25,167.21
General Game Management					
Field Administration	$ 11,878.11	$ 2,566.37	$ 2,770.40	$	$ 17,214.88
Area I	33,802.39	7,108.87	16,352.82	3,349.39	60,613.47
Area II	35,738.21	9,210.17	9,997.54	9,495.55	64,441.47
Area III	57,327.82	8,112.38	12,245.33	6,903.96	84,589.49
Area IV	45,650.32	9,615.97	16,312.66	7,915.93	79,494.88
Area V	38,650.74	9,134.14	6,650.87	1,019.61	55,455.36
	$ 223,047.59	$ 45,747.90	$ 64,329.62	$ 28,684.44	$ 361,809.55

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	Travel Expense	Materials, Services and Supplies	Capital Outlay	Total 1953-1954 Disbursements
Game and Fur Farm	$ 194,726.16	$ 6,420.62	$ 133,259.81	$ 7,231.66	$ 341,638.25
Pittman-Robertson—Fish and Game					
Coordination	$ 28,657.45	$ 3,288.17	$ 8,194.04	$ 14.40	$ 40,154.06
Deer Research	3,513.85	991.21	474.61	347.59	5,327.26
Fur Research	13,550.54	2,536.57	1,450.43	656.71	18,194.25
Game Survey and Census	30,540.26	7,032.90	3,821.36	110.39	41,504.91
Grouse Research	18,372.78	4,728.72	2,418.70		25,520.20
Pathology Research	4,009.32	332.86	236.07		4,578.25
Pheasant-Quail Research	18,503.62	2,410.97	2,115.62	225.57	23,255.78
Waterfowl Research	16,023.43	2,580.09	1,183.74	239.19	20,026.45
Regional Development—Area I	1,866.29	404.96	44.53		2,315.78
Regional Development—Area II	840.83	394.57	16.98		1,252.38
Regional Development—Area III	1,828.22	587.36	58.50	2,813.87	5,287.95
Regional Development—Area IV	6,550.29	1,632.40	1,042.03		9,224.72
Regional Development—Area V	26,234.95	4,755.08	4,513.05	9.75	35,512.83
Forest Habitat Improvement Area I	10,960.70	2,119.29	3,358.47	3,649.04	20,087.50
Forest Habitat Improvement Area II	15,629.03	3,918.76	5,416.52	1,258.79	26,223.10
CWCA—Black River Falls Maintenance	5,168.79	259.33	1,663.88		7,092.00
CWCA—Meadow Valley Maintenance	4,037.42	301.17	414.79		4,753.38
Crex Meadow Maintenance	8,774.26	792.89	1,164.24	817.48	11,548.87
Horicon Marsh Maintenance	12,244.40	517.70	5,354.51	1,136.10	19,252.71
Ackley Development	1,441.32	275.90	365.00	444.14	2,526.36
Browntown Development	464.27	87.01	15.45		566.73
Crex Meadow Development	2,624.41	198.34	1,363.35	17,696.67	21,882.77
CWCA—Black River Falls Development	2,154.20	165.12	462.23	1,969.29	4,750.84
CWCA—Meadow Valley Development	323.32	44.53	80.00		447.85
Little Rice Development	2,469.43	385.44	956.08	416.09	4,227.04
Mazomanie Development	1,821.17	383.54	878.58		3,083.29
Prairie Chicken Development	1,522.38	432.69	172.47	150.00	2,277.54
Rock Prairie Area Development	769.14	276.31	2,975.14		4,020.59
Totogatic Development	2,777.16	408.89	367.11	1,018.80	4,571.96
Wood County Development	8,977.31	713.63	421.15	7,927.69	18,039.78
Yellowstone Development	9,207.08	852.11	4,697.31	9,333.00	24,089.50
Yellowstone Dam Development	372.87	89.69	8,240.88	73,690.45	82,393.89
Amberg Deer Yard Acquisition	49.10	24.36			73.46
Browntown Acquisition	17.10	4.50			21.60
Crex Meadow Acquisition	299.46	20.31			319.77
CWCA—Black River Falls Acquisition	86.70	22.26			108.96
Eldorado Acquisition	565.98	239.08	37.80		842.86
Fish Lake Acquisition	57.10	5.10			62.20
French Creek Acquisition		1.14			1.14
Horicon Marsh Acquisition	45.09			15.00	60.09

	Personal Services	Travel Expense	Materials, Services and Supplies	Capital Outlay	Total 1953-1954 Disbursements
Jackson Marsh Acquisition	$ 80.62	$ 17.73			$ 98.35
Kiezer Lake Acquisition	12.60	3.12			15.72
Little Rice Acquisition	105.72	65.22	$ 112.78		283.72
Navarino Marsh Acquisition	244.17	118.34	4.45		366.96
New Munster Acquisition	130.71	74.35			205.06
Peshtigo Brook Acquisition	44.09	19.77			63.86
Pine Island Acquisition	295.91	77.82			373.73
Princess Point Acquisition	336.58	91.16			427.74
Rice Beds Creek Acquisition	125.45	19.43		$ 8.50	153.38
Thunder Lake Acquisition	185.73	58.07			243.80
Tiffany Acquisition	250.49	68.72			319.21
Vernon Marsh Acquisition	113.45	25.31	1.40		140.16
Weirgor Acquisition	102.35	13.86			116.21
Willow Creek Acquisition	12.22	26.76			38.98
Woods Flowage Acquisition	45.26	7.59			52.85
Law Enforcement	$ 265,436.37	$ 44,902.20	$ 64,093.25	$ 123,948.51	$ 498,380.33
Administration	$ 13,470.00	$ 2,650.00	$ 5,670.16	$ 300.14	$ 22,090.30
Area I	87,684.14	40,675.71	1,408.17	2,102.26	131,870.28
Area II	80,651.75	38,047.05	1,858.03	2,281.35	122,838.18
Area III	101,358.55	45,356.96	1,976.34	4,437.57	153,129.42
Area IV	84,817.36	38,168.48	2,498.66	2,213.98	127,698.48
Area V	69,038.00	29,297.59	952.12	1,046.04	100,333.75
Lake Superior	13,251.00	3,101.59	2,162.54	203.21	18,718.34
Lake Michigan	11,018.26	4,233.11	1,445.76	71.99	16,769.12
Radio Dispatching	49,795.06		1,623.92		51,418.98
Undersized Fish Purchases			646.46		646.46
	$ 511,084.12	$ 201,530.49	$ 20,242.16	$ 12,656.54	$ 745,513.31
State Employees' Retirement Fund			2,765.16		2,765.16
Workmen's Compensation Awards			2,753.66		2,753.66
Unemployment Compensation			18,705.00		18,705.00
Rivers Survey—Fish and Game	8,954.07	1,879.62	449.75	554.43	11,837.87
Dodge County 25% Sale of Fur			3,848.99		3,848.99
Investment Expense—Fish and Game			209.74		209.74
TOTAL FISH AND GAME	$2,385,591.10	$ 388,566.63	$ 669,700.29	$ 379,884.08	$3,823,742.10

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953-1954 Disbursements*
RETIREMENT—FISH AND GAME					
Wisconsin Retirement Fund			$ 99,576.35		$ 99,576.35
Conservation Warden Pension			38,500.00		38,500.00
Social Security			22,024.61		22,024.61
TOTAL RETIREMENT—FISH AND GAME			$ 160,100.96		$ 160,100.96
CANCELLED DRAFTS			$ 1,801.50		$ 1,801.50
FIRE LOSS	$ 564.20		$ 1,880.46	$ 259.85	$ 2,704.51
BOUNTIES—FOX			$ 28,704.25		$ 28,740.25
RECREATIONAL ADVERTISING	$ 12,912.00	$ 2,865.56	$ 168,672.42	$ 481.73	$ 184,931.71
SPORTSMEN'S LICENSES					
Public Hunting and Fishing Grounds—Sportsmen's Licenses					
Area I			$ 1,887.52		$ 1,887.52
Area II			1,599.37		1,599.37
Area III			8,975.01		8,975.01
Area IV			12,708.35		12,708.35
Area V			20,038.02		20,038.02
			$ 45,208.27		$ 45,208.27
Pittman-Robertson—Sportsmen's Licenses					
Amberg Deer Yard Acquisition				$ 2,572.30	$ 2,572.30
Crex Meadows Acquisition				6,653.31	6,653.31
CWCA—Black River Falls Acquisition				6,926.75	6,926.75
Eldorado Acquisition				3,420.49	3,420.49
Fish Lake Acquisition				10.60	10.60
French Creek Acquisition				214.50	214.50
Hay Creek Deer Yard Acquisition				670.00	670.00
Horicon Marsh Acquisition				3,300.00	3,300.00
Jackson Marsh Acquisition				15.00	15.00
Kiezer Lake Acquisition				347.67	347.67
Little Rice Acquisition				361.25	361.25
Navarino Marsh Acquisition				2.50	2.50
New Wood Deer Yard Acquisition				6,000.00	6,000.00
Pine Island Acquisition				9.00	9.00

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953-1954 Disbursements*
Princess Point Acquisition				$ 5,327.55	$ 5,327.55
Rice Beds Creek Acquisition				2,081.14	2,081.14
Thunder Lake Acquisition				4.90	4.90
Tiffany Acquisition				10.80	10.80
Vernon Marsh Acquisition				2,003.20	2,003.20
Weirgor Acquisition				1,141.70	1,141.70
Woods Flowage Acquisition				117.50	117.50
TOTAL SPORTSMEN'S LICENSES				$ 41,190.16	$ 41,190.16
			$ 45,208.87	$ 41,190.16	$ 86,398.43
SOUTHERN WISCONSIN FORESTS					
Administration	$ 6,275.00	$ 2,378.31	$ 10,689.66	$ 182.68	$ 19,525.65
Big Foot Beach	10,817.62	214.71	3,312.70	6,028.19	20,373.22
Northern Purchase Unit	49,799.22	305.33	8,368.24	2,489.60	60,962.39
Point Beach	19,389.44	103.55	2,766.52	3,127.20	25,386.71
Southern Purchase Unit	28,382.22	285.40	4,018.42	1,124.40	33,810.44
TOTAL SOUTHERN WISCONSIN FORESTS	$ 114,663.50	$ 3,287.30	$ 29,155.54	$ 12,952.07	$ 160,058.41
KETTLE MORAINE LAND				$ 67,382.06	$ 67,382.06
			$ 215,343.35		$ 215,343.35
FORESTRY					
General Administration Transfers Between Appropriations	$ 13,500.35	$ 1,365.21	$ 1,613.86	$ 203.95	$ 16,683.37
Finance Transfers Between Appropriations	33,652.36	1,253.81	4,189.25	582.78	39,678.20
Commission Services Transfers Between Appropriations	2,441.88	1,401.31	277.41		4,120.60
Staff Services Transfers Between Appropriations	14,362 20	3,170.77	14,635.97	2.16	32,171.10
Rivers Survey Transfers Between Appropriations	4,477.04	939.81	224.88	277.22	5,918.95
Clerical Transfers Between Appropriations	(119,856.03)	(333.95)	(23,021.66)	(1,828.36)	(145,040.00)
Information and Education Administration Transfers Between Appropriations	(3,720.60)	(677.05)	(137.79)		(4,535.44)
Information Transfers Between Appropriations	(7,144.69)	(243.20)	(28,544.08)		(35,931.97)
Education Transfers Between Appropriations	(21,483.62)	(8,288.70)	(10,620.54)	(1,524.75)	(41,917.61)
Forestry Administration	8,280.95	1,535.47	883.38		10,699.80
Clerical	206,648.34	618.42	42,632.70	3,152.36	253.051.82

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953-1954 Disbursements*
Forest Protection					
Administration	$ 11,601.50	$ 2,006.98	$ 120.25	$	$ 13,728.73
Tomahawk Warehouse			(9,559.77)		(9,559.77)
Tomahawk Headquarters	90,572.85	4,849.44	48,053.60	86,743.97	230,219.86
Central Area Headquarters	5,245.90	944.55	926.24	1.75	7,118.44
District 9	79,997.16	599.26	8,813.71	946.00	90,356.13
District 10	77,508.64	1,271.49	10,072.12	1,212.58	90,064.83
District 11	4,346.41	861.06	2,204.98	15,184.68	22,597.13
Northern Area Headquarters	5,235.00	1,399.04	494.42	99.50	7,227.96
District 3	70,776.96	1,900.04	9,522.63	923.07	83,122.70
District 6	61,983.38	1,734.43	11,354.84	1,079.93	76,152.58
District 8	75,548.56	1,091.84	6,598.09	1,020.48	84,258.97
Northeast Area Headquarters	5,115.00	1,168.42	642.30		6,925.72
District 4	92,352.22	1,580.81	10,238.49	1,059.58	105,231.10
District 5	78,792.82	1,509.00	7,573.53	1,204.85	89,080.20
Northwest Area Headquarters	5,115.00	1,477.10	297.04		6,889.14
District 1	85,642.44	1,238.86	7,733.84	911.55	95,526.69
District 2	78,480.60	1,072.85	9,950.33	1,797.32	91,301.10
District 7	91,944.15	1,606.71	8,576.30	1,729.33	103,856.69
	$ 920,258.79	$ 26,311.88	$ 133,612.94	$ 113,914.59	$1,194,098.20
Fire Suppression					
Reportable Fires—County	$ 17,689.00	$ 787.74	$ 4,653.18		$ 23,129.92
Nonreportable Fires—Other	15,384.35	220.80	1,198.24		16,803.39
	$ 33,073.35	$ 1,008.54	$ 5,851.42		$ 39,933.31
Cooperative Forestry					
Administration	$ 16,792.82	$ 4,779.90	$ 1,839.08	$ 185.66	$ 23,597.46
County Forestry	65,956.36	18,136.39	1,397.75	529.03	86,019.53
Farm Forestry	73,828.00	20,894.31	3,168.96	3,052.04	100,943.31
Insect Control	8,343.00	1,741.81	528.63	30.28	10,643.72
State Forest Inventory	64,872.65	7,792.94	6,378.43	346.10	79,390.12
	$ 229,792.83	$ 53,345.35	$ 13,312.85	$ 4,143.11	$ 300,594.14
Nurseries					
Administration	$ 9,930.00	$ 668.48	$ 427.12	$	$ 11,025.60
Gordon	12,792.84	216.09	8,777.81	510.33	22,297.07
Griffith	92,373.17	164.75	40,523.67	2,419.43	135,481.02
Griffith Nursery Transfers to Reforestation			(20,237.00)		(20,237.00)
Hayward	39,695.32	377.57	4,604.57	337.10	45,014.56
Hugo Sauer	19,174.77	128.79	6,733.40	517.24	26,554.20
Trout Lake	29,420.16	584.89	2,888.18	112.70	33,005.93
	$ 203,386.26	$ 2,140.57	$ 43,717.75	$ 3,896.80	$ 253,141.38

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953-1954 Disbursements*
State Forests					
Administration	$ 4,953.00	$ 841.01	$ 373.72	$ 116.27	$ 6,284.00
American Legion	7,696.00	361.99	5,106.07	257.72	13,421.78
Brule River	7,492.66	344.00	3,593.36	382.06	11,812.08
Council Grounds	2,955.00		478.25		3,433.25
Flambeau	35,250.06	294.66	4,200.38	5,761.29	45,506.39
Northern Highland	65,118.84	3,484.88	13,195.11	6,513.33	88,312.16
Trout Lake Administration	10,050.00	1,504.34	155.44	35.45	11,745.23
	$ 133,515.56	$ 6,830.88	$ 27,102.33	$ 13,066.12	$ 180,514.89
Forest Insect Research	$ 15,783.67	$ 1,450.19	$ 2,581.51	$ 2,608.83	$ 22,424.20
Tree Disease Research	19,730.00	1,414.78	2,462.37	1,152.75	24,759.90
Blister Rust Control	8,205.09	2,297.89			10,502.98
Forest Soils Research	16,670.06	3,345.53	1,420.69	411.95	21,848.23
Forest Genetics	12,359.78	1,117.66	2,586.62	2,751.45	18,815.51
Information and Education Administration	7,155.00	1,302.02	264.99		8,722.01
Information					
Publications	$ 2,309.79	$ 54.02	$ 52,655.96		$ 55,019.77
Newspaper Service	5,775.00	285.75	1,511.54		7,572.29
Special Services	5,655.00	127.93	724.96		6,507.89
	$ 13,739.79	$ 467.70	$ 54,892.46		$ 69,099.95
Education					
Conservation Congress	$	$ 3,561.05	$ 1,824.69		$ 5,385.74
Clubs	4,815.00	1,171.11	5.40		5,991.51
Exhibits	14,362.75	4,979.88	5,561.09	$ 1,313.87	26,217.59
Schools	6,135.00	1,492.48	793.73	50.62	8,471.83
Visual Aids	16,001.90	1,448.17	10,554.88	1,567.72	29,572.67
	$ 41,314.65	$ 12,652.69	$ 18,739.79	$ 2,932.21	$ 75,639.34
Workmen's Compensation			$ 838.45		$ 838.45
Unemployment Compensation			83,672.50		83,672.50
TOTAL FORESTRY	$1,786,143.01	$ 114,427.58	$ 393,190.05	$ 145,743.17	$2,439,503.81

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953-1954 Disbursements*
RETIREMENT—FORESTRY					
Wisconsin Retirement Fund			$ 93,341.12		$ 93,341.12
Social Security			19,233.13		19,233.13
TOTAL RETIREMENT—FORESTRY			$ 112,574.25		$ 112,574.25
BEAR AND DEER DAMAGE					
Deer Damage			$ 13,049.14		$ 13,049.14
Bear Damage			4,366.72		4,366.72
TOTAL BEAR AND DEER DAMAGE			$ 17,415.86		$ 17,415.86
STATE PARKS					
General Administration Transfers Between Appropriations	$ 1,285.75	$	$	$ 19.42	$ 1,305.17
Finance Transfers Between Appropriations	3,204.99			55.50	3,260.49
Commission Services Transfers Between Appropriations	232.56				232.56
Staff Services Transfers Between Appropriations	766.40			.21	766.61
Clerical Transfers Between Appropriations	8,265.93			126.09	8,392.02
State Parks Operating					
Administration	$ 9,833.62	$ 821.74	$ 26,018.40	$	$ 36,673.76
Aztalan	888.93		449.00	836.37	2,174.30
Brunet Island	9,815.55	92.02	1,301.26	35.73	11,244.56
Castle Mound	2,349.00	78.95	292.69	38.56	2,759.20
Copper Falls	9,568.54	34.84	2,003.19	68.01	11,674.58
Cox Hollow			11.53		11.53
Cushing Memorial	946.00	13.09	131.46		1,090.55
Devils Lake	46,301.24	363.80	8,855.20	1,723.87	57,244.11
First Capitol	2,097.80		103.72		2,201.52
Interstate	20,719.52	546.03	1,898.83	64.58	23,228.96
Lost Dauphin	421.29	127.22	40.64	335.49	924.64
Lucius Woods	6,395.77	121.44	1,857.35	1,262.19	9,636.75
Merrick	10,718.94	596.99	1,782.41	1,079.31	14,177.65
Mill Bluff	1,637.57		154.90	66.00	1,858.47
Nelson Dewey	9,085.00		1,807.83	573.58	11,466.41
New Glarus	1,577.17	51.01	8.31		1,636.49
Ojibwa	1,461.72	8.10	410.92		1,880.74

CONSERVATION FUND DISBURSEMENTS—Continued

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953-1954 Disbursements*
Pattison	$ 12,777.62	$ 136.19	$ 3,703.55	$ 2,266.63	$ 18,883.99
Peninsula	34,878.45	802.96	6,489.69	1,426.57	43,597.67
Perrot	11,429.10		1,246.01	163.67	12,838.78
Potawatami	9,722.85	137.43	1,197.29	1,386.63	12,444.20
Rib Mountain	24,272.44	395.97	7,854.93	13,431.24	45,954.58
Roche A Cri	1,606.45	8.17	213.24	137.34	1,965.20
Rocky Arbor	2,774.20	39.02	454.64	.95	3,268.81
Terry Andrae	8,236.64	23.25	1,404.29	283.77	9,947.95
Tower Hill	6,390.00	82.18	579.62	15.60	7,067.40
Wildcat Mountain	9,771.00	130.22	2,910.87	650.39	13,462.48
Wyalusing	18,603.64	167.15	2,363.39	138.38	21,272.56
Golf Course—Peninsula State Park	15,879.99	67.80	3,005.84	1,120.10	20,073.73
Cooperation—State Historical Society	3,999.99	477.65			4,477.64
Cooperation—Aztalan Exploration		25.41	100.00	146.50	271.91
	$ 294,160.03	$ 5,348.63	$ 78,651.00	$ 27,251.46	$ 405,411.12
TOTAL STATE PARKS	$ 307,915.66	$ 5,348.63	$ 78,651.00	$ 27,452.68	$ 419,367.97
CHAPTER 668—GUYLAFOND AWARD			$ 2,700.00		$ 2,700.00
GRAND TOTAL CONSERVATION FUND	$4,607,789.47	$ 514,495.70	$1,987,585.17	$ 675,345.80	$7,785,216.14

Exhibit B

REFORESTATION FUND

Beginning and Ending Balances and Transactions of the Reforestation Fund For the Fiscal Year 1953–1954

	Balance Forwarded From 1952–1953	*Plus Revenue 1953–1954*	*Minus Disbursements 1953–1954*	*Balance Forwarded 1954–1955*
REFORESTATION	$198,205.42	$106,275.10	$115,317.23	$189,163.29
TOTAL REFORESTATION FUND	$198,205.42	$106,275.10	$115,317.23	$189,163.29

Schedule B–1

REFORESTATION FUND REVENUE

REFORESTATION	
Rent and Rentals	$ 3,151.50
Sale of Resources	65,425.73
Other Revenue	5.00
Investment Income	4,506.53
Boscobel Nursery	33,186.34
TOTAL REFORESTATION	$106,275.10

Schedule B–2

REFORESTATION FUND DISBURSEMENTS

	Personal Services	*Travel Expense*	*Materials, Services and Supplies*	*Capital Outlay*	*Total 1953–1954 Disbursements*
REFORESTATION					
Forestry Activities					
Land Purchase	$	$	$	$ 29,550.03	$ 29,550.03
Griffith Nursery Transfers from Forestry			20,237.00		20,237.00
State Aid			16,356.44		16,356.44
			$ 36,593.44	$ 29,550.03	$ 66,143.47
Pittman-Robertson—Reforestation					
Boscobel Nursery	$ 32,135.25	$ 835.43	$ 12,733.65	$ 3,458.14	$ 49,162.47
Investment Expense			11.29		11.29
TOTAL REFORESTATION	$ 32,135.25	$ 835.43	$ 49,338.38	$ 33,008.17	$115,317.23

Exhibit C

GENERAL FUND DISBURSEMENTS

	Appropriation	*Minus Disbursements 1953-1954*	*Unexpended Balance*
LAPSING BALANCES			
Forest Crop Law			
Administration—Conservation Department	$ 4,843.53	$ 4,823.53	$ 20.00
Department of Taxation	1,184.43	1,184.43	—0—
Forest Crop Withdrawal	602.29*	602.29	—0—
Forest Crop Severance Tax	4,016.73*	4,016.73	—0—
Forest Crop Aid	235,000.00	234,915.87	84.13
1952-1953 Forest Crop Aid	235,000.00	234,807.46	192.54
Bounties			
1/2 Fox Bounties	28,740.25*	28,740.25	—0—
Bounties on Other Animals	33,805.00*	33,805.00	—0—
Patrolling Outlying Waters	2,430.74	2,430.74	—0—

*Sum Sufficient.

NON-APPROPRIATED REVENUE

FOREST CROP	
Forest Crop Withdrawals	$ 250.14
Forest Crop Severance Tax	29,933.18
TOTAL FOREST CROP	$ 30,183.32