Biennial report of the State Conservation Commission of Wisconsin for the fiscal years ending June 30, 1929 and June 30, 1930. 1930

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WISCONSIN CONSERVATION COMMISSION

BIENNIAL REPORT

1929-1930

BIENNIAL REPORT

OF THE

STATE CONSERVATION COMMISSION

OF

WISCONSIN

FOR THE

Fiscal Years Ending June 30, 1929 and June 30, 1930

MADISON, WISCONSIN
1930

THE STATE CONSERVATION COMMISSION

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Minn.

LETTER OF TRANSMITTAL

HONORABLE PHILIP F. LA FOLLETTE,
Governor of Wisconsin

Sir: Agreeable to the provisions of law, we herewith submit a biennial report of the activities of the State Conservation Commission of Wisconsin, and trust that it will meet with your approval.

Respectfully submitted by

The State Conservation Commission,
WILLIAM MAUTHE, *Chairman,*
E. M. DAHLBERG, *Secretary.*

In Memoriam

Alfred P. Vander Kelen — November 1928
Conservation Warden

Hans Hendrickson — April 1929
Conservation Warden

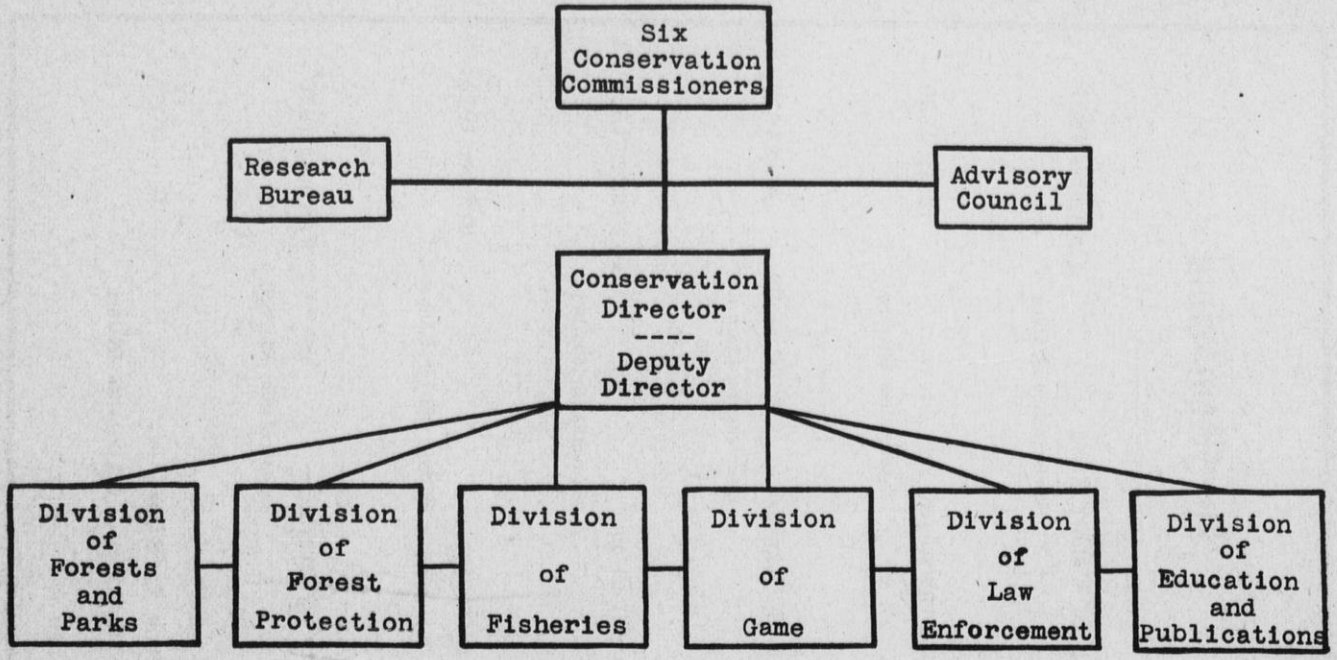
Einar P. Johnson — May 1929
Conservation Warden

Ellis M. Weaver — September 1929
Conservation Warden

Joseph Beitz — October 1929
District Forest Ranger

Henry C. Gruebner — February 1930
Conservation Warden

William H. Riebe — June 1930
Conservation Warden



Organization Chart of the Wisconsin Conservation Commission

FOREWORD

For the second time it is the privilege of this commission to submit a biennial report of the activities within the state having as their purpose the conservation of the natural resources.

The responsibility for leadership in conservation in Wisconsin has, by legislative enactment, been placed in the hands of the commission. This responsibility is accepted and the operations of the commission have been at all times such as to meet the various administrative problems in a broad, sympathetic, and constructive manner. At the same time there has been constant opportunity for the closest cooperation with the various state departments, organizations, and individuals having an active interest in conservation. Probably never in the history of conservation in Wisconsin has there been better team work. There is general recognition that the restoration of the natural resources is an undertaking that must be shared in by all citizens. The social and economic life of the state is most intimately allied with the proper use of the natural resources. The basis for well balanced and effective work in conservation rests primarily on an efficient program of land utilization. The formulation of such a program rests on the accuracy of the information at hand, and so during the biennium the commission has taken action in these important matters only after thorough study and weighing of the evidence so obtained.

The necessary field work for the most part has been done by employees of the department, but in reaching final decision the commission has been fortunate in getting much constructive advice from conservation-minded organizations and individuals who have ever held themselves in readiness to give their counsel and special knowledge for the advancement of conservation in the state.

On the basis of the experience gained, a number of

changes in the fundamental organization were perfected during the past two years. The increase in the volume of work necessitated a further division of the administrative work in the department. This work is now handled by six divisions: forests and parks, forest protection, fisheries, law enforcement, game, and education and publications.

In addition, services of high order have been rendered by the research bureau and the members of the advisory council. Detailed accounts of the respective activities, plans, and recommendations will be set forth later in this report. At this time attention is called to several matters of general interest which are indicative of the policy followed by the commission.

Forestry

The constitutional provision authorizing the allotment of tax money for forestry purposes adopted in 1924, was made effective for the first time on March 1, 1930. By legislative action 1/20 of a mill of the tax money was designated for forestry purposes, and under this authorization $298,797.62 was made available to the commission for the acquisition, development, and protection of forest areas in the state. As a result, there has been a strengthening of the fire protection and suppression organization in the 11 fire protection districts. Steps have also been taken to increase the capacity of the forest tree nursery at Trout lake, and there has been further consideration of the establishment of a second forest tree nursery in the central part of the state to meet the possible increased demand for forest tree planting material in this section of the state.

Plans are under way for extensive planting operations on state lands under the control of the commission, and cooperatively with the various counties which have definitely committed themselves to a forestry program by the establishment of county forests and registration thereof under the provisions of the forest crop law. There will also be forest tree planting material available for other political units of the state. Every effort is being made to increase the interest of private owners to the end that they will take active steps to reforest by planting where natural reforestation is not occurring at the present time.

The restoration of the forests in the state is of the most vital importance and can by no means be left to the individual owner. Therefore, the commission, after a state-wide survey of potential and strategically located forest areas, has designated six purchase areas within which a program of acquisition of forest lands for state purposes is under way. No purchases were consummated during the biennium, but definite places and policies were formulated for the conduct of this acquisition program.

This program will run concurrently with the purchase program of the federal government of one million acres as authorized by the legislature and the setting aside of tax delinquent lands suitable for forestry purposes by the respective counties. Conditions in the state are such that there is ample room for the development of each type of ownership and control, and not until there is a united and state-wide effort of forest restoration can a foundation be laid for satisfactory forest restoration in Wisconsin.

Registrations under the forest crop law have brought the total on December 1, 1930 to 300,000 acres, and there is every indication that an additional 100,000 acres will be offered for registration before the close of the calendar year 1930. During the closing months of this biennium a start was made in making field examinations of the lands registered to determine the production capacity of the lands. Mere registration of the land for the term authorized by the law without determined effort on the part of the owner to stimulate the productive capacity, fails to meet the intent of the law. Provision is made for periodic examination, and as such inspections are made it is planned to work out practical plans of management.

The commission has indicated to the various counties that the services of its foresters are available to them in the development and improvement of county lands registered under this law.

The bulk of the land registered by private owners under the forest crop law has been cut over and considerable time will elapse before a timber crop will be harvested. The law by no means restricts registration to such lands and several entries have been made of selectively logged areas.

The foresters of the commission have been in close touch

with several timber land operators with the result that there is strong probability that considerable areas of timber land will be entered this year which will be selectively logged later. Such handling of timber lands will be the most effective way to restore the forests in northern Wisconsin.

Parks

During the biennium three additional state parks were established—Terry Andrae in Sheboygan county, American Legion Memorial State Park and Forest Preserve in Oneida county, and Copper Falls in Ashland county; containing 112, 36,000, and 520 acres respectively. This brings the total number of state parks to 16 with a total area of 197,-957 acres.

The increased use of the state parks has called for a very extensive program for improved sanitary and safety improvements. Particular attention is being given to the purity of the water used for drinking purposes, and during 1930 repeated tests of the water supplies were made for the commission by the State Board of Health.

Forest Protection

The conservation of the natural resources of the state is possible only if the forests are kept in good growing condition and protected against destruction. Fires are a constant menace and therefore it is essential that there be an adequate system of protection against fires. In line with this, early in 1930 a chief forest fire warden was employed to organize and direct the preventive and suppression activities of the state.

The state has committed itself to a definite program of fire prevention and suppression. The organization of the 11 districts is the first step. Much work remains to be done. The strength of the organization rests on the proficiency of the men in the districts, and therefore the program ahead for the commission is the careful selection of such men, training them to the job, and the purchase of special equipment in quantity sufficient to meet the demands that arise in the total protection area of 14,000,000 acres.

Supplementary to the work done directly within and by the organization of the conservation commission is the cooperation obtainable from local county boards and private

owners. Unfortunately there is not even at this time a full appreciation on the part of many citizens of the hazard existing periodically in the forest, nor the serious damage done to the vegetation and the land by fire. There are many grim evidences of continued abuse and misuse of the forest areas of this state. Fire takes a heavy toll of the inherent wealth in these areas. This lack of understanding may be overcome through education, and there has been close co-operation with the press, schools, and organizations to indicate the destructive character of uncontrolled fires in the forest.

White Lake Ranger Station. Headquarters of Forest Protection District No. 9.

Fisheries

The restocking of lakes and streams in Wisconsin has been under way for many years. During the past two years decided progress has been made in this work. There has been a general change in technique required by the distribution of larger fish. To meet this change many improvements have been made in the hatcheries. The first step has been the construction of rearing ponds where the fish may be kept twenty months before they are distributed for restocking purposes.

The larger the fish used in these operations the better chance will there be for them to overcome the difficulties

found in the lakes and streams, and grow to the size making them available for a legal catch.

There has been continued co-operation with organizations and individuals interested in the protection and development of the fish life. Many organizations have undertaken the establishment of rearing ponds, and during the year representatives of the fisheries department have assisted in the selection of proper natural lakes and given technical advice for their operation. Such private endeavors make very valuable contributions to the state, and the commission feels that they are entitled to every assistance it can render through its employees skilled in this work.

Of striking importance during this biennium has been the extensive co-operative work with the federal bureau of fisheries in Lake Michigan, in the study of conditions affecting the commercial fishing industry and the fish rescue work in the Mississippi river from which large quantities of game fish suitable to Wisconsin waters have been obtained and distributed.

The further work done in the survey of the lakes and streams to determine the suitability of these waters for game fish has been of increasing value in bringing about the proper distribution of fish with a minimum of loss.

As Wisconsin's fish and game propagation programs become more efficient, and larger numbers of fish and game are produced each year, the Wisconsin sportsman is faced with the problem of having fewer places to fish or hunt. "No Trespassing", "No Fishing", and "No Hunting" signs are becoming more common all the time. If expanded propagation programs are to mean most to Wisconsin citizens, then the state must embark on an acquisition program to secure lands for public hunting and fishing grounds.

The need for public hunting and fishing grounds is becoming more imperative annually just as the difficulties of securing such grounds are increasing each year.

Additional funds are required before the state can develop a system of public hunting and fishing grounds. Because land values are increasing in desirable places, the state should begin an acquisition program immediately if the citizens of Wisconsin are to be assured places to which they can go to hunt and fish.

Game

The division of game was created just prior to the opening of the biennium, and during the two year period great advances have been made. A game farm located in Peninsula State Park has been developed which produced during the second year, approximately 10,000 live birds and 40,000 pheasant eggs, as well as carrying on extensive research work in propagation and distribution of other species of game birds, both native and introduced. In connection with the game farm there is a native game bird and animal zoo.

The game division has conducted, partially in co-operation with the research bureau, several surveys concerned with the wild life refuge systems, state game populations, and waterfowl refuges. Both native birds and animals have been trapped and transported to suitable areas for release, or taken to the game farm for propagation experiments.

Of vital importance in the game program has been the establishment of a system of winter feeding stations in important game bird congregation centers. Co-operative winter feeding programs as well as co-operative game bird hatching and stocking programs, have been encouraged with private individuals, sportsmen's organizations, and public institutions throughout the state. Educational bulletins and instructions for these projects have been prepared and distributed.

Law Enforcement

Very effective work has been done by the wardens in the enforcement of the laws dealing with the protection of fish and game.

Their assignment is the most difficult that comes under the direction of the commission. The individual warden operates under many difficulties, and he is constantly called upon to exercise his ingenuity and skill to accomplish the task assigned him.

The size of the territory assigned to the individual warden is so large that it is humanly impossible to cover it in the manner desired by the commission or the warden himself. Then, unfortunately, in many localities of the state local opinion has not yet crystallized itself sufficiently to give a reasonable support to the warden in the disposition of cases

of law violation. There are varying degrees of support in the different parts of the state. In some localities the serious situation exists that a conviction for the violation of the game laws is almost impossible to obtain no matter how conclusive the evidence nor how flagrant the violation. This non-support at times even finds open expression of opposition to the enforcement of the fish and game laws.

It is the responsibility of every citizen to see that there be no illegal destruction of fish and game, or any of the other natural resources of the state. The warden has the special responsibility to apprehend the violator that there may be consideration of the destructive act by legally constituted courts. The loss of a case may be a matter of deep chagrin to the warden, but that is negligible as against the loss to the community when there is dynamiting of streams with the killing of hundreds of pounds of fish, or the indiscriminate shooting of the protected partridge, or killing deer out of season.

The absence of fish and game in any locality of the state is a serious loss to the local citizen when measured in terms of personal enjoyment. But that is not all. The illegal destruction of fish and game means a depletion of the available supply to such a point that there may be virtual extinction. Such a disappearance will be reflected at once in economic loss to the community, particularly through the absence of tourists and those seeking recreation. The destruction of the resource is most serious to the local community. It is hoped that there will be a fuller appreciation of what the failure to support the wardens in their efforts to enforce the law means first to the local community and next to the state as a whole.

Supplementing the careful selection of wardens through rigid examinations in co-operation with the bureau of personnel, special training schools for the wardens have been held periodically during the past two years. The consideration of problems and interchange of ideas and experience is helpful in the building up of the law enforcement work.

The total number of arrests and seizures exceeds that of any previous years.

Education and Publications

The success of any program of conservation in Wisconsin is dependent on the understanding by the citizens of the problems confronting the state and the existing machinery provided to cope with the situation. To this end the commission organized the division of education and publications.

The basic policy is to furnish strictly informational matter of service to the newspapers and other publishing agencies. In line with this, a system of daily, weekly, and monthly news releases is in operation. At times on call, special material for feature stories is furnished.

During the biennium definite advance has been made in the establishment of a photographic file of both still and motion pictures. State-wide distribution of motion picture films is obtained through a co-operative arrangement with the extension division of the university.

Within the past year several special display boards have been prepared for use at fairs, outdoor shows, and similar occasions. Visual education is most effective in connection with the work of the commission.

Plans have been formulated looking to the establishment of museums at several of the state parks to give the visitors an opportunity to view the flora and fauna of the state. Lack of funds has as yet prevented the execution of the museum plan, but a start has been made.

There has been an increasing interest manifested by educators of the state in the need for state-wide education in the schools on the various phases of conservation. To assist in this, an educational program has been prepared and distributed. Various material in the form of pamphlets and booklets has also been made available. The State Department of Public Instruction has indicated its keen interest in this, and plans to give instruction in conservation a definite place in the schools are under consideration.

Research

The commission is committed to the policy that its operations be based on reliable information. This is particularly essential with the highly technical phases of its work. The commission is operating not alone for the present, but has at all times in mind that the future progress in the conservation of the natural resources of the state is dependent on the

skill and wisdom exercised at this time in meeting the problems.

Accordingly, there was organized the research bureau made up of outstanding scientists skilled in the fields of special interest to the work of the conservation commission.

This group of volunteers has been an important factor in determining the special studies to be undertaken. With its advice and under its guidance, special studies have been made in forestry, fish, and game. Of outstanding importance is the investigation of the prairie chicken in Wisconsin. A progress report covering the field investigation in 1929 and 1930 is available in printed form.

The serious drouth of 1930 has made the special feeding program of game birds and animals of timely interest and value.

Many of the special studies constituting the program of the research bureau require time for study and development, and report thereon will not be possible for some time to come.

Acknowledgments

The biennium 1928–1930 has been one of sincere co-operation between the conservation commission and other agencies interested in the conservation program. Other Wisconsin state officials and departments; the University of Wisconsin, in particular the College of Agriculture; and the various departments of the federal government, have all been extremely helpful.

The railroads of the state have co-operated in transporting the entire output of the state fish hatcheries without charge, and also in carrying display material to the Chicago and Milwaukee outdoor shows, and to fairs within the state.

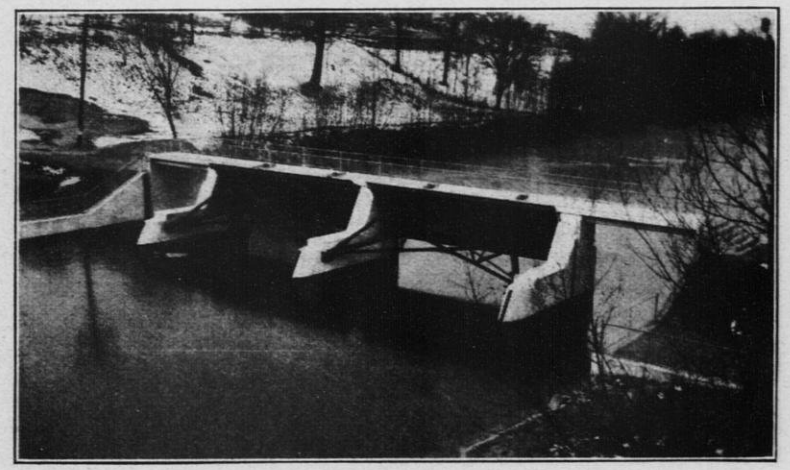
Never before in the history of the conservation movement have private individuals and sportsmen's groups been as helpful as during the biennium. They have assisted in the propagation, distribution, and stocking of fish and game; in recommendations and suggestions for wild life refuges; and in solving other problems of vital importance to the wild life conservation program.

The Milwaukee Public Museum has been of material assistance in inaugurating the state park museum policy and

in helping the conservation commission build up its library of motion picture films.

Outstanding Conservation Accomplishments

State forests. The legislature of 1929 through the 1/20 mill forestry tax, made possible a beginning in a new forestry policy for Wisconsin. By constitutional amendment in 1924, the people of the state directed the commission to "acquire, preserve, and protect" the forest areas of the state. No money was available to make a beginning until the new forestry tax was passed.



Horicon Dam. Built across the Rock river in the city of Horicon.

Following a state-wide survey to determine the areas in the state best adapted to forestry purposes, the commission established six proposed state forest purchase areas totaling 1,047,000 acres, of which the state is the owner of 154,400 acres.

At the close of the biennium plans were formulated for the beginning of land acquisition and forest development in these areas.

Forest crop law. Wisconsin's forest crop tax law passed by the legislature of 1927, and modified by the legislature of 1929, makes possible co-operative forestry endeavors looking toward the development of both privately and publicly owned forest lands. It creates a partnership between the

state and the owner of land whether it be private individual, company, or county, for the production of forests.

The intent of the forest crop law is very inclusive. Registrations can be made under it not only for lands which have been cut over, but also for lands on which there is still a stand of timber which is to be selectively logged. This law should operate to promote both private and public forestry, to reduce tax delinquency, and to insure permanence of vital wood-using industries.

Wisconsin land owners have welcomed the forest crop tax law. In three years of operation approximately 300,000 acres have been entered under its provisions, a considerably greater amount than has been entered under the provisions of similar laws in any other state, although many states have similar laws which have been in effect for longer periods.

County forests. The legislature of 1927 authorized counties to establish county forests to put back to work the thousands of acres counties were acquiring through tax delinquency. The procedure was simplified by the legislature of 1929, and the forest crop law was amended by the same legislature, enabling counties to enter forest lands under the law without expense to them.

Marinette, Langlade, Rusk, and Washburn have established county forests, but of these, Marinette county must be credited with the greatest progress. Recently Marinette county has established and named four county forests in which the county holdings total 80,360 acres, or 54 per cent of the total land area within the boundaries of the forests. All of this will be placed under the forest crop law next year.

Horicon Marsh. The conservation commission was directed by the legislature of 1927 to restore Horicon Marsh and establish a wild life refuge thereon. The refuge was established during the first year of the biennium, and at the close of the biennium definite plans were being carried out looking toward the restoration of the marsh by the building of a dam or dams in the Rock river. The first dam has been completed and the restoration of the marsh is under way.

RECOMMENDATIONS

FORESTRY

1. Continue land acquisition program within the proposed state forest areas.

2. Encourage industrial forestry through administration of the forest crop tax law.

3. Extend state tree planting program on public lands, and co-operative planting on private lands.

4. Continue forestry educational work in co-operation with organized agencies.

5. Develop state forest lands with consideration for recreational uses.

6. Continue co-operative work with federal government, University of Wisconsin, and other state departments.

FOREST PROTECTION

1. Revise forest protection district boundaries for more efficient administration.

2. Make new comprehensive maps of state forest protection districts.

3. Provide for stability in forest protection personnel by building up desirable conditions of employment.

4. Employ a dispatcher in each district office to assist in the assignment of emergency fire fighters.

5. Establish essential substations in each district.

6. Improve fire prevention and suppression facilities through purchase of additional equipment for each district.

7. Build penetration roads into unbroken forest areas, and open old logging roads.

8. Co-operate with logging companies to develop private forest protection plans, and prevent creation of fire hazards.

9. Prepare a forest fire manual to include laws, regulations, instructions, and suggestions for district rangers and fire wardens.

STATE PARKS

1. Extend park system in accordance with the statewide survey made by the commission.

2. Equip all state parks with modern sanitary facilities, camp grounds, roads, and trails.

3. Acquire roadside timber strips where possible to serve as roadside parks.

4. Develop and encourage the use of educational facilities in state parks.

FISHERIES

1. Operate existing hatcheries to full capacity before building new hatcheries.

2. Continue expansion of fish rearing activities both state and co-operative.

3. Continue and expand rearing experiments for lake and pan fish.

4. Acquire extensive water properties suitable for rearing fish.

5. Develop program for state supervision of fish planting.

6. Continue co-operative scientific surveys relating to the commercial fishing industry.

GAME

1. Expand the game production program at the state game farm.

2. Stock sections of the state with suitable species of game birds and animals.

3. Develop a system of public hunting and fishing grounds.

4. Develop a system of refuges based on a scientific survey of conditions.

5. Help develop an international system of waterfowl refuges.

6. Make an annual survey of the game crop of the state by counties.

7. Maintain a comprehensive winter feeding program for game birds.

8. Continue research in food, cover, and predator problems in relation to game.

9. Continue educational work among sportsmen and citizens.

LAW ENFORCEMENT

1. Codify and simplify the fish and game laws.

2. Increase number of conservation wardens to provide better protection for the game areas of the state.

3. Furnish modern equipment to all wardens.

4. Acquire additional large patrol boats for outlying waters.

EDUCATION AND PUBLICATIONS

1. Complete the conservation educational program for use in Wisconsin primary and secondary schools.

2. Extend the visual education program to include complete libraries of motion picture reels and lantern slides depicting conservation work and life history studies of Wisconsin game birds and animals.

3. Extend the public display program of the department to have Wisconsin represented at as many fairs and outdoor shows as practicable.

4. Develop museums in state parks.

RESEARCH BUREAU

1. Continue the prairie chicken investigation.

2. Inaugurate investigations of the food, habits, and range of the ring-neck pheasant, Hungarian partridge, and native Wisconsin species.

3. Continue the investigation of the slash disposal problem.

4. Continue co-operation investigations of fish food conditions in Wisconsin waters.

DIVISION OF ADMINISTRATION

Introductory

The first conservation commission in Wisconsin which concerned itself with more than one phase of the conservation program was organized by legislative action in 1915. This organization combined and correlated the activities of the then existing state board of forestry, state park board, fisheries commission, and the state fish and game warden department. This first commission was composed of three commissioners and a secretary.

The first conservation commission existed until 1923 at which time through legislation, it was replaced by a single commissioner form. Under the commissioner several division superintendents carried on the administrative work in the several divisions. This form of administration continued until August 1927.

The work of the conservation program in Wisconsin developed greatly in the few years prior to August 1927. It was thought that a broader viewpoint and wiser judgment should be secured so the legislature of that year again changed the form of administration for conservation work. The present conservation commission is composed of six commissioners who serve without remuneration. The commissioners, three of whom must reside in the southern and three in the northern half of the state, are appointed by the governor with the advice and consent of the senate. The commissioners are appointed for six year terms, two being appointed every odd year. It is this commission which today directs the policies of the conservation movement in Wisconsin. Such a form of administration insures a broad attitude toward all conservation problems.

Under chapter 23.09 W. S. the organization of the conservation commission is authorized and its powers delineated. This statute empowers the commission to make such rules, studies, surveys, services, or powers as it may deem necessary and advisable in the carrying out of the many phases of the conservation program. It has the authority to close seasons on any species of fish or game in case of urgent emergency; to designate such localities as it finds necessary as game refuges or fish refuges; it may acquire lands or waters by purchase, condemnation, lease, agreement, or gift for forestry purposes, state parks, public hunting or fishing, fish hatcheries and game farms, forest nurseries, or experimental stations. It has the power to sell or exchange lands; to establish and maintain forest protection systems; and to co-operate with any persons, firms, corporations, or governmental agencies for purposes consistent with the administration of the conservation program.

The authority granted by chapter 23.09 W. S. to the Wisconsin Conservation Commission makes its power broad and important. This form of conservation administration is being studied by many states throughout the country.

Organization

It is the policy of the Wisconsin Conservation Commission to meet once a month either in the Capitol at Madison or at some point in the state to consider the problems relating to conservation work and to establish and direct regulatory policies. Meetings are frequently held at various points throughout the state in order that the commissioners may study the many conservation problems of Wisconsin at first hand. The officers of the commission are a chairman and a secretary.

The conservation commission employs a conservation director who is an administrative officer and is responsible to the commission for the operation of the projects inaugurated by the commission or by the several trained men directing the different divisions of the conservation commission. He is the executive officer of the commission. There is a deputy director who acts as assistant and office manager.

Six divisions constitute the working organization of the conservation commission. Each of these, while it has its own distinct functions, correlates its work closely with the other divisions so that the result is an efficiently operated and inter-related group of projects under one director.

The six divisions which constitute the working organization of the commission are: forestry and parks; forest protection; fisheries; game; law enforcement; and education and publications. It is the responsibility of the administrative officer of the commission to correlate the activities of the six divisions so that policies formulated and directed by the commission itself are carried out by the different divisions.

Administrative Activities

First in importance among the activities of the administrative division is the collection and disbursement of funds. Extra care and effort have been expended during the biennium in the collection of moneys due to the commission from its various activities. Prompt settlement of accounts due the commission makes possible additional income from interest earned by money in the conservation fund.

Except for the 1/20 mill tax for forestry purposes, the money from which first became available on March 1, 1930, the entire conservation program in Wisconsin is paid for from moneys earned by the commission in its various activities. Prior to March 1, 1930, there had never been any taxation money spent on the conservation program.

The funds for the conservation commission are received principally from the sale of the several licenses issued by the commission, chief among which are resident hunting licenses and non-resident fishing licenses. There are also trapping licenses, trap tags, and various

kinds of commercial fishing licenses. All of these licenses and tags, even though they are sold to the ultimate user by subsidiary agencies, must be handled through the administrative office at Madison. The actual work entailed in distribution of licenses has been greatly increased during the biennium by the adoption of a new policy that hunters, trappers, and non-resident fishermen must wear license buttons in addition to carrying their licenses. Each of these buttons is numbered serially to correspond to the number on the license.

Another new activity added during the biennium is the issuance of deer farm licenses and game bird farm licenses. With these, as with muskrat, beaver, and general fur farm licenses, all applications must be investigated before the license is issued.

Records are kept in the administrative division of the activities of each of the different divisions. One of the more important records is the complete accounts maintained of all arrests and seizures made by conservation wardens. Complete individual records are kept of each case and of each seizure.

Special Administrative Activities

In addition to the office personnel of the administrative division there is, at times, a field investigator who supplements the work of the office in checking expenditures in the field and in looking after activities in distant parts of the state which are not frequently reached by other officials. This investigator also checks court cases to see that proper remittances are made to the various state funds.

Another and new activity of the administrative division is that represented by the establishment of the predatory animal control division in co-operation with the United States Biological Survey. This predatory animal control is an experiment being carried on in an effort to reduce the amount of money spent by the state each year in payment for bounty claims. For the past two bienniums the amount paid for bounty claims has averaged approximately $80,000 a year.

The 1929 legislature made a small appropriation to carry on this predatory animal control experiment in co-operation with the United States Biological Survey.

The federal government loaned to the state the services of a leader in predatory animal control work who during the last six months of the biennium organized with the State Bureau of Personnel a force of state trappers. The work had not progressed far enough at the close of the biennium to make a detailed report or to draw conclusions as to the effectiveness of this method of control in Wisconsin.

Co-operation

During the past two years the Wisconsin Conservation Commission, through the administrative division, has increased its co-operation with other Wisconsin state departments, with departments having similar or related interests in other states, and with the federal government. During the biennium several meetings have been held with

conservation officials from neighboring states to discuss the codification of game laws, uniformity of opening and closing seasons and bag limits, forest land taxation, and forest protection.

Advisory Council

An advisory council, consisting of a group of persons representing different sections of the state selected because of their interest in conservation matters, was established by the conservation commission at the beginning of the biennium. This council is made up of men and women, and the commission frequently requests information and advice from them in the consideration of new activities and the formation of new policies.

WISCONSIN CONSERVATION DATES

	Chapter	Year
Fish Inspector	77	1866
Commission to Investigate Forestry Conditions	36	1867
Timber Agents	46	1869
Commissioner to Receive Spawn	253	1874
Fish Commissioners	299	1878
Establishment of first State Park	324	1878
Game Wardens	456	1887
Fish Wardens	455	1887
State Fish and Game Warden	436	1891
Commissioners of Fish and Fisheries	221	1895
Chief clerk of land commission made State Forest Warden	266	1895
Commissioners to Plan for Forestry Department	229	1897
Sale of first State Park lands	367	1897
Interstate Park Commission	102	1899
Interstate Park Commission	305	1901
State Department of Forestry	450	1903
Provision for purchasing state forest reserve	450	1903
Commissioners of Interstate Park of the Dalles of the St. Croix	395	1905
State Board of Forestry	264	1905
State Forester	264	1905
State Park Board	495	1907
Superintendent of Fisheries	548	1907
First Conservation Commission	644	1911
Adverse Supreme Court forestry decision		1915
Second Conservation Commission	406	1915
Third Conservation Commission—Conservation Commissioner	118	1923
Fourth Conservation Commission	426	1927

DIVISION OF FORESTRY AND PARKS

FORESTRY

Introductory

Progress has been made in practically every phase of forestry during the biennium. While the legal basis for both public and private forestry had been built up during the past decade, much constructive forestry legislation was passed by the legislature of 1929 largely because of the work of the Joint Interim Committee on Forestry.

The forest crop law which was amended for better administration is now regarded as the most successful state law of its kind. Registration under this act has grown to 300,000 acres in three years, which exceeds the acreage in other states with similar laws although some of these have been in effect for many years. Outstanding private forestry projects have been undertaken by several wood-using industries to provide future raw material supplies for their mills. Such permanent industries will provide employment and pay taxes after other mills have shut down for lack of timber supplies.

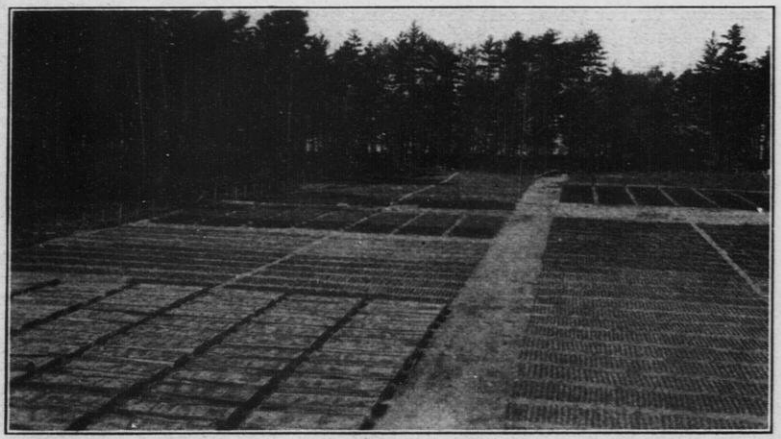
The authorization for federal purchase of land for forestry up to a million acres will enable the United States Forest Service to assume a considerable part of the task of restoring Wisconsin's forest wealth. Lands have already been acquired in the older areas and a considerable acreage was reforested during 1930.

For the first time a definite tax for forestry as authorized by the constitutional amendment of 1924, was provided by the legislature. This act carried the levy of 1/20 of a mill on the taxable property of the state and yielded $294,821.58. The appropriation act relating to forestry was changed so that all forestry costs are now chargeable to this fund. Heretofore, the greatest part of the forestry work was supported from the conservation fund, derived chiefly from receipts for resident hunting and non-resident fishing licenses. The mill tax for forestry is an annual levy and will do much to stabilize and strengthen the forestry work of the state. The first appropriation had to cover a period of 20 months from July 1, 1929 to March, 1931 which curtailed some activities and delayed others.

The commission was also given authority to sell or exchange state forest lands for the purpose of building state forests.

Because in Wisconsin, unlike most states, tax delinquent lands revert to the county, practically all northern counties are acquiring large areas of tax delinquent lands. The following legislation was passed to give county boards needed authority to cope with the problems growing out of tax delinquency:

(a) The procedure for establishing county forests was simplified.
(b) Counties were authorized to exchange lands to block county forests.
(c) The county zoning law was amended to include zoning for agriculture, forestry and recreation.
(d) A serious obstacle to the taking of tax deed by counties was removed. Previously, payment of taxes to the town was required at the time of taking deed, but the law was amended to defer such payment until the land or timber from the land was sold and the liability of the county is limited to the sums thus received.



Section of Trout Lake Nursery.

State Forestry Activities

The state forest nursery located at Trout lake in Vilas county has continued to produce forest planting stock both for planting on state land and for sale to private interests for forest planting. Order blanks for these seedlings, stating prices and terms, may be secured on request from the conservation commission.

The following table shows the stock shipped from the state nursery for private planting each year from 1914 to 1930:

STATE NURSERY SHIPMENTS FOR PRIVATE PLANTING 1914–1930

Year	No. of Trees	Year	No. of Trees
1914	20,200	1923	177,300
1915	77,400	1924	246,800
1916	110,200	1925	350,500
1917	272,900	1926	854,000
1918	173,100	1927	1,038,000
1919	205,100	1928	1,132,000
1920	206,600	1929	1,392,000
1921	199,400	1930	1,184,700
1922	43,100		

In 1929 for the first time, seedlings were shipped from the state forest nursery to every county in the state.

Planting

Reforestation on state forest lands was expanded during the biennium, two portable field planting camps were constructed and two tractors were acquired for plowing furrows. The acreage planted in both 1929 and 1930 exceeded that of any preceding year. Planting plans for 1930 called for a still greater acreage, but the continued drought delayed the date when fall planting could begin, thus shortening the fall planting season. During the biennium approximately 2,250,000 trees were planted on state land.

Norway Pine Plantation in Peninsula State Park. Fifteen years old.

Examination of the state forestry lands showed that a large proportion has good stands of second growth because these areas have received protection from fire since 1911.

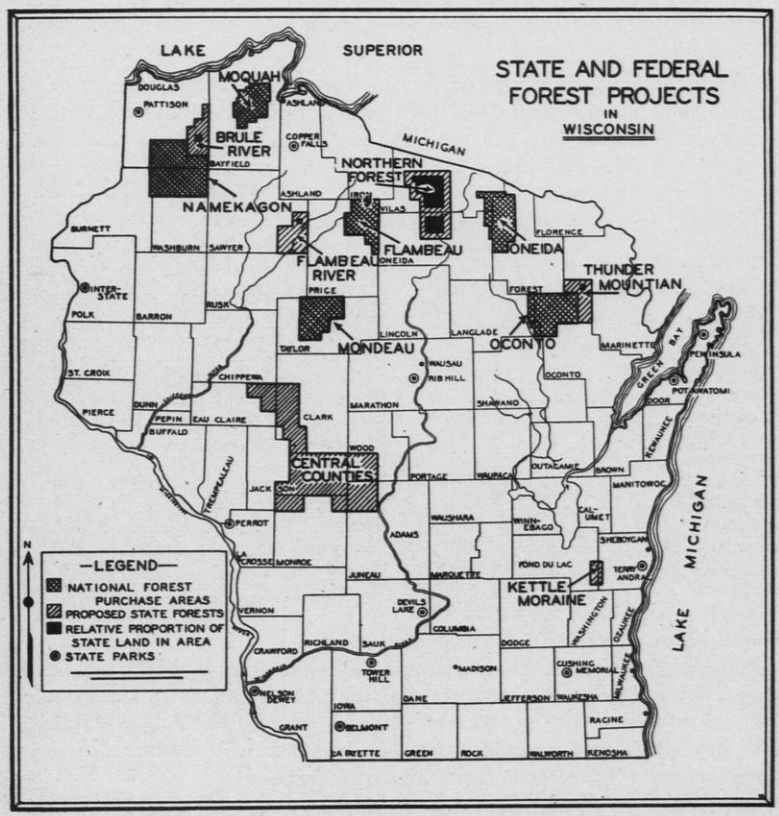
Co-operative Projects

The co-operative agreement with the University of Wisconsin for extension work was continued. This work was largely with farmers and other small land owners. Some of the earliest farm plantations can now be used as demonstration areas for furthering this work. Forest planting and wood lot improvements were continued and several bulletins were prepared.

The junior forest ranger project, administered by the boys and girls club department of the College of Agriculture was expanded and

the commission supplied free seedlings for forest planting to these boys. The summer camp for leading boys was conducted at the Wildcat lake ranger station both in 1929 and 1930, and all needed facilities of the commission were made available for this course. The commission likewise co-operated with the Boy Scouts in conducting an instruction camp near Trout lake.

Co-operation with the Lake States Forest Experiment Station was continued and the commission provided men for the field work on



several research projects. Likewise the commission co-operated with the land economic survey of the department of agriculture and markets during the biennium. This survey covered several areas in which the state is the chief land owner as in Vilas and part of Oneida county, and also in parts of Ashland and Sawyer counties.

The co-operation with the Commissioners of Public Lands, seeking better protection of all state owned lands, has been continued. Practically all of the trust fund lands are located within forest protection districts, and state rangers are charged with protecting these lands

both from fire and from timber trespass. The jurisdiction of the Commissioners of Public Lands and of the conservation commission over the various classes of state owned land has been more sharply defined both by legislative act and by opinions of the attorney general's office.

The Forest Crop Law

Since timber is legally part of the land, it is taxed as real estate under the general property tax. But where land is used to grow timber the timber is actually the crop or income. The forest crop law provides for registry of lands used for forestry, taxing the land annually and the timber or crop once when it is cut and the income is realized.

Owners who enter lands under the forest crop law follow forest management plans which must be approved by the conservation commission. Provision is made for rejecting lands when the owners fail to carry out adequate plans for growing timber.

FOREST CROP LANDS—JUNE 1930

County	Acres	County	Acres
Ashland	22,436.90	Marathon	9,778.44
Bayfield	10,985.84	Marinette	14,860
Barron	960	Oconto	2,920
Burnett	1,725.53	Oneida	27,432
Chippewa	16,480	Polk	1,320
Clark	4,037.20	Price	28,005.29
Douglas	3,080	Rusk	15,901.17
Eau Claire	3,480	St. Croix	92.50
Florence	3,040	Sawyer	19,828.15
Forest	48,060	Shawano	406
Iron	5,880	Taylor	1,400
Jackson	160	Vilas	4,603.24
Juneau	160	Waupaca	226
Langlade	12,789.22	Washburn	6,480
Lincoln	9,390.82	Wood	4,899.08

County Forests

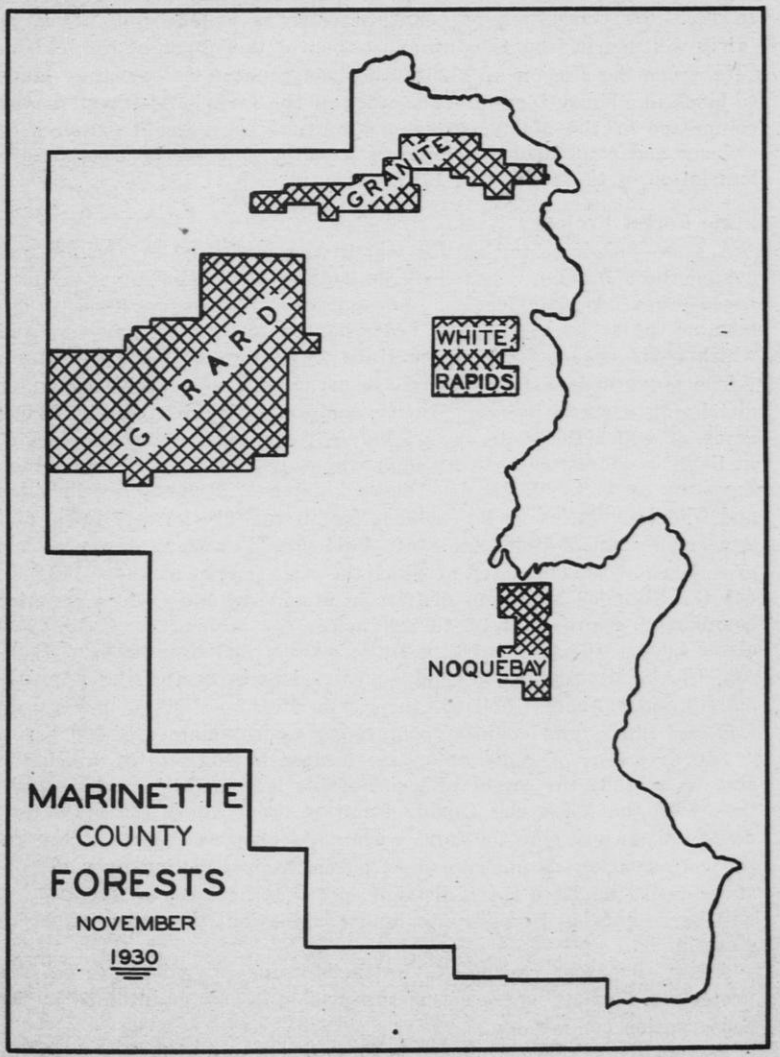
The legislature of 1927, realizing that counties were acquiring land through non-payment of taxes, and that these lands were valuable primarily for forestry, authorized counties to establish county forests. The procedure was simplified by the legislature of 1929 and additional counties have authorized county forests.

The forest crop law was amended in 1929 making it possible for counties to enter forest land under the law and further exempted them from paying the owners' share of 10 cents per acre. The state, however, will pay 10 cents per acre per year which goes to the towns and will collect the 10 per cent severance tax when timber is cut, as with other owners.

This 10 cents per acre to the towns provides an incentive for the entry of county forests under the forest crop law. The commission has pointed out, however, that its interest is not primarily to provide state funds for the towns, but in establishing county forests under

the provisions of a law which will aid the local tax situation while the forests are being restored.

The Joint Interim Committee on Forestry, in its report to the legislature of 1929, recommended (first paragraph, page 38) that the conservation commission work with the county authorities in the selection, care, and improvement of their county forests. This the commission has endeavored to do. Langlade, Marinette, Rusk, and Wash-



Marinette county owns 88,193 acres, or 55½ per cent of the land within the boundaries of these forests.

burn counties have already entered land under the forest crop law. Of these, Marinette county must be credited with the greatest progress, having recently established and designated by name four county forests in which the county holdings total 88,193 acres. All of this will be under the forest crop law next year.

The commission feels that county forest lands entered under the forest crop law should consist of reasonably well blocked lands rather than all scattering descriptions which may have reverted to the county. In fact, the conception of county forests as considerable areas of fairly well blocked lands is an expression of the intent of the legislature, since the session of 1929 authorized counties to exchange lands to block up county forests. The work of the farm and forest survey committee of the Marinette county board is a splendid example of orderly and controlled development growing out of the constructive legislation of the session of 1929.

State Forest Project

A state-wide forestry survey which was conducted by the division during the biennium, resulted in the definite establishment of six proposed areas for state forests. The purpose of the survey was to determine the areas in the state best adapted to forestry purposes and which could be acquired by the state without excessive expenditure.

The six proposed forest purchase areas are: (1) the Brule river district in eastern Douglas county comprising approximately 92,000 acres, of which the state owns 5,600; (2) the Flambeau river district in Sawyer county comprising approximately 100,000 acres, of which the state owns 4,800; (3) the district north of Rhinelander in Vilas and Oneida counties which includes Northern Forest State Park, and American Legion Memorial State Park and Forest Preserve with a gross area of 265,000 acres, of which the state now owns about 140,000; (4) the Thunder Mountain district in Marinette and Oconto counties comprising approximately 190,000 acres, of which the state owns about 4,000; (5) the central counties district including parts of Jackson, Clark, Monroe, Wood, and Juneau counties comprising approximately 350,000 acres; and (6) the Kettle Moraine district in Fond du Lac and Sheboygan counties comprising approximately 50,000 acres.

The first four of these areas are located in districts of which the state is already the owner of considerable land. This is particularly true with the Vilas and Oneida counties tract where the state now owns the majority of the land within the proposed area. Although the conservation commission does not have jurisdiction over all the state owned lands in these districts, putting the land to forestry use will be acceptable to the state land commission, the other owner of state lands.

All of the areas except the Kettle Moraine are within forest fire protection districts where actual supervision is now maintained by the conservation commission.

Setting aside these proposed state forest areas is in line with the instructions of the people in the state expressed in the forestry referendum of 1924 which directed the conservation commission to "acquire,

preserve, and protect" the forests of the state. It will be made possible by the action of the last legislature in providing funds by the 1/20 mill tax which is to be used for forestry and reforestation purposes.

The land included within these proposed state forests, while primarily set aside for forestry, will also serve the public as recreational, hunting, and fishing grounds. All areas set aside for forestry in Wisconsin will be administered to give the maximum benefit to the people of the state at the present time without impairing the value of the lands as future forests.

Acreage of State Forest Plantings

Year	Acres Planted	Total Output of Forest Nursery
1911	159	
1912	8	
1913	99	
1914	490	
1915	No planting	done
1916	49	300,000
1917	337	700,000
1918	425	850,000
1919	315	500,000
1920	99	350,000
1921	220	450,000
1922	109	130,000
1923	140	350,000
1924	121	400,000
1925	136	500,000
1926	415	1,200,000
1927	635	1,600,000
1928	654	1,700,000
1929	940	2,400,000
1930	1,221	2,400,000
Total acres planted	6,572	13,830,000

Output of State Forest Nursery in 1929

Species	For Private Plantings	For State Plantings
White Pine	504,035	93,500
Norway Pine	550,760	511,000
Jack Pine	165,250	401,000
Scotch Pine	47,585	7,750
White Spruce	102	
Norway Spruce	124,560	9,500
Blue Spruce	975	
Total	1,393,267	1,022,750 2,416,017

Output of State Forest Nursery in 1930

Species	For Private Plantings	For State Plantings
White Pine	407,600	90,000
Norway Pine	450,850	640,000
Jack Pine	43,100	415,500
Scotch Pine	73,150	9,000
White Spruce	30,650	
Norway Spruce	179,350	67,000
	1,184,700	1,221,500
Total		2,406,200
Total for biennium		4,822,217

Inventory of Stock in Trout Lake Nursery

Fall of 1929

TRANSPLANTS

Species	Age	Height in Inches	Amount	
White Pine	2—1	2″— 3″	130,000	
White Pine	2—2	5″— 8″	260,000	
Scotch Pine	2—2	2″— 4″	9,000	
Norway Pine	2—1	2″— 4″	95,000	
Norway Pine	2—2	6″—10″	80,000	
Norway Spruce	2—1	2″— 4″	197,000	
Norway Spruce	2—2	4″—11″	290,000	
Jack Pine	2—1	5″—10″	89,000	
Total			1,150,000	1,150,000

SEEDLINGS

Species	Age	Height in Inches	Amount	
White Pine	1—0		480,000	
White Pine	2—0	2″— 3″	1,030,000	
White Pine	3—0	3″— 6″	350,000	
Norway Pine	1—0		1,120,000	
Norway Pine	2—0	2″— 3″	1,300,000	
Norway Pine	3—0	4″— 7″	630,000	
White Spruce	1—0		520,000	
White Spruce	2—0	2″— 4″	350,000	
White Spruce	3—0	3″— 7″	320,000	
Norway Spruce	1—0		160,000	
Norway Spruce	2—0	2″— 4″	425,000	
Norway Spruce	3—0	3″— 8″	360,000	
Scotch Pine	1—0		160,000	
Scotch Pine	2—0	2″— 3″	210,000	
Jack Pine	1—0		720,000	
Jack Pine	3—0	5″—10″	180,000	
Total			8,315,000	8,315,000
Total Inventory of Nursery				9,465,000

Inventory of Stock in Trout Lake Nursery

Fall of 1930

TRANSPLANTS

Species	Age	Height in Inches	Amount	
White Pine	2—1	2"— 3"	**76,000	
White Pine	2—2	5"— 8"	130,000	
White Pine	2—3	6"—12"	80,000	
Scotch Pine	2—1	2"— 4"	**72,000	
Norway Pine	2—1	2"— 4"	**139,000	
White Spruce	2—1	2"— 4"	**122,000	
Norway Spruce	2—1	2"— 4"	**121,000	
Norway Spruce	2—2	4"—11"	132,000	
Norway Spruce	2—3	6"—14"	145,000	
Total				1,017,000

SEEDLINGS

Species	Age	Height in Inches	Amount	
White Pine	1—0		**500,000	
White Pine	2—0	2"— 3"	480,000	
White Pine	3—0	3"— 6"	832,000	
Norway Pine	1—0		**950,000	
Norway Pine	2—0	2"— 3"	1,120,000	
Norway Pine	3—0	4"— 7"	909,000	
White Spruce	1—0		**275,000	
White Spruce	2—0	2"— 4"	460,000	
White Spruce	3—0	3"— 7"	350,000	
White Spruce	4—0		**85,000	
Norway Spruce	1—0		**320,000	
Norway Spruce	2—0	2"— 4"	160,000	
Norway Spruce	3—0	3"— 8"	425,000	
Norway Spruce	4—0		**40,000	
Scotch Pine	1—0		**110,000	
Scotch Pine	2—0	2"— 3"	160,000	
Scotch Pine	3—0	6"— 8"	**18,000	
Jack Pine	1—0		**580,000	
Jack Pine	2—0	3"— 4"	720,000	
Total				8,494,000
Total Inventory of Nursery				9,511,000

**Trees that should not be listed for distribution.

FOREST PROTECTION—1929

Introductory

The fire season of 1929 was one of unbroken hazard, rising during the middle of August and into September to an extremely dangerous degree. The break-up in the spring came relatively early. April was warm and dry, and May was cold, dry, and very windy. Vegetation was slow in greening out. The normal late summer rains failed to materialize. August was very dry. Low humidity prevailed for days at a time and supplemented by continuous hot, dry southwest winds developed several very dangerous dry times. The precipitation for the year was more than two and one-half inches below normal.

Under such weather conditions it is not surprising that the number of fires increased greatly. Fires reported totaled 960. This is more than double the number of fires reported for 1928 and far exceeds the average number reported during the past five years. The number of acres burned over exceeded 100,000, which is also above the five-year average. As usual, under such weather conditions, most of the area burned over was from relatively few fires which got away and ran over large areas. About one per cent of the fires accounts for the burning over of approximately half of the total area, and these fires were largely in grass or sweet fern country on which comparatively little tree growth was found. In one area a relatively large fire burned over land covered with a heavy growth of timber slash. The late summer fire season was a difficult one, the soil being so dry. A condition developed where fires could scarcely be put out except by soaking rains.

The season cannot be considered as anything but a bad year. During periods of from several days to as long as three weeks, the risk from fires could not have been very much worse. The diligence of the field force is proven by the fact that most of the fires were held to relatively small areas. The effects of the forest protection effort of the past few years was noticeable in the older fire districts in the behavior of the local people during these dry times with the use of fire. There are still some evidences of carelessness with the use of fire in many neighborhoods, especially with the burning of marshes and the burning over of blueberry land in the central counties. If it had not been for the steady effort of the district forest rangers and their associates, supported by constructive aid from citizens, the area burned would have been much greater. The woods and weather conditions were just right for widespread burning, not only once, but a number of times during 1929.

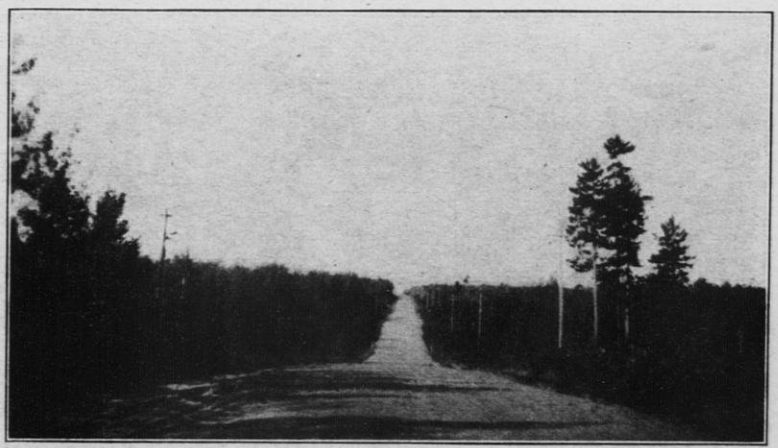
During the past five years slash-covered areas have increased until there is not less than 300,000 acres now existing in the northern

counties, and this area is being added to yearly. Extending the forest protection work into the marsh areas of central Wisconsin has added an area of considerable risk. The custom of burning these marshes annually is a serious hazard.

Progress During 1929

The construction work during 1929 was slowed down by the continuous need to fight fires. However, the area under protection was increased by the definite addition of District No. 10. At the beginning of 1929 twelve and one-half million acres were under protection. At

Picture taken immediately after a fire in 1911. Northern Forest State Park road.



Same view taken in 1930 showing effects of 19 years of forest protection.

the end of 1929 thirteen and one-half million acres were under protection, an increase of one million acres.

The equipment in the various districts was increased as follows: 12 new lookout towers were erected; two were replaced; practically all open lookouts were enclosed; one ranger headquarters (Friendship) completed; one sub-station (Mercer) completed; metallic circuit state-owned telephone line increased by 76 miles; ground circuit state-owned telephone line increased by 29 miles; state wire on rented poles increased by 51 miles. There were 2,100 roadside signs replaced, including 415 new wooden signs. The transportation facilities were increased at the end of the season by the addition of 12 one and one-half ton trucks and 11 light pick-up cars.

Considerable repair work was done such as tightening, repairing and brushing out telephone lines; painting and repairing equipment; and improving the district ranger headquarters. Eighty-six active state-owned lookout towers now comprise the fire detection system. Improvements were also made in the methods of keeping records and the enforcement of the burning permit law.

Public Relations

As indicated heretofore, the attitude of the local people on the forest fire question had a real test the past season. While in a number of cases a break-down occurred, the prevailing attitude was very encouraging. With a dangerous dry time at hand there was a noticeable interest on the part of all citizens and companies to use extreme care with fire in the woods. A recognition of the burning permit law was in evidence in all districts. Approximately 1,500 burning permits were issued during the season in one district alone. Very few cases of complete lack of co-operation on the part of the local citizens occurred. The people and companies of the upper counties realized the benefits to be derived from protecting the country from uncontrolled fires and are guided accordingly.

FOREST PROTECTION DISTRICTS

Personnel—Equipment, 1929

Forest District No.	1	2	3	4	5	6	7	8	9	10	11	Total
Seasonal men in field	5	1	3	4	2	3	3	3	1	1	2	28
Emergency men in field	66	60	60	5	28	39	50	36	45	6	28	423
Telephone lines in miles												
State owned metallic	2		45	2	51	3	21	20	12			156
State owned ground	95	60	202	47	75	17	6	15	74	10	12	613
State wire rented poles	8		15	37		60	1		17	24	4	166
Lookout Towers												
Erected 1929	1	1	1				3		4	2		12
Previously erected	8	6	10	7	9	8	4	9	4	4	5	74
Co-op lookouts			1			1			3		1	6
Evinrude Pumps	2	2	3	2	2	3	3	1	2	1	1	22
Hose in Feet	1,500	1,500	2,400	2,000	5,000	2,250	1,700	1,000	2,000	1,000	925	21,275
Telephone poles used	3,040	2,040	7,716	1,667	3,800	672	902	1,225	3,185	400	480	25,127
Trucks	4	3	5	3	3	3	3	3	3	3	3	36
Shovels	500	525	1,200	500	760	790	240	630	275	150	450	6,020
Axes	40	30	60	25	70	51	40	100	40	60	46	562
Pails	200	100	120	125	220	212	25	250	25	60	60	1,397
Pyrene Cans	25			9	30	2		2				68
Smith Fire Pumps	100	120	100	116	148	108	150	150	60	50	71	1,173
Saws	2	3	12	1	2	3	13	5	18	5	4	68
Trailers	1		2	1	1	2	2	1	2			12
Tanks	1	1	1	2	2	1	1	2	2	1	1	15
Lanterns	24		30	40	84	54	25	60	22	18	23	380
Back Fire Torches	100	100	50	60	60	59	37	50	52	60	50	678
Tool Boxes	30	12	66	19	30	41	38	30	18	12	5	301
Buildings	7	1	9	2	1	1	1	3	2	1	1	29

SUMMARY OF FOREST AND MARSH FIRES FOR THE YEAR 1929 AS REPORTED BY DISTRICT FOREST RANGERS

District	No. of Fires	% of Total Fires	Acres Burned	Acreage burned per fire	Reported Damage
1	104	10.9	28,660	276	$13,327.00
2	138	14.4	7,999	58	5,325.00
3	62	6.5	1,316	21	1,718.00
4	47	4.8	4,400	93	7,523.00
5	126	13.1	4,608	37	3,218.00
6	91	9.4	2,890	32	6,652.00
7	169	17.6	6,191	36	3,874.00
8	26	2.7	504	19	1,001.00
9	103	10.7	21,721	228	20,904.00
10	11	1.2	5,847	531	6,000.00
11	83	8.7	19,752	238	3,228.00
Total	960	100%	103,888	108	$72,770.00

FIRE BY CAUSES

Dist.	Lightning	R. R.	Logging	Clearing	Camp Fires	Smokers	Incendiary	Misc.	Unknown	Total
1	1	14		11	4	38	1	2	33	104
2		7	8	60	8	21	23	11		138
3	1	14		9	10	9			19	62
4		3	5	7	5	4		3	20	47
5	12	33			5	29	2	7	38	126
6		10	1	17	17	29	1	4	12	91
7		9	3	64	13	29	19	6	26	169
8		4		8	1	12	1			26
9		12	1	21	14	13	13	6	23	103
10		2		1	1		5		2	11
11	1	2		13	10	33	2		22	83
Total	15	110	18	211	88	217	67	39	195	960

FIRE BY MONTHS

District	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1		9	41	6	6	25	10	7	
2	1	28	47	12	8	15	10	17	
3		10	25	5	4	13	3	2	
4		14	9	3	1	5	14	1	
5	1	31	36	18	6	10	14	9	1
6		11	32	9	2	15	10	12	
7	2	32	61	5	3	23	20	23	
8		1	10	3		1	7	4	
9		24	28	9	2	6	16	18	
10						5	1	4	1
11	3	12	22	9	8	9	11	7	2
Total	7	172	311	79	40	127	116	104	4
Per cent	.7	17.9	32.4	8.3	4.2	13.3	12.	10.8	.4

FIRES BY AREA CLASSES

1929

District	A Under ¼ acre	B ¼ to 10 acres	C 11 to 100 acres	D 101 to 500 acres	E 500 acres and over
1	2	37	49	11	5
2	3	59	60	15	1
3	7	26	26	3	
4		18	19	9	1
5	12	56	52	5	1
6	3	37	42	9	
7	1	34	123	10	1
8	1	13	11	1	
9	1	32	50	15	5
10		1	8		2
11		26	23	27	7
Total	30	339	463	105	23
Per cent	3.1	35.3	48.4	10.9	2.3

COSTS AND AREAS BURNED

Year	Total Cost of Protection	Area Under Protection in Millions Acres	Cost per Acre in Cents	No. of Fires	Area Burned Over	Acreage Per Fire	% of Area Burned	Damage
1924	$ 32,688.63	3.0	1.09	248	76,466	309	2.5	$29,056
1925	57,978.44	7.2	.8	415	273,084	660	3.8	403,560
1926	81,151.96	7.2	1.13	238	84,535	359	1.2	209,170
1927	98,617.81	8.6	1.15	229	12,193	53	.14	9,452
1928	137,751.90	12.5	1.1	430	44,139	103	.35	27,627
1929	164,660.28	13.5	1.22	960	103,888	109	.77	72,770

EXPENDITURES

Year	Contributed by State	Contributed by Federal Government	Contributed by Counties	Total Cost of Protection
1929	$110,939.71	$38,137.40	$15,583.17	$164,660.28

ALLOTMENT OF EXPENDITURES

Year	Administrative Expense	Field Personnel	Equipment and Improvements	Fire Fighting	Total Cost
1929	$3,000.00	$77,645.51	$52,848.40	$31,166.37	$164,660.28

FOREST PROTECTION—1930

Introductory

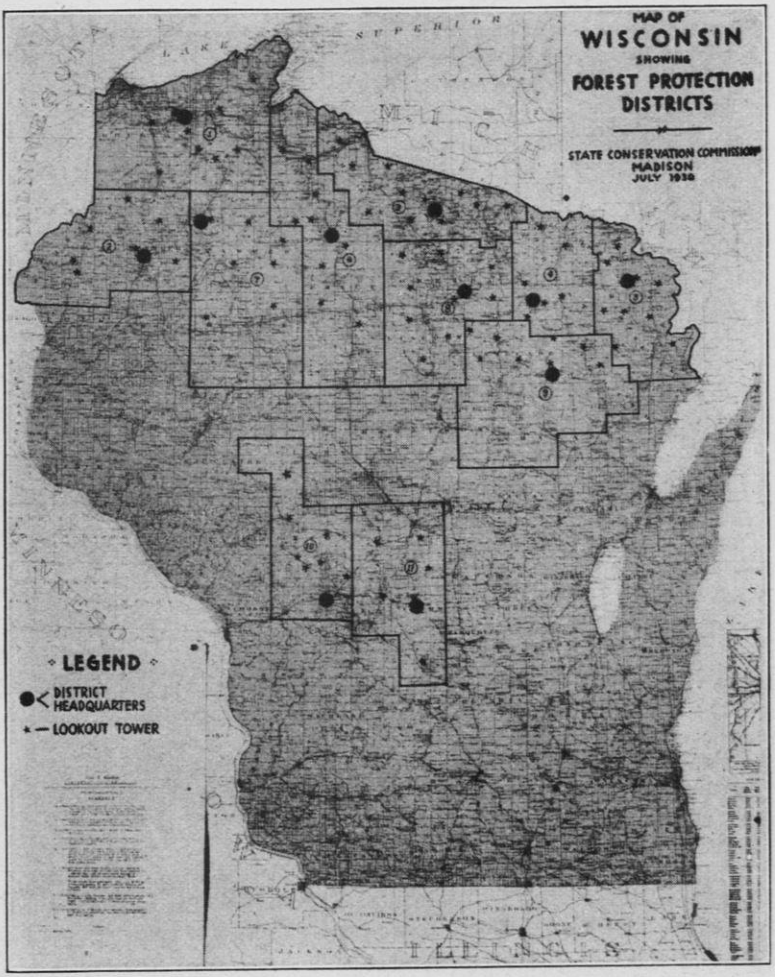
Wisconsin has just gone through the most extreme fire hazard which the state has experienced since 1894. Added to the precipitation shortage of 1929 was a very light snowfall during the winter. An unusually early spring break-up brought grass fires before the end of February, an unheard-of occurrence. The shortage of precipitation was shown by the low stage of water in streams and storage reservoirs. Hydraulic power plants were conserving water in the spring, whereas normal years bring spring floods and the wasting of water at power dams. Swamps were without water and soon became dry enough to burn. Normally, swamps serve to stop fires, but this year swamps burned worse than uplands.

The fire risk remained unbroken, for occasional rains were not sufficient to overcome the cumulative shortage of moisture. The dry soil quickly absorbed the rain, and clear weather and southwest winds dried out the vegetation. Special fire weather telegraphic reports from the weather bureau continually warned of low relative humidity and high fire hazard. Instead of decreasing during the summer, the risk continued to increase and by August the situation was acute. A study of fire hazard in Wisconsin made by the Lake States Forest Experiment Station reveals that there are 540,000 acres of logging slash less than five years old. Normally, the heavier soils on which this hardwood slash is found do not dry out as readily as the sandy pine lands. But this year due to the prolonged drought, the hardwood slash areas were fully as dry as the sand areas and there was more fuel on the ground. The hardwood slash areas and the swamps constituted the most dangerous areas in 1930.

Reports from the forest protection districts show that more fires occurred in 1930 than in any previous year since organized forest protection began. Of course, the area under protection was larger than ever before, but the number of fires is primarily a result of the high hazard conditions. The fire in the drained marsh area of Wood, Juneau, and Jackson counties is also the largest fire on official record, totaling 120,000 acres, or more than the total burned acreage reported in 1929, which was considered a bad year.

Drought and wind made fire fighting very difficult this year. The humus of the soil continued to burn after the fires were checked and the wind fanned the embers into flame, making it necessary to patrol fires long after they were under control. Consequently equipment

became scattered and was not always quickly available when new fires were reported. The motor pumps were not as effective as in other years because water holes and small streams were dry. Altogether, the rangers and their assistants carried a heavy burden under most discouraging conditions.



In the face of this situation 102 fires were extinguished before they reached one-fourth of an acre in area, 664 fires were held to less than 10 acres, and 929 to less than 100 acres. Only 26.4 per cent of the fires exceeded 100 acres. A few very large fires account for the high figure of 224 acres burned per fire.

In spite of this exceptionally high figure, the field force must be credited with doing a creditable piece of work. No lives were lost and loss of improvements by settlers was low. What would have happened in 1930 without a protection organization is not a pleasant subject to contemplate.

Payment of Fire Fighters

Prompt payment of men hired to fight fire has always been a problem since the beginning of the project. In a year of many fires most of the fire fighters are employed by emergency wardens, many of whom are better at directing fire fighting than at making out payrolls. After payrolls are received by the ranger, he must take the information for his records before sending them in. Often he must make corrections which require checking in the field. And during prolonged periods of fire both emergency wardens and rangers will neglect payrolls to fight fire.

The severe fire season necessitated the employment of extra clerks in the commission office to prepare payrolls. During the season nearly 20,000 checks were sent out to fire fighters. An organization built up to meet the needs of the usual serious fire season was forced to carry an excessive load in 1930.

Construction and Improvements

Construction and improvements are usually left for periods of low fire hazard when the field force can profitably be used for such work. Most of the new equipment is normally purchased after the season is advanced far enough to show that funds may safely be used. Both the work and the expense of fire fighting have prevented much improvement during the past season. The remaining open lookout towers were enclosed and two new towers were erected. In District No. 3, including Vilas and Oneida counties, it was necessary to convert the ground circuit telephone system to a metallic circuit because of the erection of electric transmission lines in this territory. Telephone connections were provided for three towers during the season and the construction of a commercial line in Adams county improved the fire reporting service in District No. 11.

Public Relations

Following the appointment of a chief forest fire warden in May, there was little opportunity for other than fire fighting activities. After the large fire in Wood, Juneau, and Jackson counties a meeting of the emergency wardens and others who had supervised crews, was held to straighten out the tangled payrolls which had resulted from shifting men from one sector to another on the 97 mile front.

Since October the chief fire warden has met with one county board committee and six county boards. There is obvious need for closer contact with county authorities because the counties are required to pay half of the direct fire fighting costs. It is planned to work out

some of the questions which have arisen by meeting with the conservation committees of the county boards. The recent organization of the Inter-county Conservation Association offers an opportunity to work with an official and interested group on problems which are of more than local application.

Plowing a fire line. Marengo fire, 1930.

SUMMARY OF FOREST AND MARSH FIRES FOR THE YEAR 1930 AS REPORTED BY DISTRICT FOREST RANGERS

District	No. of Fires	Per cent of Total Fires	Acres Burned	Acreage burned per fire	Reported Damage
1	162	7.0	36,050	223	$28,878.20
2	194	8.4	22,304	115	19,040.00
3	128	5.5	9,072	71	10,159.50
4	151	6.6	40,969	271	14,000.00
5	265	11.6	38,815	146	19,605.40
6	296	12.9	47,100	159	43,340.00
7	299	13.0	36,130	121	33,370.00
8	141	6.1	23,620	168	21,155.50
9	291	12.7	83,325	288	69,055.00
10	162	7.0	76,756	474	60,800.00
11	211	9.2	99,705	473	141,225.00
Total or Average	2,300	100%	513,856	223	$460,627.60

FIRES BY CAUSES

District	Lightning	R.R.	Logging	Clearing	Camp Fires	Smokers	Incendiary	Misc.	Unknown	Total
1		9	1	27	15	52	5	8	45	162
2	1	13		100	13	19	25	15	8	194
3	4	9		12	24	15	11		53	128
4	4	6		14	12	18	62	20	15	151
5	1	20	1	16	8	75	11	22	111	265
6	7	18	11	73	16	99	30	13	29	296
7		17	7	118	19	51	42	15	30	299
8	4	17		27	6	84	3			141
9	3	6	3	46	10	16	5	2	200	291
10		18		36	13	10	12	2	71	162
11		17		19	18	68	20		69	211
Total	24	150	23	488	154	507	226	97	631	2,300
Per cent	1.1	6.5	1.0	21.0	6.7	22.1	9.8	4.2	27.0	100%

FIRES BY MONTHS

District	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.
1		40	20	9	2	62	26	1	2
2	21	106	9	2	10	23	20	2	1
3		21	12		4	64	23		4
4		57	12	6	2	33	31		10
5	2	80	30	15	21	55	43	5	14
6	5	133	17	7	6	64	52	2	10
7	10	151	15	10	4	68	28	5	8
8	1	56	18	2	4	32	22		6
9		72	37	12	10	78	70	1	11
10	9	77	8	7	7	23	17	1	13
11	27	81	17	9	11	31	12	12	11
Total	75	874	195	79	81	533	344	29	90
Per cent	3.3	38.0	8.4	3.4	3.5	23.2	15.0	1.3	3.9

FIRES BY AREA CLASSES

1930

District	A Under ¼ acre	B ¼ to 10 acres	C 11 to 100 acres	D 101 to 500 acres	E 500 acres and over
1	2	54	60	35	11
2	21	37	80	39	7
3	21	65	25	15	2
4		23	69	40	19
5	5	106	96	33	25
6	9	112	123	35	17
7	14	90	152	29	14
8		42	72	19	8
9	16	65	106	55	49
10	1	31	61	44	25
11	13	39	85	57	17
Total	102	664	929	401	204
Per cent	4.4	28.8	40.4	17.4	9.0

COSTS AND AREAS BURNED

Yr.	Total Cost of Protection	Area under Protection in Millions Acres	Cost per Acre in Cents	Number of Fires	Area Burned Over	Acreage per Fire	Per Cent of Area Burned	Damage
1924	$32,688.63	3.0	1.09	248	76,466	309	2.5	$29,056
1925	57,978.44	7.2	.8	415	273,084	660	3.8	403,560
1926	81,151.96	7.2	1.13	238	84,535	359	1.2	209,170
1927	98,617.81	8.6	1.15	229	12,193	53	.14	9,452
1928	137,751.90	12.5	1.1	430	44,139	103	.35	27,627
1929	164,660.28	13.5	1.22	960	103,888	109	.77	72,770
1930	312,855 22	13.6	2.3	2300	513,856	223	3.8	460,627

EXPENDITURES

Year	Contributed by State	Contributed by Federal Government	Contributed by counties	Total Cost of Protection
1929	$110,939.71	$38,137.40	$15,583.17	$164,660.28
1930	183,131.35	43,783.43	85,940.44	312.885.22
Total	$294.071.06	$81,920.83	$101,523.61	$477,515.50

ALLOTMENT OF EXPENDITURES

Year	Administrative Expense	Field Personnel	Equipment and Improvements	Fire Fighting	Total Cost
1929	$3,000.00	$77,645.51	$52,848.40	$31,166.37	$164,660.28
1930	6,857.32	103,112.49	31,034.52	171,880.89	312,855.22
Total	$9,857.32	$180,758.00	$83,882.92	$203,047.26	$477,515.50

STATE PARKS

Introductory

Wisconsin was the first state to show an official interest in the acquisition of state parks. The first action was taken in 1878 when the legislature created what was known as "The State Park" containing 50,000 acres of timber lands in what was then Lincoln county. This park existed for 19 years but met a sad fate in 1897 when through legislative action the lands were sold to lumber companies. Part of the same area was later repurchased after the timber had been cut, and is now contained in Northern Forest State Park in Vilas county.

Just thirty years ago the state made a new beginning in acquiring state parks and since that time 16 areas varying in size from two acres to 150,000 acres and representing practically every type of scenic beauty and wild life peculiar to the Middlewest have been set aside as state parks.

The appointment of a committee in 1899 by Governor Edward Scofield to investigate park possibilities of the St. Croix river region in Polk county was the first official act in the new movement. Acquisition of lands in this area began in 1900 and a park was established the same year in co-operation with the State of Minnesota which established a park on the opposite side of the river. The areas on both sides of the river are known as Interstate Park.

The legislature of 1907 created the first state park board which reported to Governor James O. Davidson in favor of establishing a state park system. During the next few years two additional parks were acquired—Devil's Lake State Park in Sauk county and Peninsula State Park in Door county.

In 1913 the State Board of Forestry co-operated with the State Park Board to develop and improve the parks. One forester and several rangers were furnished by the State Board of Forestry to locate and construct roads and trails within the parks and prepare maps of the areas.

On July 1, 1915 the state park board, the state board of forestry, the fisheries commission, and the state game warden department were consolidated to form the conservation commission. Since 1915 administration of the constantly increasing number of state parks has been under the jurisdiction of the conservation commission.

Value of State Parks

State parks serve a very definite purpose in the complicated life of modern America. They provide playgrounds and vacation lands for all of the people. They furnish places for the casual afternoon picnic

Wisconsin State Parks

Name of Park	Location	Size (Acres)	How Acquired	Year Estab.	Address of Park Superintendent	How Reached	
						Highway	Railroad
Interstate	Polk	580	Purchase	1900	St. Croix Falls	35, 8, 87	Soo N. Pacific
Brule	Douglas	640	Gift	1906	Brule	2	N. Pacific D. S. S. & A. G. B. & W.
Peninsula	Door	3,400	Purchase	1910	Fish Creek	17	C. & N. W.
Devil's Lake	Sauk	1,400	Purchase	1911	Baraboo	12, 113, 159	C. M. St. P. & P.
Cushing Memorial	Waukesha	8	Gift	1915	*Delafield	18	Burlington
Nelson Dewey	Grant	1,650	Purchase	1917	Wyalusing	35, 60, 18	C. & N. W.
Perrot	Trempealeau	910	Gift	1918	*Trempealeau	167	Burlington Soo
Pattison	Douglas	660	Gift	1920	Brule	35	C. M. St. P. & P.
Tower Hill	Iowa	60	Gift	1922	Spring Green	11	C. & N. W.
Old Belmont	Lafayette	2	Gift	1924	*Belmont	118, 80	C. M. St. P. & P.
Northern Forest	Vilas	150,755	Purchase	1925	Trout Lake	51, 155	C. & N. W.
Rib Hill	Marathon	160	Gift	1927	*Wausau	51, 29	C. M. St. P. & P.
Potowatomi	Door	1,100	Purchase	1928	Fish Creek	17, 78	G. B. & W.
Terry Andrae	Sheboygan	112	Gift	1928	Sheboygan	141	C. & N. W.
American Legion	Oneida	36,000	Purchase	1929	*Trout Lake	47	C. & N. W.
Copper Falls	Ashland	520	Purchase	1929	Mellen	13, 77	Soo

* No resident park superintendent.

as well as for the tourist who wishes to stay overnight or for a week. Some of Wisconsin's parks offer unexcelled opportunities for the camper who goes out for several weeks to live the life of several generations ago.

Aside entirely from the standpoints of public health and the preservation of historic and beauty spots of exceptional worth, state parks have a very definite economic value. The mere establishment of certain areas causes surrounding land values to increase, and as the park is developed, the assessable value of surrounding land continues to increase. The coming of hundreds of thousands of tourists each year to visit state parks certainly is of value to the communities through which they pass enroute.

In addition, each state park might be called a "conservation area" for here ruthless destruction of natural resources and natural beauties is not tolerated. Nature is permitted to regulate her own affairs in most state parks and the educational value of such areas to the people of the state is inestimable.

New Parks During Biennium

During the biennium three areas were added to the state park system, making a total of 16. The three added are Terry Andrae State Park in Sheboygan county, Copper Falls State Park in Ashland county, and American Legion Memorial State Park and Forest Preserve in Oneida county.

Terry Andrae State Park which comprises 112 acres, was given to the state by Mrs. F. Terry Andrae of Milwaukee. It is located on the shore of Lake Michigan about six miles south of Sheboygan. Copper Falls State Park was acquired by purchase from the Lake Superior District Power Company. It consists of 520 acres and is located four miles north of the city of Mellen. The new park in Oneida county was defined by legislative act to include all state owned lands within two townships in the northern part of the county.

Each of these areas is a valuable addition to the state park system and extensive improvements carried on in them following their acquisition during the biennium, have made each of the three areas accessible to the public. At the close of the biennium all of the state parks are in better condition than they ever have been.

Educational Uses for State Parks

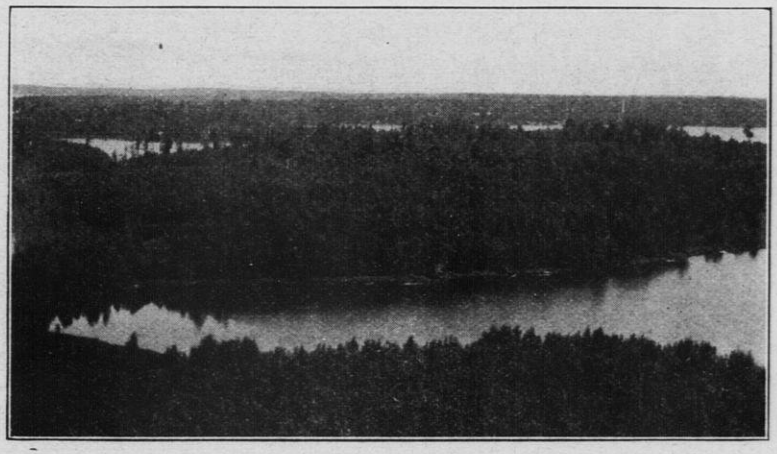
During the biennium the commission adopted a policy to extend the educational uses of state parks to all groups interested in making use of them. In certain parks, Devil's Lake State Park principally, commercialism has been cut down as far as possible and the site formerly used by a commercial hotel is now saved for educational use. Boy Scouts and other groups have been invited to make free use of all state parks.

Closely allied with the policy for increasing the educational uses of state parks is the program for establishing state park museums. A beginning has been made at Devil's Lake State Park where a building has been set aside for museum use.

Through the courtesy of the Milwaukee Public Museum the commission acquired an adequate number of display cases for this first museum. It is planned to completely equip the Devil's Lake State Park museum and then to establish museums in other parks.

State Park Roads and Improvements

The aid for state park roads provided in the state highway law, was increased during the biennium from $50,000 to $150,000 per year. The law was amplified to include use of this money not only for construction and maintenance of highways on state parks' lands, but also on state forests and other state owned lands. The bulk of the money was spent for road improvements in and adjacent to definitely established park areas.



Lake Tomahawk. American Legion Memorial State Park and Forest Preserve.

The new road in and approaching Nelson Dewey State Park was completed; a new road was constructed in Potowatomi State Park; and material improvements were made in the roads in Northern Forest State Park, American Legion Memorial State Park and Forest Preserve, Terry Andrae State Park, and Devil's Lake State Park.

Special attention has been paid to the improvement of drinking water supplies and sanitary facilities in all of the state parks and additional camping ground and picnic ground equipment have been installed throughout the system. Development work, the building of trails, and installation of safety devices, have been carried on in Copper Falls State Park. Considerable development work was also carried on in the new Terry Andrae State Park.

State Park Survey

The forestry and parks division made a state-wide survey of sites available and desirable for state parks. This survey was well in

progress at the end of the biennium and will be of valuable assistance in the consideration of suggested sites in the future. It is becoming increasingly evident that sizeable areas of natural wilderness including lakes, rivers, forests, and native wild life, are necessary in a well rounded state park program, and it is vitally important that state parks be established on suitable areas at reasonable distances from large centers of population.

Only the most outstanding historic and scenic areas within the state and only those having particular significance to the entire state should be considered for a state park system. Because in Wisconsin there are so many attractive places which would make excellent parks, it is obvious that the state cannot own and take care of them all. Therefore, it is felt that there should be established systems of county and township parks to supplement the state park system. Such subsidiary park systems would be owned and regulated by the local governmental units and while they would serve local needs primarily, they would also be available as part of the general park program of the state.

Brief Description of Wisconsin's State Parks

Interstate Park, the oldest of the present system of state parks, is a co-operative venture in the perpetuation of beauty by Wisconsin and Minnesota. It is located on the Wisconsin boundary of the state along the Dalles of the St. Croix river. Interstate Park is one of the most popular of Wisconsin's parks partly because of the beautiful bluff and river scenery of the St. Croix river, and partly because of its easy access from the Twin Cities. In Interstate Park is located one of the largest trout hatcheries in the world, at St. Croix Falls.

The Brule State Park, close to Superior, was made famous throughout the world in 1928 when President Coolidge chose it as the site of the summer Whitehouse. The chief attraction in the Brule State Park is the river of the same name with the excellent trout fishing to be had in it.

In Peninsula State Park, located near the tip of the Door county peninsula, there have been set aside 3,400 acres of beautiful rolling land which fronts on Green Bay. Giant cliffs, against which break the waves of Green Bay, create the indescribably beautiful bluff and water scenery for which this park is justly famous. Beautiful woods and adequate camping facilities place Peninsula State Park among the favorites for the tourists who wish to camp for a long time. It is in Peninsula State Park that the state has located its game farm, and thousands of pheasants as well as wild American turkeys, prairie chickens, and other native game birds and animals add to the interest of the thousands of people who visit the park every year.

Devil's Lake State Park, situated in the heart of the Baraboo range near the famous Dells of the Wisconsin river, presents the most unusual bit of mountain scenery in the state. In Devil's Lake State Park, bluffs rise sheer for several hundred feet above a little lake which is a veritable jewel. From a geologic standpoint Devil's Lake reveals a most interesting history and has been said by geologists to

illustrate more principles of the science of geology than any other one district in the United States. To the biologist as well as the geologist and geographer, Devil's Lake offers many fascinating attractions. Here is the dividing line between northern and southern flora and fauna. Every year thousands of students visit Devil's Lake State Park to study science.

Cushing Memorial State Park in Waukesha county, is a delightful place to stop for a short time. An imposing granite shaft in memory of the three Wisconsin Cushings who won undying distinction in American military and naval activities, is located at the crest of the park and is the principal attraction in this small area.

Pines and dunes in Terry Andrae State Park.

Few grander sights can be seen anywhere in the world than the majestic view of the confluence of the Wisconsin and Mississippi rivers at Nelson Dewey State Park. Here one stands on the top of a mountainous bluff hundreds of feet above the rivers, looking for miles and miles up either of the river valleys. Immediately below is the Thousand Island section of the Mississippi.

Another area preserved by the state on the Mississippi river is Perrot State Park near Trempealeau. Outstanding in interest in this park is Trempealeau mountain—Hay-nee-ah-chah, or "Soaking Mountain" to the Winnebago Indians—which rises up from the shimmering backwaters of the mighty Mississippi. For nearly 250 years Trempealeau mountain has served as a landmark to Mississippi voyageurs.

Just south of the city of Superior is Pattison State Park where the Black river breaks over the range to form the beautiful Manitou

Falls—Gitchee–Manitou or "Falls of the Great Spirit". This waterfall is 165 feet high, the highest in the state.

A short distance upstream from Big Manitou Falls is Little Manitou Falls which serves as an excellent introduction to the glory of the larger falls below.

Tower Hill State Park marks the site of the old shot tower for the making of lead bullets in early days of Wisconsin's history. A village which for a time promised to develop into a city named Helena, was established here in 1831 by Daniel Whitney, a Green Bay merchant. For about thirty years the village of Helena flourished and then it vanished before the changing industrial and transportation methods, and now all that remains of it is an historic old cemetery and the shaft of the old shot tower.

The smallest of Wisconsin's state parks and yet one of the most interesting from its significant history, is Old Belmont State Park, the site of the first state capitol building of Wisconsin. It is located within a short distance of the village of Belmont in Lafayette county, between Platt and Belmont mounds, two landmarks which are visible for 25 miles in every direction. This park can best be reached by the regular trunk highway from the present village of Belmont.

Northern Forest State Park, located in Vilas county, comprises more than 150,00 acres of woods and waters, in which both game and fish abound. It is here that the State Conservation Commission operates its mammoth tree nursery which every year furnishes millions of evergreens for reforestation programs. Visitors to this park can find wilderness camping or resort hotel facilities according to their liking, and in the scores of lakes they can find fishing unexcelled anywhere in the Middlewest.

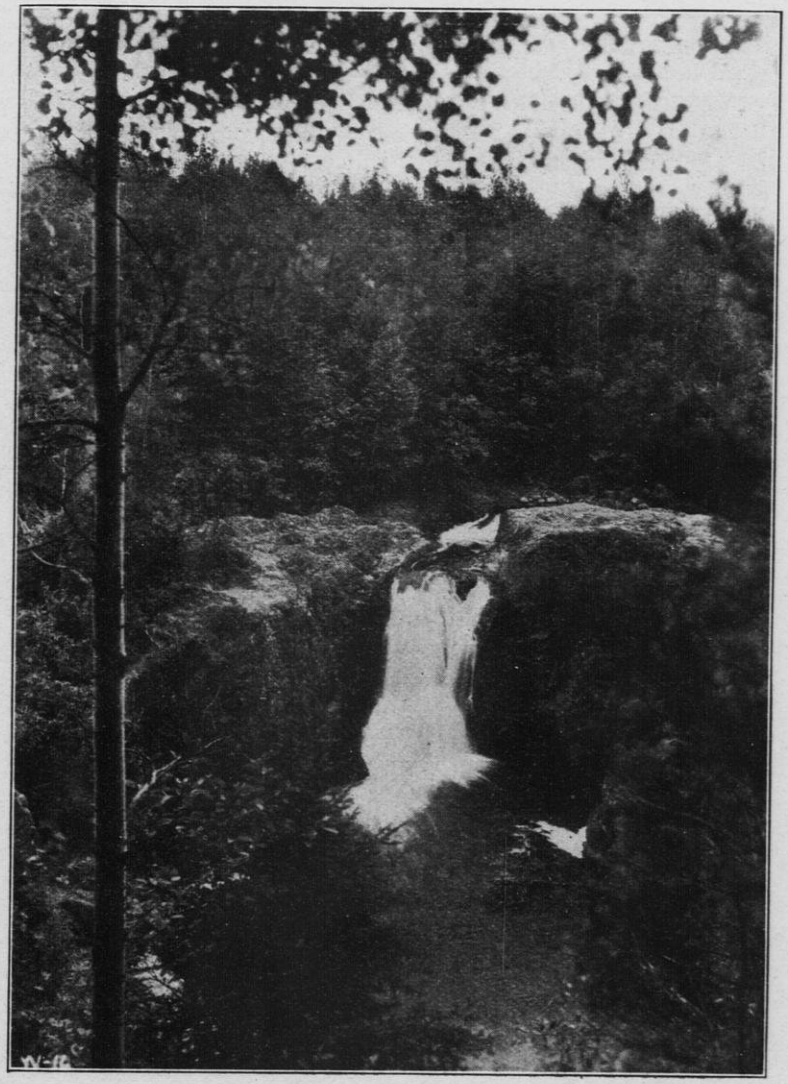
Located high on top of Granite mountain, a few miles south of the city of Wausau in Marathon county, is Rib Hill State Park which contains the highest point in Wisconsin. From the highest point in the park, 1940 feet, the visitor is rewarded for his climb by one of the most majestic views to be had anywhere in the state.

Potowatomi is the name of another state park in Door county. It is located on a section of the neck of land between Green Bay and Sturgeon Bay which has long been called Government Bluff. Magnificent vistas of coastline scenery can be seen from the peak of this Government Bluff, as can the whole of Sturgeon Bay and Green Bay.

Terry Andrae State Park on the shore of Lake Michigan in Sheboygan county, perpetuates a bit of the sand dune country to posterity. Botanical experiments have been carried on in this park so that the spot is fascinating to the scientist as well as to the tourist.

American Legion Memorial State Park and Forest Preserve is a co-operative venture in park and forest administration between the state and the American Legion. The legislature of 1929 established this area which contains approximately 36,000 acres as a definitely named state park. Much intensive park development cannot be carried on because of the size of the area. This park will always be available to the lover of nature who wants to rough it and hike or camp in a true bit of the north woods.

The newest of Wisconsin's state parks is Copper Falls, an area of 520 acres near Mellen in Ashland county. It contains a delightful waterfall where the Bad river flows over the Keeweenawan trap before it plunges into a remarkable gorge to form a combination of waterfall and gorge scenery difficult to surpass even in the Rocky Mountains.



Copper Falls. Copper Falls State Park.

DIVISION OF FISHERIES

Introductory

The first state fisheries effort in Wisconsin was the appointment of a fish inspector under Chapter 77 W. S. in 1866. Eight years later state fisheries operations were started under an act of the legislature of 1874 by which a commission was appointed and a small appropriation made.

The first state work of hatching fish was carried on at the Dousman private fish hatchery located near the village of Dousman in Waukesha county. The first state hatchery was established in Madison in 1875 and is still in operation.

Commercial species received attention from the state fish department at almost as early a date as game fishes of inland waters. The second hatchery established in the state was a station for hatching lake trout and whitefish. It was located in Milwaukee. Later this hatchery was transferred to Oshkosh where the lake trout and wall-eyed pike were hatched. The pike work was discontinued at Oshkosh however, because of the unsatisfactory quality of the water in the spring during the hatching season. The lake trout work was continued at the Oshkosh station until the two new commercial fish hatcheries were built at Sheboygan and Sturgeon Bay in 1911.

The third state fish hatchery was built at Bayfield in 1895. It was used primarily for hatching brook and lake trout to take care of the streams in the northern part of the state and the commercial lake trout fishing in Lake Superior.

About this time demand was made that the state make efforts to hatch bass and more wall-eyed pike. This brought an appropriation from the legislature to establish the hatchery at Woodruff in 1901.

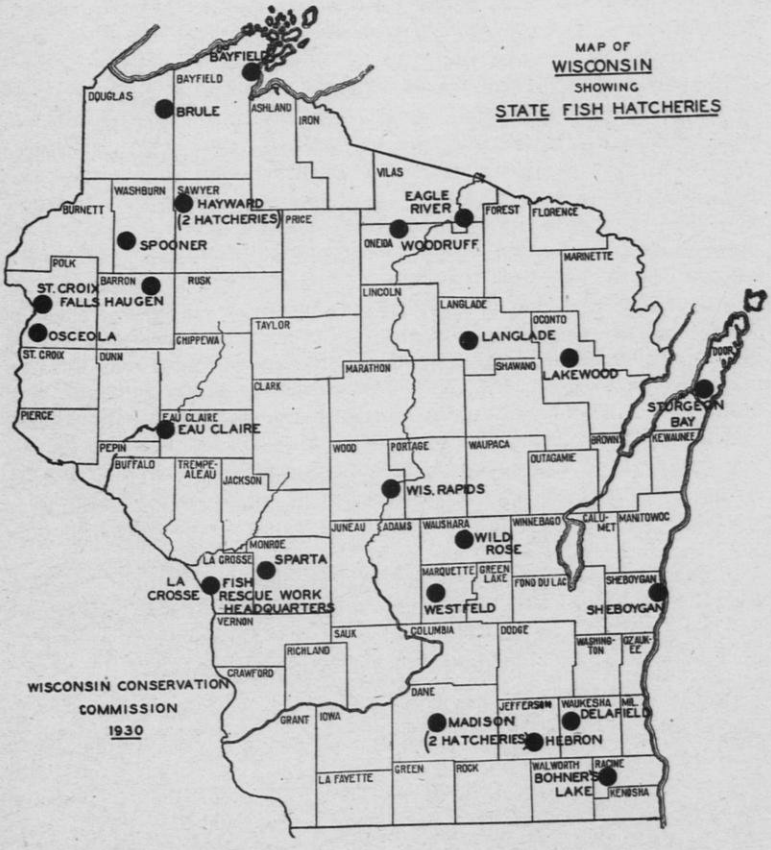
Having a bass hatchery in the northern part of the state brought a demand for one in the southern part of the state and the Delafield hatchery was established in 1907. Next, with the increased need for a larger distribution of brook, brown, and rainbow trout than it was possible to obtain from the Madison and Bayfield hatcheries, the Wild Rose trout hatchery was built in 1908.

Following 1908 interest became keen to increase efforts for the production of commercial species of fish for the Great Lakes. This interest culminated in building the two commercial fish hatcheries at Sturgeon Bay and Sheboygan in 1911. These two hatcheries have been in continuous operation since that time.

A greater need was soon felt for more hatcheries to propagate lake fish. In 1914 a pike hatchery was established at Spooner and

in 1915 a pike hatchery was built at Eagle River and a temporary structure which could be used for hatching pike in the spring, was built in Tenney Park in Madison.

All these hatcheries continued to operate along recognized lines of activity. In 1919 Wisconsin began the program in the Middlewest of rearing fish to a larger size before planting. This necessitated



building hatcheries where there was sufficient water and room to construct rearing ponds or series of raceways in which the fish could be raised to a fingerling size or larger before being planted. The St. Croix Falls hatchery was the first established under this new program. It was built in 1919.

About 1923 the conservation commission thought it advisable to establish several small part time rearing hatcheries where suitable sites and water supplies could be found. In that year hatcheries were built at Westfield, Hayward, and Lakewood. In 1925 to round

out the brook trout propagation and rearing program and at the same time to acquire a large stock of spawners, the commission leased the Troutmere hatchery at Osceola from A. Hansen, the owner. The lease extends for a ten-year period and the state has the option of buying the property at any time for $40,000.

In 1926 the conservation commission entered into a co-operative program with the Nekoosa–Edwards Paper Company whereby the company constructed a rainbow trout hatchery on their property at Nepco lake near Wisconsin Rapids. This hatchery has been operated by the state.

Two more pike hatcheries and four more trout hatcheries were added by the action of the legislature of 1927. The pike hatcheries were built at Birchwood and Haugen. Both of these hatcheries were built with funds raised by popular subscriptions.

The four trout hatcheries ordered built in 1927 are located at Eau Claire, Brule, Sparta, and at Crystal Springs near Antigo in Langlade county. The city of Eau Claire donated to the state a site for the hatchery in the city park at the headwaters of Little Niagara creek. The Brule hatchery was built by sportsmen's organizations of Douglas county and presented to the state. The Sparta hatchery was located in the old city water works building, the use of which was donated in a 99-year lease by the city. The Langlade county hatchery was built on a site donated to the state by the Langlade County Fish and Game Protective Association.

In 1928 a site for a wall-eyed pike hatchery in Jefferson county was given to the state by George Van Lone and Leon Marshall, near Hebron. This hatchery was built with funds appropriated by the 1925 legislature.

In 1929 a site was finally found and purchased to build a new bass and wall-eyed pike hatchery in the southern part of the state which had been ordered by the legislature of 1927. After a long search, a suitable site was found at the outlet of Bohner's lake in Racine county.

It was found however, that the high price of the land and the rough topography made it impossible to build a hatchery and pond with the available appropriation from the 1927 legislature so an additional appropriation of $10,000 was granted by the 1929 legislature. A hatchery and an 11 acre bass pond were finished in the fall of 1929 and in operation for the first time in the spring of 1930.

Today Wisconsin has 25 hatcheries which are annually producing more than 300,000,000 fish for distribution and planting in Wisconsin waters. It is mainly due to state fisheries activities that Wisconsin still has a reputation for good fishing despite the constantly increasing demand put upon the lakes and streams of the state by fishermen from Wisconsin and visitors to the state.

Propagation

The general policy of the conservation commission of Wisconsin is to propagate and plant all kinds of native game and food fishes

in the streams and lakes of the state; to rid the lakes and streams of fish which are detrimental to and retard the progress of game fish; and to make the distribution of fish as complete as possible.

The methods employed in the hatcheries of Wisconsin are those which for years have been in use in all fish culture operations. Trout are hatched in long hatching boxes with trays of eggs, one upon the other, with an empty tray on top, and a wedge or brace to hold them in place in the hatching tank. The hatching tanks are arranged to that the water will run from one compartment to another with water going up through the eggs and fish at all times. This is the method employed in handling all kinds of trout.

Wall-eyed pike and all kinds of eggs which are hatched in glass jars are handled in what is known in Wisconsin as the Chase jar. The jars are placed on a framework of wood known as a battery and the water is introduced into the bottom of the jar by means of a rubber hose and galvanized tube, causing the water to pass through all the eggs in the jar before it runs out over the lip at the top of the jar.

Pond culture, or fish work with nest-building warm water fish, such as members of the sunfish family, is carried on in large ponds or lakes. The adult fish are paired off by putting a certain number of males and females in each pond and allowing them to follow their natural methods of nest building and egg laying and hatching. After the young fish are hatched and are large enough, they are taken out of the ponds and planted in lakes and rivers to which they are well adapted.

Hatching Activities and Improvements

1. The Madison trout hatchery is the oldest in the state and is located five miles southwest of the city. Brown and rainbow trout are hatched and raised at this station. Eggs are collected from the large stock of parent fish held for that purpose and hundreds of thousands of both species of trout are distributed from the Madison hatchery each year both to streams for planting and to other hatcheries for rearing.

The property at the Madison hatchery consists of 63 acres of land and 11 buildings. Because of its proximity to the city, the Madison hatchery is a favorite place for picnicking and great crowds of people frequent the grounds every day during the summer. A grove of fine old oak trees and the general topography of the land make it a pleasing park.

Many improvements have been carried on at the Madison hatchery during the biennium. A large open pond at the rear of the hatchery building was filled in and 250 feet of concrete raceway were built across the pond improving the appearance and facilitating the holding of fish. A mile of electric light line was erected, bringing the Madison city service to the hatchery grounds. There were 900 feet of concrete walk built around the hatchery and grounds, and 800 feet of concrete raceway repaired in addition to the 250 feet of new race-

way. Sixteen new rearing troughs were built and the bottoms of several ponds were covered with fresh rock.

2. The Bayfield hatchery is the second oldest hatchery in the state and is located on highway 13 between Ashland and Bayfield on the shore of Chequamegon bay about two miles from Bayfield. At this hatchery both commercial and game fish work is done. Lake, brown, and brook trout are all hatched at this station. The lake trout eggs are gathered from Lake Superior and all fish hatched from them are planted back into the lake. The brown and brook trout are planted throughout the state, most of the brown trout being planted in the southern part of the state in streams which are no longer adaptable to brook trout. All brook and brown trout eggs are collected from stock fish which are raised at the hatchery.

At this hatchery there are 502 acres of land, eight buildings, 40 ponds, 1500 feet of raceway, 6700 feet of pipe line. The following repairs and improvements have been made at this hatchery during the past biennium.

Six new rearing ponds, and the rearing capacity of the hatchery for bringing fish up to fingerling size has been increased from 42 to 94 tanks. The stock fish on the grounds have been increased very materially, four new artesian wells have been drilled, all buildings have been repaired and painted, and the grounds and buildings maintained in their usual excellent condition.

3. The Woodruff hatchery, the third oldest station in the state, is located on highway 47, two and one-half miles southeast of Woodruff. This hatchery is the center of all operations for wall-eyed pike egg collection in the northern part of the state during the spring. All equipment for the work is stored here and all eggs shipped to other pike stations throughout the state are sent out from the Woodruff hatchery.

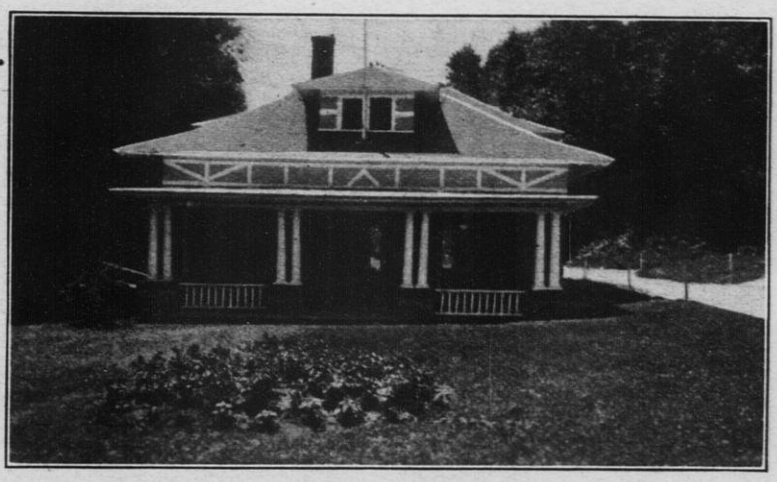
Wall-eyed pike, black bass, muskellunge, and pickerel are all hatched at the Woodruff hatchery. The muskellunge, pickerel, and pike are hatched in glass jars; black bass in two large rearing ponds and a lake which are on the grounds.

There are also five ponds where a muskellunge rearing experiment has been carried on for several years. The muskellunge fry are put into the ponds soon after the food sac is absorbed, and during their early stages they are fed with small aquatic life gathered from nearby lakes. After 10 to 14 days of feeding on the crustacea they are large enough to take larger food and are supplied with small fish until they are four months old. At this time they vary from six to eight inches in length. This is the age at which they are distributed for planting.

The Woodruff hatchery property comprises 275½ acres of land, seven buildings, seven ponds, one lake, and 2,200 feet of pipe line which conducts the water supply from Carroll lake to the hatchery and ponds. The following improvements were made during the biennium.

A new net house with a cement floor, 30 feet wide, 50 feet long, and 12 feet high was built. All buildings on the grounds were repainted and thoroughly repaired. A lighting plant was installed which furnishes light for the grounds and all buildings.

A new one and one-half ton Ford truck was added to the transportation equipment, and a new pump and engine were installed for use on the grounds and the hatchery. New nets and other equipment including 1,800 net stakes, necessary for pike egg collecting operations, were constructed, and a new steel pipe line was laid from the main water line to the hatchery building to replace the old pipe line which has always given trouble because of the growth of tree roots into it which clogged it up. The new pipe line will eliminate all this trouble in the future.



Woodruff State Fish Hatchery.

4. The Delafield hatchery is located in Waukesha county on highway 30 in the village of Delafield. It is devoted entirely to the hatching of wall-eyed pike and the hatching and rearing of black bass.

The property consists of 32 acres of land, six ponds, an excellent hatching building, 1,430 feet of pipe line. The water supply for the hatchery and ponds is drawn from Nagawicka lake.

5. The Wild Rose hatchery is located one mile north of the village of Wild Rose on highway 22 in Waushara county. It is one of the most beautiful hatcheries in Wisconsin. There are many native trees on the grounds and in 1916 more than 6,000 Scotch and white pines were planted on the hatchery grounds, some of which are now 25 feet in height. Spacious lawns make the hatchery grounds an ideal place for picnics and thousands of people visit the grounds during the summer months.

Brown and rainbow trout are hatched and reared at this hatchery.

All eggs handled at this station are taken from parent fish held in the ponds.

There are 32 ponds, 1,200 feet of pipe line and five buildings. In the last two years all the buildings were painted inside and out and some new roads and walks have been built on the grounds. Several new ponds have been constructed and the ice house, meat house, garage, workshop, and tool house have all been rebuilt. The fish car barn where the Badger No. 2 is stored, is located at Wild Rose. This building has been sealed on the inside, new windows have been installed in it, a new roof has been put on and the entire building has been painted. The old concrete raceway has been rebuilt and concrete floors and approaches have been put in the new buildings.

6. As Sturgeon Bay and Sheboygan hatcheries are identical both in construction and operation, description of one applies to the other. The only difference in the two places is in the water supply. At Sturgeon Bay the water is pumped from the bay by a co-operative arrangement with the city pumping station. At Sheboygan the city water is used.

Living quarters for the hatchery superintendent are provided for on the second floor of each of these hatcheries. They are electrically lighted and steam heated. Each of the hatcheries has a capacity of 2,500 quarts of green eggs and each year the hatcheries are filled to capacity. All the young fish hatched from the eggs are planted in the lakes on the fishing grounds from which the parent fish were taken.

Eggs for propagation work of the two commercial species, lake trout and whitefish, are obtained from commercial fishermen under an agreement with the state whereby the state issues a permit to the fishermen to operate during a portion of the closed season when the fish are spawning. The fishermen under state supervision, collect the eggs and deliver them to the hatcheries. For remuneration the state gives them the fish taken during the spawning operations.

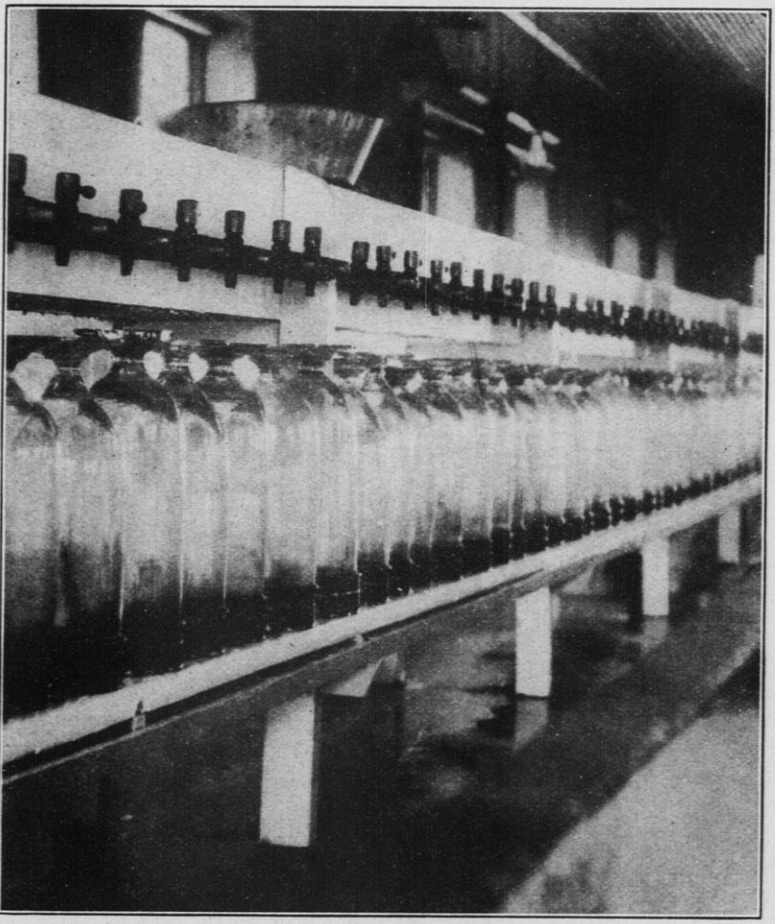
Lake trout egg collection begins after the commission has made tests to determine that the fish are ripe for spawning, and continues until the state orders it closed after a sufficient number of eggs have been taken to fill the hatcheries. Lake trout eggs are incubated during the coldest part of the year and are held in the hatchery after hatching, until the food sac is practically absorbed before distribution.

Wall-eyed Pike Hatcheries

Wall-eyed pike eggs are hatched at 10 hatcheries located at Delafield, Woodruff, Eagle River, Hayward, Birchwood, Haugen, Bohner's lake, Hebron, Spooner, and Tenney Park in Madison. Hatcheries at Bohner's lake, Woodruff, and Delafield carry on propagation work in addition to wall-eyed pike, but activities at each of the others are restricted to pike operations.

By far most of the pike eggs collected in Wisconsin are taken from the inland lakes of the northern part of the state from parent fish which are caught with hoop nets on the shores of the lakes in the

spring soon after the ice goes out. The pike is the second of the spring spawning fish to come on to the shores to deposit eggs, the pickerel being the first. At about the same time the pike are spawning, muskellunge spawn, and as the season advances, members of the sunfish family like the bass, crappies, etc., start their spawning activities.



Single hatching battery in a pike hatchery.

The hatcheries which are used exclusively for pike are small buildings, 20 by 50 feet, and are supplied with batteries containing glass jars to hatch the eggs. The capacity of the batteries varies from 100 to 200 jars.

Incubation of wall-eyed pike eggs takes from 10 to 21 days depending upon the temperature of the water and the weather. The

warmer the weather and water, the quicker the hatching takes place. The little fish begin swimming immediately after hatching and follow the current through the jars out into a large tank in which they are held for distribution. They are distributed and planted as soon as possible after hatching.

Each of the 10 pike hatcheries has a capacity of 40,000,000 to 50,000,000 pike. During the biennium each of the pike hatchery buildings has been painted.

7. The St. Croix Falls hatchery is located in Interstate Park within the village limits of St. Croix Falls. Activities at this station were started in 1919 in an old flour mill which was later remodeled into what is probably the most unique fish hatchery building in the world. Each one of the four floors in the building is used for hatching purposes and is made possible because the water supply is obtained from a high hill immediately across the road from the building which gives sufficient fall to bring the water into the fourth floor of the hatchery. This arrangement is inconvenient as it necessitates an excessive amount of stair climbing to feed the fish.

The hatchery at St. Croix Falls is the first place in the state where successful rearing operations for brook and brown trout were carried on. On the brow of the hill across the road from the hatchery building, is a long raceway containing 18 rearing ponds. On the hillside series of raceways have been built in such a way that the water passes from one to another through open ditches and over stones, becoming completely aerated between the ponds. This system is so successful that the same water can be used in 10 rearing ponds on the hillside before it is finally conducted to the river. In addition to the hillside series of raceways, a large rearing house has been built on the same level as the hatchery building and the water is conveyed to this building in the same way it is taken to the hatchery.

The property of the St. Croix Falls hatchery includes the hatchery building, two residence buildings, one rearing house, one hatching house, and 28 concrete ponds and raceways. During the biennium the buildings have all been painted, both on the inside and outside, the two residences remodeled, and the grounds have been made into lawns.

Eight-inch tile water mains have been laid 12 feet deep for 935 feet of line, and 750 feet of galvanized pipe was laid to conduct a water supply to the ponds. Concrete sidewalks have been built around the residences, and retaining walls have been built on the brow of the hill and around the back of the hatchery above the river. Old wooden sills were replaced with concrete sills in the main building, one new gas engine was installed, and 160 feet of new water main were laid under the ground to conduct a better quality of water into the hatchery building.

8. The Westfield hatchery is located at Westfield, two blocks west of highway 51. The propagation of brook and brown trout at this hatchery has been very successful. The water is secured from

artesian wells varying in depth from 65 to 225 feet. The temperature of the water never changes more than one degree and its supply seems inexhaustible.

The property of the Westfield hatchery, nine and one-half acres of land, consists of four buildings, 20 rearing ponds built in raceways, and a superintendent's home. The five acres of land on which the buildings are located, are cleared of trees, but there is a grove on the other four and one-half acres which can be ultimately used for additional series of raceways.

9. The trout hatchery at Hayward was established in 1923 and is located about three miles from the city of Hayward on Highway 77. The land and water rights were donated to the state by Robert Peigh and the Hayward Rod and Gun Club. There is also a wall-eyed pike hatchery at Hayward which is owned by the county and operated by the state.

The Hayward trout hatchery is operated part time every year in rearing brook trout. The supply of trout for the Hayward hatchery is sent from the larger trout hatcheries in the state when their ponds become overcrowded as the fish grow.

The property of the Hayward hatchery consists of 34 acres of land including a right of way to the hatchery from highway 77, a large reservoir for water supply, hatchery building, rearing building, ice house, and four rearing ponds.

10. The entire property of the Osceola hatchery has been leased from A. Hansen of Osceola, for state brook trout propagation activities. Approximately half of the water supply is obtained from artesian wells insuring a constancy of temperature. The balance of the water is taken from a stream which flows through the grounds.

At the lower end of the hatchery grounds a dam has been built across the stream to develop waterpower for generating electric current to light the buildings and grounds and furnish power for grinding the fish food and pumping water needed in rearing ponds.

At another level, another dam has been built creating a pond 350 feet long, 150 feet wide and 20 feet deep below which a large rearing house has been constructed 110 feet long, 30 feet wide which is supplied with water from the pond. This rearing house holds 90 troughs each of which is 18 inches wide, 14 inches deep, and 14 feet long.

By the time the artesian water from the hatchery reaches this reservoir which is nearly a mile from its source, it is warmed up enough to enhance the growth of the trout. Brook trout prefer water not warmer than 65 degrees and grow faster in the water at approximately that temperature.

The property of the Osceola hatchery consists of 230 acres of land, three houses, an old hotel building, a hatching house, a rearing house and five other buildings. In addition there are several thousand feet of raceway and ponds for holding adult trout from which eggs are taken for hatching purposes.

11. The Wisconsin Rapids hatchery is used only for raising rainbow trout, and is located about three miles from Wisconsin Rapids in

Wood county on Nepco lake. The buildings and grounds are owned by the Nekoosa-Edwards Paper Company.

When the paper company built Nepco lake to procure a pure water supply for the paper mill, it was proposed to them by the Wisconsin Conservation Commission that they establish a fish hatchery as a means of stocking the lake. It was agreed that the commission would furnish the fish and operate the hatchery and as remuneration for the use of the building, one-half of the fish raised were to be planted in Nepco lake.

This hatchery was established in 1926 and used as a rainbow trout hatchery since that time under this agreement.

12. The Eau Claire hatchery is a brook trout hatchery located in one of the parks of the city of Eau Claire and was built from a legislative appropriation in 1927. The water supply which is excellent, is secured from two wells. Most of the fish raised at the Eau Claire hatchery are planted locally and applicants usually call for the fish at the hatchery, saving the expense of railroad distribution. Equipment includes besides the hatchery building, 32 rearing troughs with a capacity of 1,000,000 trout.

13. The Sparta hatchery, since its establishment in the old city water works building in Sparta, has been in operation each year hatching brook and brown trout and rearing them to a large fingerling size. Most of the fish from this hatchery are planted locally and are called for at the hatchery.

14. The Brule brook trout hatchery is located in Brule State Park about one mile south of the village of Brule on county trunk H in Douglas county. Water is secured from a pond above a dam built across the Little Brule river.

The expense of the construction of the dam and hatchery was borne by sportsmen's organizations of Douglas county, and when completed the site was presented to the conservation commission. There are five rearing ponds in the Brule hatchery, and brook trout have been raised to fingerling size each year since the station was established in 1927.

15. Propagation efforts for wall-eyed pike, bass, and other sunfish, are carried on at the Bohner's lake hatchery which is located three miles south of Burlington at the outlet of Bohner's lake from which the water supply is secured.

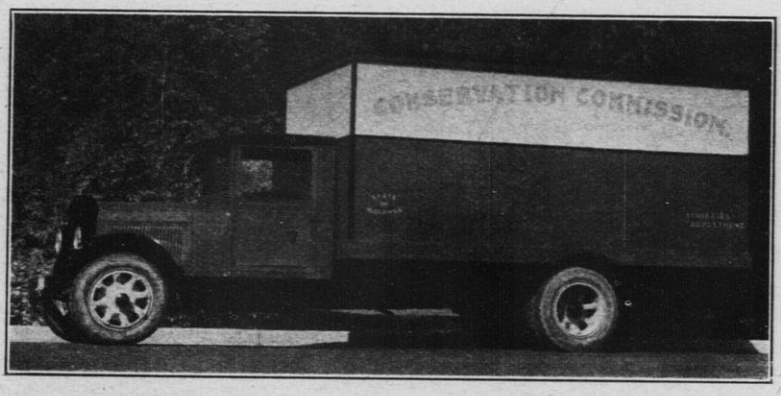
This hatchery was put in operation for the first time in the spring of 1930 and bass were raised very successfully from the stock of parent fish in the 11 acre pond which was built between the hatchery building and the lake by building a dirt dike 1,400 feet long. A large percentage of the bass hatched was retained in the pond during the summer and allowed to grow to fingerling size before being distributed.

The property at Bohner's lake hatchery was acquired during the biennium and a hatchery building with living quarters on the second floor for the superintendent was built during the winter of 1929–1930. In addition to the hatchery building and the pond there are several

small rearing ponds constructed of concrete. Artesian wells supply the water for these ponds.

16. The Langlade county hatchery is located on county trunk A, 14 miles from Antigo on land donated to the state by Charles W. Fish. A dam has been constructed across the overflow from Crystal Springs, the headwaters of the eastern Eau Claire river, creating a reservoir pond to supply water for the hatchery. Brook trout are hatched and reared for distribution in Langlade and nearby counties, at this hatchery.

The Langlade county hatchery was built in 1928 and the entire property includes the hatchery building, four rearing ponds and a garage.



One of the new specially constructed trucks used in fish distribution.

Distribution

Distribution of fish from hatchery to lakes and streams, or to rearing ponds, begins in Wisconsin in the early spring as soon as the wall-eyed pike eggs begin to hatch. Pike are the first fish to be distributed because they are the first to hatch and must be planted as soon as possible after hatching. The food sac on infant wall-eyed pike is quickly absorbed and if the fish are to survive, they must be planted before the sac is completely absorbed.

Just before the beginning of the biennium the division of fisheries designed a new type of fish distribution truck of which two are now in use. Each truck has a capacity of 100 cans of fish so that one trip from a hatchery to the railroad by the two trucks will transport 200 cans, the maximum capacity of the fish car. Each of the trucks is supplied with a special air compressing unit with pipe lines running lengthwise across the body of the truck so that an air line can be placed in each can. This aeration prevents loss of fish during transportation.

The commission owns one railroad fish car, the Badger No. 2, which is inadequate to distribute the entire output of the hatcheries. The

Chicago and Northwestern Railroad loans to the state each summer two steel baggage cars which are transformed into fish distribution cars with aeration systems similar to the one in the Badger No. 2.

The Badger No. 2 is put in operation early in the spring and is kept in operation until all the distribution work is done late in the fall. As soon as pike distribution is finished, the car is used to transfer fish rescued from various places in the state other than the Mississippi river, to points for planting. Trout distribution begins immediately following the distribution of the rescued fish and continues until late in the fall.

In August when the extensive fish rescue activities are started in the Mississippi river bottoms, one of the three distribution cars is kept busy constantly distributing these rescued fish. Distribution of 20 months old trout which are reared at several of the hatcheries, is the last work of the fish cars each fall. The element of timeliness is vital in the distribution of these adult trout as when planted they are almost ready to spawn and must reach the streams before spawning begins.

State Rearing Activities

The commission has expanded its policy of rearing to a larger size all fish which can be reared prior to distribution. In addition to carrying on rearing activities with the species, principally trout, about which much is known, the commission has also conducted rearing experiments with other species hitherto considered impossible to rear. Among these latter are wall-eyed pike and muskellunge.

Many new rearing ponds have been built at the trout hatcheries, and distribution of adult brook and brown trout has assumed larger proportions than ever before. During the first year of the biennium more than 46,000 adult trout were distributed and planted in streams selected after a state wide survey had been made. The second year this number was practically doubled and the fish were distributed according to the same plan. These adult trout are large enough to spawn when planted and large enough to catch the following season.

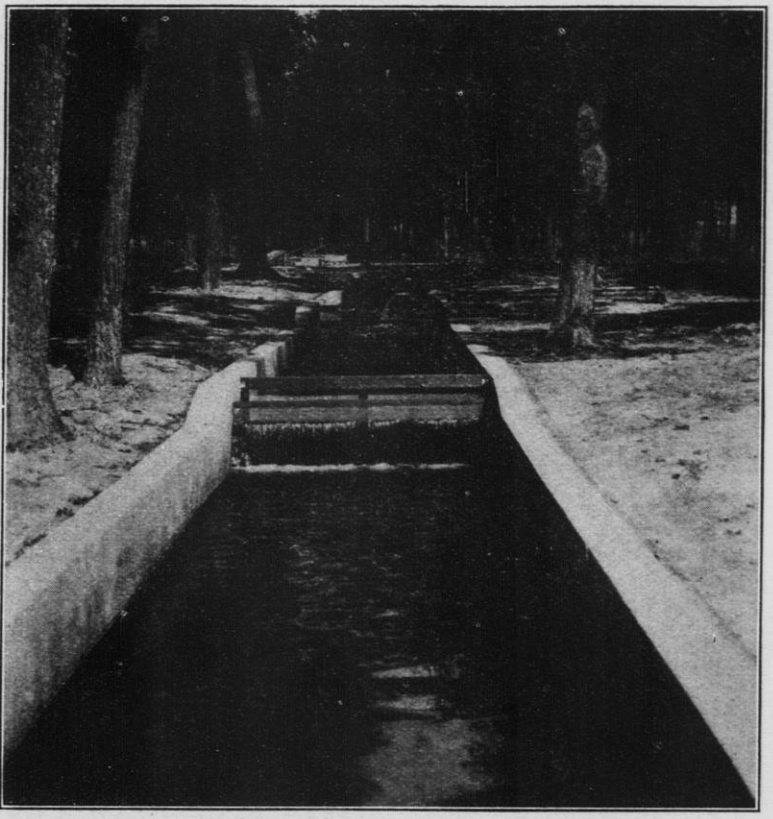
Co-operative Rearing Program

The commission made a definite appeal to sportsmen's groups and interested individuals throughout the state to co-operate with the state department in the rearing of trout. Prior to the opening of the biennium .there were very few privately owned and operated rearing ponds toward which the commission was acting in an advisory and co-operative way. In the spring of 1929 a letter was sent from the commission to the secretary of each sportsmen's group, offering to furnish plans and suggestions for the building of rearing ponds, and to make inspection of available sites.

A similar letter was sent during the second year to the groups which had not responded the first year. At the close of the two-year period there were 184 privately owned and operated rearing ponds located in 75 places in the state. The fisheries division co-

operated with them all, and furnished 3,068,205 trout to them during the biennium.

Both brook and brown trout are distributed from state hatcheries early in the spring to these co-operative rearing ponds, the brook trout being sent to the central and northern portions of the state, and the brown trout to the southern part. It is understood by the



One series or raceway of rearing ponds at the Westfield trout hatchery.

sportsmen's groups or individuals operating the rearing ponds, that when the fish are to be planted, some representative of the state fisheries division will be present to report on the success of the rearing experiment.

Mississippi Rescue Activities

One of the most interesting and vitally important phases of the fisheries program in Wisconsin is the rescue work carried on in the river bottoms every summer and fall when receding water in the river leaves hundreds of landlocked pools and lakes throughout the

bottoms. These landlocked bodies of water gradually dry up during the dry periods of the summer and fall, and millions of fish would perish if it were not for the rescue work carried on by the fisheries departments of Wisconsin, Minnesota, Iowa, and the federal government.

The river bottoms of the Mississippi are divided into territories to be worked by the fisheries departments of the several states and the federal government so that there will be no duplication of effort. The methods of rescue are similar for each division. Crews consisting of five men each with boats, nets, tubs, and other equipment to rescue stranded fish, seine all bodies of water in the river bottoms which are not connected with the main channel. Practically all of the fish rescued—more than 95 per cent—are returned immediately to the main channel of the river. The balance is taken in live boats to the Mississippi river conservation headquarters at La Crosse. Here the fish are held in tanks until a railroad carload is obtained when they are shipped out for distribution to inland lakes and rivers.

By far most of the fish rescued from the sloughs are small. Parent fish which go into the sloughs early in the spring to spawn, leave the spawning pools immediately when the water begins to foul. The small fish are not large enough to leave the sloughs before the waters become landlocked. It is very seldom that adult fish are found in landlocked pools.

An interesting phenomenon noticed by rescue men is that each year some one species is found in preponderance and that seldom is the same species found in preponderance two years in succession. Many species are found including pickerel, bass, catfish, bullheads, and carp.

Other Rescue Work

The fisheries division also carries on rescue work at other places in the state. Below the dam across the Fox river at Neenah extensive rescue operations save thousands of white bass and perch each year. These fish collect in the eddies formed by the wheels of the paper mills at Neenah. The small bass go over the dam early in life and remain in the water below the dam. When they grow to a fingerling size and begin swimming against the current, they congregate in large numbers immediately below the wheels of the mills.

The congregation of large numbers of fish makes it possible for rescue crews to take them out in large quantities. As many as 3,000,000 of these fish have been rescued from below the dam in one year, and planted back in Lake Winnebago. When the numbers warrant it, a small distribution of white bass rescued here is made throughout the state and very good results have been obtained in many waters where these fish have been planted.

A new rescue activity was begun during the biennium in flowages above power dams on some northern rivers. These flowages which do not have constant levels, frequently cause the death of thousands of fish which become stranded around the edges of the flowage when

the water is lowered. As many as 6,000 adult fish, including six species, were rescued from one flowage where the water had been backed up over what was once a wooded country. These fish were all planted in lakes in the immediate vicinity of the flowage.

Fish Refuges

A well-rounded fisheries program includes protection of fish in their natural reproduction as well as production of fish in hatcheries. To carry out the protection of natural reproduction the commission established a large number of fish refuges in desirable places throughout the state on known spawning and rearing grounds.

Refuges are established in both streams and lakes. The great majority of stream refuges are for the protection of trout in spawning grounds and places in which the infant fish stay until they are large enough to venture into the main streams. Trout refuges are always established in small feeder creeks to trout streams. Trout refuges continue in effect throughout the year.

Another reason for the establishment of fish refuges in streams and rivers is to protect fish in places where they congregate due to artificial impediments in the stream. Under certain dams where there are no fishways, or inadequate fishways, large numbers of fish congregate and stay for long periods of time, an easy prey to either legal or illegal means of fishing. Closing such areas does much to protect these fish in unnatural gathering places. Such refuges also continue in effect throughout the year.

The third kind of fish refuges are those established in lakes on known spawning grounds of lake fish, notably bass. Such refuges are necessary as bass usually spawn in June during the open season for other kinds of lake fish. Setting aside certain areas as refuges on known spawning grounds protects these late spawners from undue disturbance and results in a greater efficiency in natural reproduction. Such refuges are seasonal, extending until July 1 each year.

Removal of Rough Fish

A complete fisheries program includes artificial propagation; rearing; protection of natural spawning and rearing grounds; and the regulation or removal from the waters of foreign substances injurious to the fish, and of undesirable rough fish. The conservation commission for many years has authorized by contract the removal of rough fish, principally carp and buffalo, from inland lakes, and for the past two or more bienniums there has been an annual appropriation for the removal of all kinds of rough fish from Winnebago waters.

During the biennium the commission has taken another step in the removal of injurious fish and by special appropriation, is removing undesirable rough fish from the northern lakes. This work is carried on during the spring at the time when suckers and other rough fish are spawning.

Stream and Lake Survey

To compile statistical information which will assist in the scientific distribution of fish, the commission during the biennium, has made

a stream and lake survey of all the waters in the state. All the information compiled has been arranged in a card index, each lake or stream listed on a separate card.

This survey constitutes the most accurate checking of the inland waters of the state that has ever been made, and the information compiled during the survey will prove of increasing importance in years to come. The following is a sample of the information listed for lakes. Cards for the stream survey are very similar.

LAKE SURVEY

..... Fish rec. .....
County ..... Section ..... Township ..... Range .....
Nearest station ..... Distance .....
Nearest state highway ..... Distance .....
Nearest county highway ..... Distance .....
Name of outlet ..... Tributary to .....
Pollution .....
Nearest dam .....
Vegetation ..... Abundance .....
Small fish for food .....
Bottom (mud, sand or gravel) .....
Character shore line .....
Current ..... Country (rolling or flat) .....
Private or public ..... Length .....
Greatest depth ..... Average depth ..... Average width .....
Species fish (present) ..... Abundance .....
Species fish (past) ..... Abundance .....
Kinds planted .....
When .....Results .....
Investigator ..... Address .....Date.....
Condition of roads .....
Recommended for refuge .....
Resorts on lakes .....
Accommodations for how many guests .....
.....
.....

POLLUTION

Stream and lake pollution is a problem to which an increasing amount of attention in recent years has been paid by every one interested in conservation of fish resources. The State Board of Health has direct control of the solution of pollution problems in Wisconsin waters. The conservation commission co-operates with the State Board of Health in all possible ways and is represented on the state committee on water pollution.

COMMERCIAL FISHING

There are two types of commercial fishing supervised by the conservation commission, the Great Lakes commercial fishing for food fish, and the inland waters and Mississippi river commercial fishing for food and rough fishes. The Great Lakes, Green Bay, and Mississippi river commercial fishing is carried on under license granted by the conservation commission. The commercial fishing for carp, buffalo, and other rough fish in inland waters, is conducted under con-

tract by private fishermen and under direct supervision of a supervising warden.

The state operates three hatcheries at which commercial species of fish are hatched for planting in the Great Lakes. These are located at Sheboygan, Sturgeon Bay, and Bayfield. It is interesting to note that although most species of commercial fish caught in Lake Michi-

Crystal Springs State Fish Hatchery, Langlade county.

gan have been decreasing alarmingly, the catches of lake trout—the species to which most attention is paid at the hatcheries—have remained practically the same during the past decade.

The inland lakes' commercial operations are important from both the food and financial standpoints. Hundreds of tons of carp and buffalo are removed each year, all of which are consumed as food in eastern cities. Prices which the private fishermen receive for their catches of carp and buffalo vary from eight cents to 15 cents per pound of which the state receives 25 per cent.

Exchange of Breeding Stock

In order that the high strain of Wisconsin brook trout may be retained, the commission several years ago established the policy of exchanging eggs with different states to develop a new and stronger species. Each year Wisconsin exchanges millions of hatchery eggs for wild brook trout eggs taken from fish caught in streams of Canada and Montana. Eggs received in exchange are of an excellent quality and produce strong, healthy fish.

Scientific Studies

During the biennium the fisheries division has encouraged and cooperated in scientific studies and investigation concerning several phases of the fisheries program. These include projects in co-operation with the state committee on water pollution, the natural history division of the Wisconsin Geological and Natural History Survey, the University of Wisconsin, the State Department of Agriculture and Markets, and with the federal bureau of fisheries.

These studies include a number of subjects. The study being conducted by the state committee on water pollution is an attempt to determine the toxic or poisonous effect on fish life of various types and concentrations of industrial wastes.

The study being conducted by the Wisconsin Geological and Natural History Survey, concerns the fish foods produced in lakes in various parts of the state. These studies deal with the physical and chemical factors which affect the production of this food material, as well as with the amount produced.

One important scientific discovery was made by University of Wisconsin men at the Madison hatchery. This concerned a goitrous condition occurring in trout, and proved that proper use of certain iodine solutions was an effective treatment.

The land economic inventory conducted co-operatively by the State Department of Agriculture and Markets and the commission, is yielding much valuable information which will affect the planting of fish in the future. This inventory is locating all lakes by section, town, and range, and classifying them according to original outlets, channels, shorelines, depth, and hardness of water. In addition, fish scales are collected to aid in determining the relative growth of fish in different waters which indicates the amount of available food and the general suitability of waters for certain species of fish.

The Wisconsin Conservation Commission, in co-operation with the United States Bureau of Fisheries, the Department of Conservation of the State of Michigan, and several fish net and twine companies, is conducting an extensive investigation of chub fishing in Lake Michigan to determine what size mesh should be employed by commercial fishermen in Lake Michigan waters. Data are also being accumulated on the biology of the various species taken in the nets, especially chubs and lake trout, and on the factors involved in the distribution of these species.

DISTRIBUTION BY HATCHERIES—1929

Hatchery		Quantity From Each Hatchery	Total Number From Each Hatchery:
Madison			
Brown Trout Fingerling		123,000	141,662
Brown Trout Yearling		18,600	
Brown Trout 2 yr. old		50	
Brown Trout Adult		12	
Bayfield			
Brook Trout Fingerling		823,000	8,445,000
Brown Trout Fingerling		1,765,000	
Lake Trout Fry	5,840,000		
Lake Trout Fingerling	17,000	5,857,000	
Wild Rose			
Brook Trout Yearling	5,414		651,446
Brook Trout Adult	292	5,706	
Brown Trout Fingerling	640,300		
Brown Trout Adult	420	640,720	
Rainbow Trout Fingerling	4,900		
Rainbow Trout Yearling	85		
Rainbow Trout 2 yr. old	35	5,020	
St. Croix Falls			
Brook Trout Fingerling	3,284,000		3,498,100
Brook Trout Yearling	19,040	3,303,040	
Brown Trout Fingerling		195,060	
Osceola			
Brook Trout Fingerling	809,700		
Brook Trout Yearling	22,050		1,021,395
Brook Trout Adult	65	831,815	
Brown Trout Fingerling		189,500	
Albinos		80	
Westfield			
Brook Trout Fingerling		241,000	448,000
Brown Trout Fingerling		202,000	
Wisconsin Rapids			
Rainbow Trout Fingerling		40,000	40,000
Brule			
Brook Trout Fingerling rescued		582	882
Brown Trout Fingerling rescued		94	
Rainbow Trout Fingerling rescued		206	
Eau Claire			
Brook Trout Fingerling		205,200	501,400
Brown Trout Fingerling		296,200	
Sparta			
Brook Trout Fingerling		238,750	383,350
Brown Trout Fingerling		144,600	
Hayward			
Brook Trout Fingerling		198,500	198,500
Wall Eyed Pike Fry		49,155,000	49,155,000
Tenney Park			
Wall Eyed Pike Fry		15,595,200	15,595,200
Minocqua			
Wall Eyed Pike Fry	51,726,000		52,240,348
Wall Eyed Pike Fingerling	600	51,726,600	
Black Bass Fingerling	139,500		
Black Bass Large	20	139,520	
Muskellunge Fry	313,600		
Muskellunge Large	528	314,128	
Pickerel		60,000	
Blue Gills		100	

DISTRIBUTION BY HATCHERIES—1929—Continued

Hatchery		Quantity From Each Hatchery	Total Number From Each Hatchery:
Delafield			
Wall Eyed Pike Fry		48,972,950	49,004,937
Black Bass Fingerling	15,900		
Black Bass Yearling	75		
Black Bass Adults	12	15,987	
Roach		15,500	
Sunfish		500	
Eagle River			
Wall Eyed Pike Fry		31,921,000	31,921,000
Spooner			
Wall Eyed Pike Fry		20,248,450	20,248,450
Birchwood			
Wall Eyed Pike Fry		23,700,350	23,700,350
Haugen			
Wall Eyed Pike Fry		20,995,200	20,995,200
Hebron			
Wall Eyed Pike Fry		26,241,750	26,241,750
Sturgeon Bay			
Lake Trout Fry		12,950,000	13,750,000
White Fish Fry		800,000	
Sheboygan			
Lake Trout Fry		11,000,000	11,000,000
Gills Landing			
Pickerel Fingerling		20,726	20,726
Mississippi River Rescue Station			
Black Bass Fingerling distributed		50,000	
Miscellaneous Fish Fingerling distributed		399,300	12,605,048
Miscellaneous Fish returned to river		12,155,748	
Neenah			
White Bass Fingerling		359,000	1,031,700
Perch Fingerling		672,350	
Black Bass Fingerling		100	
Pike Fingerling		250	
Mercer Flowage			
Bass Adults		124	5,902
Pickerel Adults		34	
Crappies Adults		4,491	
Pike Adults		664	
Muskie Adults		589	
Total			342,840,346

Fish Transferred to Other Hatcheries

Wisconsin Rapids sent Wild Rose		
Rainbow Trout Fingerling	20,000	

Fish Eggs Shipped to Other Hatcheries—1929

Madison		
Brown Trout Eggs	1,400,000	For hatching
Rainbow Trout Eggs	972,000	In exchange for brook trout eggs
Wild Rose		
Brown Trout Eggs	1,020,000	For hatching
Rainbow Trout Eggs	1,921,800	In exchange for brook trout eggs

DISTRIBUTION BY HATCHERIES—1929—Continued

Hatchery		Quantity From Each Hatchery	Total Number From Each Hatchery:
St. Croix Falls			
Brook Trout Eggs		100,000	In exchange for rainbow trout eggs for stock fish at Wild Rose
Osceola			
Brook Trout Eggs		2,534,800	for Hatching
Total		7,948,600	
Fish from Federal Fisheries delivered by State Fish Cars 1929			
Miscellanous Fish			67,705

DISTRIBUTION BY HATCHERIES—1930

Bayfield Hatchery			
Brook Trout Fingerling		1,345,000	9,698,500
Brown Trout Fingerling		600,500	
Lake Trout Fingerling	706,000		
Lake Trout Fry	7,047,000	7,753,000	
Birchwood Hatchery			
Wall Eyed Pike Fry		25,200,000	25,200,000
Brule			
Brook Trout Fingerling	180,000		
Brook Trout Yearling	505	180,505	180,741
Brown Trout Yearling		53	
Rainbow Trout Yearling		183	
Burlington			
Wall Eyed Pike Fry		35,200,000	35,441,132
Black Bass Fry	197,200		
Black Bass Fingerling	40,810	238,010	
Pickerel Fingerling		3,122	
Deerbrook			
Brook Trout Fingerling		124,250	124,250
Delafield			
Wall Eyed Pike Fry		30,000,000	30,246,225
Black Bass Fry	197,500		
Black Bass Fingerling	33,675	231,175	
Roach		15,000	
Wall Eyed Pike Fingerling 7"		50	
Eagle River			
Wall Eyed Pike Fry		35,100,000	35,100,000
Eau Claire			
Brook Trout Fingerling		566,628	727,128
Brown Trout Fingerling		160,500	
Haugen			
Wall Eyed Pike Fry		15,300,000	15,300,000
Hayward			
Wall Eyed Pike Fry		27,450,000	27,472,800
Brook Trout Fingerling		22,800	
Hebron			
Wall Eyed Pike Fry		24,150,000	24,150,000
Madison			
Brown Trout Fingerling	200,000		216,795
Brown Trout Yearling and 8 mos.	6,600		
Brown Trout Yearling	500		
Brown Trout 2 yr. old	50		
Brown Trout Adults	20	207,170	
Brook Trout 20 mos. old		9,525	

DISTRIBUTION BY HATCHERIES—1930—Continued

Hatchery		Quantity From Each Hatchery	Total Number From Each Hatchery:
Osceola			
Brook Trout Fingerling	641,450		855,147
Brook Trout Yearling	20,000		
Brook Trout Adult	97	661,547	
Brown Trout Fingerling		193,600	
St. Croix Falls			
Brook Trout Fingerling	797,650		819,300
Brook Trout Yearling	14,400	812,050	
Brown Trout Fingerling		7,250	
Sheboygan			
Lake Trout Fry		10,800,000	10,800,000
Sparta			
Brook Trout Fingerling		370,000	587,700
Brown Trout Fingerling		217,700	
Spooner			
Wall Eyed Pike Fry		21,150,000	21,150,000
Sturgeon Bay			
Wall Eyed Pike Fry		12,375,000	26,375,000
Lake Trout Fry		14,000,000	
Tenney Park			
Wall Eyed Pike Fry		15,810,000	15,810,000
Westfield			
Brook Trout Fingerling	317,465		
Brook Trout Yearling	7,470	324,935	
Brown Trout Fingerling		297,575	622,510
Wild Rose			
Brook Trout Yearling		10,200	215,549
Brown Trout Fingerling	203,600		
Brown Trout Yearling	60		
Brown Trout 2 yr. old	25		
Brown Trout Adult	850	204,535	
Rainbow Trout Yearling	700		
Rainbow Trout Adult	64	764	
Mixed fish		50	
Wisconsin Rapids			
Rainbow Trout Fingerling		20,400	20,400
Woodruff			
Wall Eyed Pike Fry		41,400,000	42,595,388
Balck Bass Fingerling		65,700	
Muskellunge Fry	710,000		
Muskellunge Fingerling	1,152		
Muskellunge Adult	11	711,163	
Pickerel Fry		360,000	
Blue Gills Adult		3,025	
Perch Fry		55,500	
Mississippi River Rescued Fish			
Black Bass		175,770	12,122,323
Miscellaneous fish distributed	199,180		
Miscellaneous fish returned to river	11,747,373		
		11,946,553	
Neenah			
White Bass		1,232,190	2,044,885
Perch		812,695	
Crystal Lake			
Miscellaneous		15,200	15,200
Webers' Lake			
Black Bass		13	13

DISTRIBUTION BY HATCHERIES—1930—Continued

Hatchery	Quantity From Each Hatchery	Total Number From Each Hatchery:
Mud Lake		
Miscellaneous fish	2,867	2,867
Lakes at Madison		
Perch transferred	30,209	30,209
Delta Fur Farm Sloughs		
Miscellaneous Fish	553,403	553,403
Downsville Slough		
Miscellaneous fish	18,250	18,250
Heafford Junction		
Miscellaneous fish	54,250	54,250
Moon Lake		
Crappies transferred	3,000	3,000
Total		338,552,865
Fish from Federal Fisheries delivered by State Fish Cars 1930		
Miscellaneous fish		197,200

ROUGH FISHING OPERATIONS JANUARY, 1929, TO DECEMBER, 1929

Removal of Rough Fish From Northern Waters

		No. of Suckers
April to May	Franklin Lake	16,288
April to May	Big St. Germaine Lake	10,937
April to May	Pelican Lake	15,514
April to May	Forest Lake	147,000
April to May	Butternut Lake	9,513
April to May	Twin Lake	4,300
April to May	Rest Lake	8,236
April to May	Stone Lake	5,014
April to May	Found Lake	3,719
April to May	Lac Vieux Desert	2,700
April to May	Shawano Lake	1,076
Sept. 21 to Oct. 12	Flowage at Mercer	1,916
		226,213

226,213 suckers at 3 lbs. per fish—678,639 lbs.

Removal of Rough Fish From Winnebago District—1929

	Lawyers	Suckers	Garfish	Sheepshead	Dogfish	Carp	Total No. fish	Total Lbs. fish
Jan.	5,689	252	328	3	34		6,306	18,918
Feb.–								
Mar.	2,006	248		250			2,504	7,122
June	3	559	15	5,185	1	10	5,773	17,319
July	9	1,021	21	7,428	20	49	8,548	25,644
August	19	1,104	40	8,749	53	108	10,073	30,219
Sept.	459	755	35	5,834	150	72	7,305	21,915
Oct.	1,487	889	34	3,480	81	17	5,988	17,964
Nov.	1,230	158	2	405	14	2	1,811	5,433
Dec.	5,898	734	734	15	44	4	7,429	22,287
Total							55,737	166,821

Grand total number of pounds of rough fish removed 845,460

ROUGH FISHING OPERATIONS JANUARY, 1930, TO NOVEMBER, 1930

Removal of Rough Fish From Northern Waters

		No. of Carp	No. of Suckers	No. of Garfish
April and May	Pelican Lake		11,975	
	Big St. Germaine Lake		23,525	
	Butternut Lake		16,863	
	Stella and Found Lakes		11,795	
	Plum Lake		1,756	
	Metonga Lake		56,290	
	Madeline and Arbor Vitae Lakes		851	
	Forest Lake		24,495	
	Pine Lake		14,675	
	Rusk Lake		31,006	
	Lost Lake		22,450	
	Lake of the Falls		62,255	
	Tomahawk Lake		11,220	
	Franklin Lake		6,120	
	Lac Vieux Desert		6,500	
April 20—30	Rest Lake		14,456	
April 20—28	Weber's Pond		9	
May 30—June 24	Long Lake near New Auburn			785
October 4	Crystal Lake	2.000	3	
November 15	Brueckbauer's Pond	1.250		
		3,250	316,244	785

320,279 fish at 3 lb. per fish—960,837 lbs.

Removal of Rough Fish From Winnebago District—1930

	Lawyers	Suckers	Garfish	Sheepshead	Dogfish	Carp	Total No. of Fish	Total Lbs. of Fish
Jan.	5,525	616	334	11	53	7	6,546	19,638
Feb.	333	141	236	1	23	3	737	2,211
June	8	1,039	62	22,363	8	31	23,511	70,533
July	8	1,136	39	16,018	55	77	17,333	51,999
Aug.	10	1,534	58	30,466	51	109	33,228	99,684
Sept.	99	1,229	119	11,137	124	158	12,866	38,598
Oct.	1,198	1,380	20	4,030	69	112	6,809	20,427
Total							101,030	303,090

STATE ROUGH FISH CREW

Rough Fish Removal

	Carp	Lbs. Fish
West Bend Pond	766	2,300
Barton Pond	566	1,700
Delavan Lake	8,434	25,300
	9,766	29,300

Grand Total number of pounds of rough fish removed 1,293,227

Inter-Hatchery Shipments—1930

FISH

Bayfield hatchery		
Sent Brule hatchery	200,000	brook trout fingerlings
Sent Deerbrook hatchery	200,000	brook trout fingerlings
Sent Hayward hatchery	200,000	brook trout fingerlings
Madison hatchery		
Sent Wisconsin Rapids	25,000	rainbow trout fry
Osceola hatchery		
Sent Hayward hatchery	15,000	brook trout fingerlings
Sent Wild Rose Hatchery	15,000	brown trout fingerlings
Westfield hatchery		
Sent Madison hatchery	9,525	brook trout yearlings
Sent Wild Rose hatchery	10,000	brook trout yearlings
Wild Rose hatchery		
Sent Wisconsin Rapids	60,000	rainbow trout

EGGS

Madison		
Brown trout eggs	1,110,000	for hatching at Westfield, Sparta and Eau Claire
Rainbow trout eggs	882,000	in exchange for brook trout eggs for St. Croix Falls and Osceola
Wild Rose		
Brown trout eggs	211,200	for hatching at Osceola
Rainbow trout eggs	30,000	for hatching at Wisconsin Rapids
Rainbow trout eggs	782,500	in exchange for brook trout eggs for St. Croix Falls and Osceola
Osceola		
Brook trout eggs	3,458,025	for hatching at St. Croix Falls

SHIPMENTS TO REARING PONDS
1930

Town	Brook Trout	Brown Trout
Algoma	10,500	
Altoona	12,500	
Arcadia		20,000
Argyle		10,000
Barron	10,000	
Beloit		20,000
Berlin		12,000
Bloomington		14,000
Boscobel		12,000
Boyd	7,500	
Briggsville	4,500	
Chippewa Falls	15,000	
Crivitz		22,500
Cumberland	10,000	
Darien		10,000
Durand		18,000
Eagle River	5,000	
Eau Claire	36,000	
Elmwood		22,500
Elroy		4,000
Fall Creek	21,375	25,000
Fennimore		40,000
Fond du Lac		7,200
Gilmanton		22,500
Green Bay		2,000
Hatley	12,000	
Jump River	10,000	
Kilbourn	9,000	8,000
Ladysmith	30,000	
La Farge		20,000
Lancaster		40,000
Laona	28,500	
Lime Ridge		7,000
Luxemburg	7,500	
Manitowoc		14,000
Marathon	9,000	
Menomonie	22,500	
Mineral Point		9,600
Mondovi		22,500
Monroe		20,000
Montfort		25,000
Muscoda		12,000
Necedah		6,000
Neshkoro		12,500
New Holstein		7,500
New London	10,000	
Oshkosh		12,000
Pardeeville	5,250	
Plain		10,000
Platteville		50,000
Plymouth		12,000
Portage	14,625	
Redgranite		19,000
Richland Center		12,000
River Falls		25,000
Schofield	9,000	
Sparta	4,700	
Spring Valley		25,000
Stanley	7,500	
Stevens Point	8,500	
Sturgeon Bay	10,000	
Tomah	7,500	
Tomahawk	10,000	
Two Rivers		14,000
Valley		4,000
Waterloo		25,000
Waukesha		20,000
Waupun		8,400
Wausau	6,000	6,000
Wautoma	8,000	16,000
Wisconsin Veteran's Home, Waupaca		16,000
Wittenberg	7,500	
Woodville		25,000

Fish allotted entirely upon adequacy of ponds.

DIVISION OF GAME

Introductory

The great need of an intensive game management program for Wisconsin, barely begun during the past biennium, is readily apparent to all who have seen the rapid and unfavorable changes which have come to Wisconsin game birds and animals in recent years. The unfavorable changes of game cover and food conditions, the indiscriminate draining of marsh areas, the motor car and the consequent flocking of hunters to the last stands of already seriously depleted game areas, general overshooting, the lack of strategically placed refuges, tardy restocking, the need of winter feeding, unknown game diseases, modern arms and ammunition, the unfavorable balance of predators to game in certain areas, the purchasing and leasing by private individuals and groups of some of the state's finest remaining shooting grounds, the ever-increasing posting of lands and farms, and the new and increasing generation of hunters, all bear directly on the problem of Wisconsin's future game management program.

The scope of the work is great. It includes the education of the public in the rapidly changing game conditions of the state, together with respect for the law enforcement policies which are in effect for the continuation and propagation of our game birds and animals. It includes also restoration of suitable cover and natural foods in the highly developed agricultural sections of the state, and the restoration of cover and food in many other sections. Restoration of marsh areas is important. An annual inventory of the game crop of the state by counties, and a sportsman's individual kill report and questionnaire covering the game crop taken annually, is badly needed.

A proper survey of the value of existing refuges, and recommendations for additional game and wild life refuges, both for upland game birds and animals and for migratory birds are essential. Much thought and money must be expended in keeping migratory waterfowl in Wisconsin during the breeding season and for longer periods in the fall of the year. An investigation as to the necessity of planting duck foods, and establishing resting and feeding grounds for waterfowl will be necessary. Investigation and research of game bird diseases are imperative if the stock of native game birds, and in some cases native game animals, is to be maintained scientifically. Much additional information is needed to maintain the proper balance between predators and game. Money and organization will be needed for a comprehensive plan of winter feeding.

Tardy restocking has caused sportsmen to congest during open seasons in the few remaining game covers where there is a normal

game crop. This may be partly corrected by wide distribution of foreign game birds, such as pheasants and partridge, throughout every available area in the state so that such congestion will no longer be necessary.

Much thought and time, and eventually much money, must be expended to counteract the present policy of individuals and organizations purchasing or leasing Wisconsin's finest hunting grounds for private shooting. The fast increasing posting of lands and farms, and the knowledge that the average sportsman's actual shooting grounds are becoming more confined and limited year by year, presents a major problem. It will require the co-operation of sportsmen throughout the state if the farmer and land owner are to be interested in bringing back to Wisconsin the fine hunting grounds it should have by right of its natural topography and climate.

Much has been accomplished in the past two years. It is merely a beginning, however, and there is need for much thought and work on the problems for the future. Among the major accomplishments of the conservation commission in the game management program from the time of its beginning May 15, 1928, to the close of the biennium June 30, 1930, are:

1. Establishment of a game division headed by a superintendent of game.
2. Establishment and organization of a state game farm with a maximum yearly output of 10,000 ring-neck pheasants and 1,000 miscellaneous game birds.
3. Establishment in connection with the state game farm of a native game bird and animal zoo.
4. Organization of experimental stations at the state game farm which include experimental projects on deer, wild turkey, sharp-tailed grouse, and Hungarian partridge.
5. The stocking of 12,000 ring-neck pheasants in suitable propagation areas throughout the state.
6. The distribution of 22,000 ring-neck pheasant eggs to co-operators throughout the state.
7. The stocking of 70 pairs of imported Hungarian partridge.
8. The experimental stocking of approximately 125 wild American turkeys.
9. The restocking of beaver to suitable localities.
10. A partial survey of the wild life refuge system with recommendations for a more efficient program.
11. A complete game survey of the state through the appointment of state game observers in each county.
12. The establishment of 30 permanent winter feeding stations for ground feeding upland game birds.
13. Establishment of laws requiring game bird and deer farm licenses.
14. A partial survey of a proposed waterfowl refuge system.
15. The publication and distribution of educational bulletins on the hatching and rearing of game birds, on winter feeding, and miscellaneous subjects.

Game Farm

The state game farm, located in Peninsula State Park, Door county, consists of 93 acres which are in actual use for game farm purposes. Housing facilities include a residence for the game farm manager; a building used as temporary quarters for employees; one combination hatching, equipment, and feed house; and one building used as a storage feed house.

There are two large pheasant rearing fields, one of approximately 16 acres and one of about 26 acres, a white-tailed deer and wild turkey field comprising about 16 acres, a sharp-tailed grouse experimental field of seven acres, a Hungarian partridge experimental field of eight acres, an emergency rearing field of seven acres, and a winter holding pen of eight acres. Two hundred stationary breeding pens cover an additional four acres of ground. The farm is completely equipped for the annual breeding, hatching and rearing of 8,000 to 10,000 ring-neck pheasants, with the necessary equipment for an additional output of 1,000 miscellaneous birds.

State Game Farm. View shows sections of hatching field, winter pen, and rearing field planted to corn.

Beginning with a few pens of ring-neck pheasants in the fall of 1928, 284 ring-neck pheasant hens and 54 ring-neck pheasant cocks were reared or purchased and were used as breeders during the 1929 breeding season. In 1929, 9,907 eggs were produced and 4,000 of these were shipped to co-operators. From the remainder of the eggs produced at the farm together with additional eggs purchased, 2,650

birds were reared, and there was a total distribution of 1,791 birds to co-operators in the fall of 1929.

Approximately 850 ring-neck pheasant hens and 20 ring-neck pheasant cocks were retained or purchased for the 1930 breeding season. With a particularly fine record in 1930, 39,700 pheasant eggs were produced at the farm. Of these eggs, 17,500 were shipped to co-operators. Records from 15,435 of these eggs set by co-operators show that 8,124 were hatched and 5,138 birds were reared to eight weeks of age or less. At the state game farm 20,750 eggs were set, using 1,330 setting hens. Twenty men were employed at the game farm during the height of the rearing and shipping season. Fertility records were unusually high, averaging a little better than 96 per cent.

Approximately 10,000 birds were reared to nine weeks of age, 9,200 of which were shipped to co-operators. There are 1,200 birds being retained for use as breeders at the farm for the 1931 breeding season. There were in addition 115 wild turkeys distributed in the Baraboo hills country.

As an example of the drawing power that a game farm has for predatory animals and birds, it is of interest to note the following list of vermin which were trapped at the game farm during the short time it has been in existence:

Great horned owls	35	Skunks	26
Barred owls	15	Woodchucks	511
Sharp-shinned hawks	24	Cats	20
Cooper's hawks	18	Mink	9
Crows	91	Rats	11
Coyotes	1	Weasels	43
Foxes	14	Mice	428

Game Surveys

The first annual survey by counties of Wisconsin game was completed in February 1930, the results of which are listed in the table beginning on page 95. Through efficient and trained game observers, principally conservation wardens and carefully selected sportsmen in each county, this annual count of Wisconsin's game birds and animals will be of increased practical value.

Refuges

There is a total of 397,611 acres of land set aside in Wisconsin for wild life and game refuge purposes. Of this total, 52 private wild life refuges comprise 52,197 acres. Wisconsin private wild life refuges are of unusual size, averaging slightly over 1,000 acres each. Of the 147,456 acres in state game refuges, the largest is the Forest county refuge of 46,080 acres. Sixteen state parks, which by statute are state game refuges, total 197,957 acres, the largest of which is Northern Forest Park in Vilas county which comprises approximately 150,000 acres of land. (See map for detailed location and refuge information.)

Zoning of State With Species Adapted for Each Locality

For the purposes of efficient game administration, Wisconsin has been divided into four principal game districts (see map on page 88).

The general characteristics of the northern district, including 22 counties, are: moderate to little agricultural development with lumbering still an important industry, and with some forestry being practiced. There are many thousands of lakes and streams of various sizes and depths. Industrial development is slow. The region offers opportunities for exceptional recreational development.

The principal game birds and animals of the northern district include: white tailed deer, varying hare (snowshoe rabbit), ruffed grouse, sharp-tailed grouse, and prairie chickens. Black bear, brush wolves, red and grey foxes, beaver, raccoon, skunk, mink, muskrats, cottontail rabbits, and squirrels are fairly plentiful in many sections. Many of the lakes and rivers offer excellent wild duck and goose hunting up to November 1.

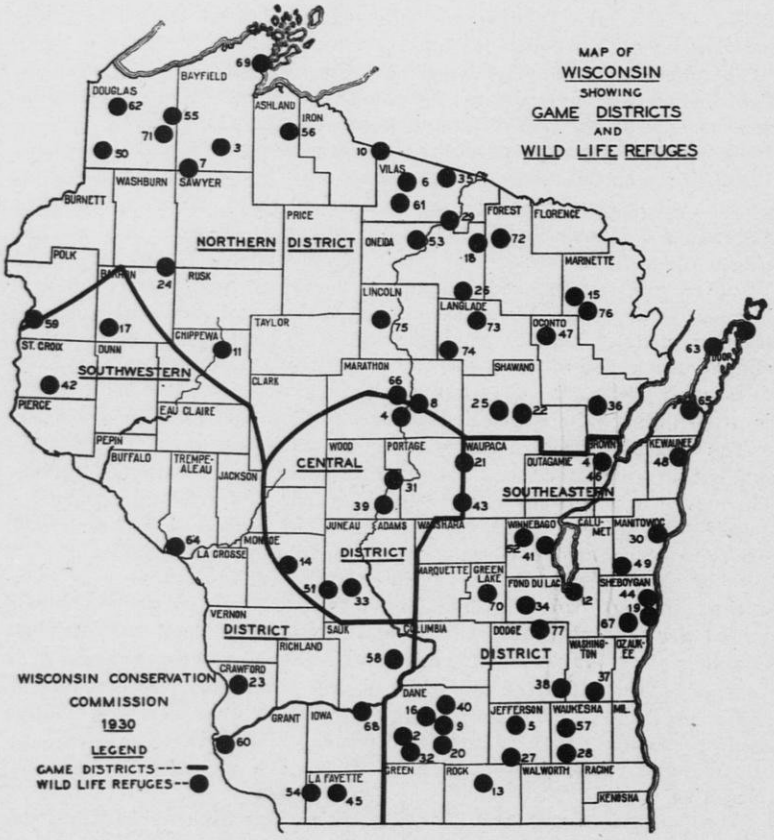
The general characteristics of the southwestern district, of 17 counties, include fair agricultural development with an almost entire absence of swamps, marshes and lakes, except along river courses. Industrial development is slow. In many parts of Iowa, Grant, and Lafayette counties there exists what may be termed as a "game desert" where cover and food are so deficient as to exclude game birds and animals in numbers sufficient for hunting. Wooded ravines and ridges occur in the upper two-thirds of the district.

Ruffed grouse, ring-neck pheasants, bobwhite quail, cottontail rabbits and squirrels are the most common varieties of game in the southwestern district. There are few deer and beaver. Foxes, raccoon, skunks, mink, and muskrat are fairly plentiful in isolated areas. Wild ducks and geese are fairly abundant along the river bottoms. There is a sprinkling of sharp-tailed grouse, prairie chicken, and woodcock.

The central district of six counties has moderate agricultural development in some sections, but with little or no development in the abandoned drainage districts. Marsh, brush, and grass areas are extensive, but generally not wet enough to be attractive to waterfowl. There are large areas of second growth jackpine and scrub oak. The few lakes are isolated. Local industrial development is not widespread through this section. Sharp-tailed grouse, prairie chicken, ruffed grouse, cottontail rabbits, and white-tailed deer are the most common of the game birds and animals. Brush wolves, red and grey foxes, beaver, and otter are more or less common. Raccoon, skunk, mink, muskrats, and squirrels are plentiful in some sections. There is an occasional covey of quail and woodcock seen along the drainage ditches and creek bottoms. Wild ducks are plentiful in but few localities.

The southeastern district of 26 counties, has high agricultural development. There are numerous scattered areas of from half an acre to several thousand acres of open marsh and tamarack swamps. Lakes are numerous, ranging from deep, weedless lakes, such as Green Lake in Green Lake county to shallow, weedy lakes such as

Puckaway lake, also in Green Lake county, and of all sizes from ponds to Lake Winnebago. Desirable game cover and food is insufficient largely due to over grazing. Industrial development is high, with a consequent intensive hunting within driving distance of most cities. The southeastern section is particularly adapted to the English ring-neck pheasant and Hungarian partridge. Cottontail rabbits are plentiful in some counties. Squirrels are plentiful in but isolated sections. It is here in the southeastern district that Wisconsin sportsmen get their best wild duck and goose hunting. Snipe, plover, rail, and rice hens are abundant in many localities. Foxes, raccoon, skunk, mink, and muskrat are common in some counties.



WILD LIFE REFUGES AND PRIVATE GAME REFUGES

	Name	County	Acres
1.	Hotz Refuge	Door	2,209
2.	Vernon Valley Refuge	Dane	1,610
3.	Lake Owen Wild Life Refuge	Bayfield	1,082
4.	Mosinee Refuge	Marathon	818
5.	Aztalan Refuge	Jefferson	190
6.	National Playground Association	Vilas	1,504
7.	Sawyer County Refuge	Sawyer	360
8.	Izaak Walton Game Preserve	Marathon	375
9.	Lake Wingra Wild Life Refuge	Dane	500
10.	Constance Lake Reserve	Vilas	1,170
11.	Park Island Game Refuge	Chippewa	232
12.	Taycheedah Wild Life Refuge	Fond du Lac	2,000
13.	Overcrest Refuge	Rock	925
14.	Valley Farm Refuge	Monroe	849
15.	Silver Cliff Refuge	Marinette	200
16.	University Bay Wild Life Refuge	Dane	402
17.	Mesenbring Ranch	Barron	906
18.	Ferndale Place	Oneida	163
19.	Forest Preserve Refuge	Sheboygan	2,102
20.	Foxhall Wild Life Refuge	Dane	285
21.	New Hope Iola Wild Life Refuge	Waupaca and Portage	886
22.	Marquardt Wild Life Refuge	Shawano	500
23.	Stoehr's Reserve	Crawford	220
24.	Lakedale Reserve	Washburn	195
25.	Seneca Wild Life Refuge	Shawano	320
26.	Kraftwood Refuge	Langlade	283
27.	Duell Acres	Jefferson	319
28.	Red Brae Farms	Waukesha	504
29.	Otter Rapids Wild Life Refuge	Vilas	213
30.	Manitowoc Co. Fish and Game Ass'n.	Manitowoc	520
31.	Lake Biron Wild Life Refuge	Wood	1,650
32.	Harker Wild Life Refuge	Dane	493
33.	Peterson Wild Life Refuge	Juneau	160
34.	Randall Wild Life Refuge	Fond du Lac	2,240
35.	Forest Lake Wild Life Refuge	Vilas	1,160
36.	Morgan Wild Life Refuge	Oconto	680
37.	Camp Minikani Wild Life Refuge	Washington	187
38.	McDonald Wild Life Refuge	Dodge	825
39.	Tri-City Wild Life Refuge	Wood	3,500
40.	Mendota State and Memorial Hospital	Dane	538
41.	Northern Hospital Wild Life Refuge	Winnebago	650
42.	St. Croix Reserve No. 1	St. Croix	320
43.	I. W. L. Chain O' Lakes Chapter No. 200	Portage and Waupaca	1,100
44.	Kohler Game Refuge	Sheboygan	2,200
45.	Lafayette County Wild Life Refuge	Lafayette	970
46.	Oneida Golf and Riding Club	Brown	740
47.	Archibald Wild Life Refuge	Oconto	3,420
48.	Krohn's Lake Wild Life Refuge	Kewaunee	1,697
49.	Manitowoc Co. Fish and Game No. 2	Manitowoc	735
50.	Tamarack Farm	Douglas	3,840
51.	Elroy Gun Club Refuge	Juneau	2,450
52.	Winchester Wild Life Refuge	Winnebago	800
	Total acres		52,197

STATE PARKS

	Name	County	Acres
53.	American Legion	Oneida	36,000
54.	Belmont	Lafayette	2
55.	Brule	Douglas	640
56.	Copper Falls	Ashland	520
57.	Cushing	Waukesha	8
58.	Devils Lake	Sauk	1,400
59.	Interstate	Polk	580
60.	Nelson Dewey	Grant	1.650
61.	Northern Forest	Vilas	150,755
62.	Pattison	Douglas	660
63.	Peninsula	Door	3,400
64.	Perrot	Trempealeau	910
65.	Potowatomi	Door	1,100
66.	Rib Hill	Marathon	160
67.	Terry Andrae	Sheboygan	112
68.	Tower Hill	Iowa	60
	Total acres		197,957

STATE WILD LIFE REFUGES

	Name	County	Acres
69.	Bayfield County	Bayfield	650
70.	Black Hawk Refuge	Green Lake	47
71.	Douglas County	Douglas	24,960
72.	Forest County	Forest	46,080
73.	Langlade County No. 1	Langlade	10,880
74.	Langlade County No. 2	Langlade	14,080
75.	Lincoln County	Lincoln	7,680
76.	Marinette County	Marinette	3,080
77.	Horicon Marsh	Dodge	40,000
	Total acres		147.457
	Grand Total		397.611

Experiments in Propagation and Planting

Experiments in the propagation and planting of game birds and animals during the biennium have necessarily been limited because of a lack of specific information in regard to the best planting areas, the lack of time in which to make proper research, and the lack of necessary funds. When it is considered that prior to the present biennium there were no experiments with either the propagation or planting of game birds or animals, much has been accomplished during the two years past. Experiments with pheasant propagation and other game birds at the game farm, using both artificial and natural methods, have proved conclusively that up to the present time the natural method of hatching and rearing pheasants for stocking purposes is much more satisfactory from the rearing and economical standpoint than the hatching, brooding, and rearing of these birds by artificial means. Many difficult problems have been encountered in the artificial rearing of pheasants. There is no doubt but that

eventually artificial methods will be practicable, but much experimental work will be necessary to make them so.

With Hungarian partridge the natural propagation method only has been used in a single experiment. Six pairs of partridge were placed in an eight acre field which provided sufficient cover and nesting sites, and they were undisturbed during the breeding and rearing season. Approximately 35 young birds were reared in this experiment, the majority of which have been trapped and brailed. Inasmuch as the propagation of Hungarian partridge in captivity is extremely difficult results were gratifying.

Ring-neck pheasant cocks. State Game Farm.

Natural propagation methods only have been also applied to experiments with sharp-tailed grouse. Six pairs of birds were placed in a seven acre field with sufficient cover and food. Fifty per cent of the breeding birds were either killed by predators or by flying into the wire fence. Two small broods were reared, one of four and one of three birds. This success is encouraging and indicates that with proper methods the propagation of sharp-tails in captivity is feasible, at least from an experimental standpoint.

An experiment with wild American turkeys was conducted solely along natural lines, with the birds being allowed to lay and hatch their eggs under natural conditions in the 16 acre combination deer and wild turkey field. Approximately 75 young birds were reared in this field. There was practically no loss. In the event of future plantings of wild turkeys by the state, sufficient stock can easily be reared at the game farm under this system at a comparatively small cost and with but little effort.

Approximately 60 grey mallard ducks were reared by setting hens or by allowing the ducks to hatch their own eggs and rear their

young. Because of lack of water and nesting facilities, and because of the impracticability of stocking any migratory game birds at this time, it is deemed advisable to discontinue further migratory bird experiments in the immediate future.

For the greater part, efforts in stocking pheasants have been concentrated in the southeastern and southwestern districts, and approximately 500 birds have been stocked in the northern and central districts for experimental purposes in considering the advisability of

Close-up of Bald American Eagle screaming in the State Game Farm Zoo.

future stocking in these sections. Particular observations will be made as to the adaptability of pheasants to so-called prairie chicken country, and to the relation of the pheasant to the prairie chicken and sharp-tailed grouse in this country.

Seventy pairs of Hungarian partridges were stocked in the southeastern and southwestern sections in the spring of 1930. Much research work is necessary with respect to the proper planting of partridge.

Approximately 115 wild turkeys have been stocked in a centralized experimental planting in the vicinity of the village of Poynette in the Baraboo hills region. There have been gratifying reports on the success of the experiment to date, inasmuch as several turkey

hens have hatched and reared broods of young, and about 100 young turkeys have been counted by observers.

Thirty grey mallard duck hens have been shipped to the Moon Lake refuge from the state game farm, to be brailed and liberated by the Izaak Walton League. No information is available on these birds at this time.

Private Game Farms

From January 1, 1930 to July 1, 1930, 58 game bird farm licenses were issued by the game division. The farms vary in size from half an acre to about 20 acres. Game birds licensed at the issuance of

Native Wisconsin Wildcat. State Game Farm Zoo.

these licenses included 1,641 ring-neck and other game pheasants, 113 ornamental pheasants, 132 quail, 483 wild ducks, 216 wild geese, 14 Hungarian partridges, and 55 wild turkeys. The birds registered were principally for breeding, and the yearly production of these farms is many times the total. It can be conservatively estimated that 15,000 game birds were reared on licensed game bird farms in Wisconsin in the period from April 1 to July 1, 1930.

Private Deer Farms

There are at present 10 licensed deer farms in Wisconsin. A total of 72 deer were registered at the time of issuing the licenses. The farms vary in size from the smallest of four acres to a farm near Shawano which contains 800 acres.

Private Fur Farms

Fur farms have been established in Wisconsin since 1923. There were but five licenses issued in that year. In 1924 the licenses increased to 78, in 1925 to 157, in 1926 to 332, in 1927 to 661, in 1928 to 1,198, in 1929 to 1,735, and in 1930 to 2,230. Several hundred licenses have been cancelled since they were issued, but at the present time there are approximately 500 licensed muskrat fur farms, 61 beaver fur farms, and 1,050 combination fur farms which include the breeding of otter, fisher, marten, skunk, mink, and raccoon. The largest fur farms are located in Waupaca and Winnebago counties, with the exception of one exceptionally large muskrat farm, consisting of 5,380 acres in Trempealeau county on which there were estimated to be 5,000 muskrats at the time the license was issued in 1929. The largest beaver fur farm is located at Stevens Point. Here there are 32 beaver kept in pens for experimental purposes. During 1928 and 1929 there were approximately 75,000 muskrats, 400 raccoon, 350 mink, 700 skunk, and 350 beaver pelted on licensed fur farms, for which the value received was about $130,000.00.

Game Farm Zoo

The state game farm zoo, exhibiting only native game animals and birds of Wisconsin, has proved to be most interesting and educational to game farm visitors. Included in the list of birds and animals exhibited are: bald eagles, great horned owls, barred owls, red-tailed hawks, rough-legged hawks, Cooper's hawks, sharp-shinned hawks, sparrow hawks, white-tailed deer, black bear, brush wolves, wildcats, red foxes, grey foxes, badgers, raccoon, mink, weasels, snowshoe hares, cottontail rabbits, mallard ducks, black ducks, and wood ducks.

The approximate number of visitors during the 1930 season totalled 17,500. On July 4, 1930 it is estimated that 2,000 people visited the farm. The number of visitors on a Sunday averaged 200.

Fur Farm Investigation

During the biennium the investigation of applications for fur farms was assumed by the division of game. Three kinds of fur farm licenses are provided for by the statutes for (1) muskrat, (2) beaver, and (3) general, which include raccoon, mink, marten, fisher, otter, and skunk.

Before licenses can be issued for muskrat and beaver farms, an investigation must be made of the lands covered by the application, and the number of animals living on the land must be estimated. These animals are sold to the applicant by the commission.

A field investigator carries on this checking work and also gives advice on fur farm matters. His duties include besides the investigation of new applications, the checking of established fur farms, and the sales and shipments of fur.

GAME POPULATION—1929

County	R.	S.T.G.	P. G.	RG	Deer	Bear	Beaver	P	G	Q	H	Ducks	S. R.	C. R.	Sq.
Adams	S	N	1,000	S	S	N	S	N	S	S	N	S	S	S	A
Ashland	S	2,000	500	F	1,000	S	500	700	N	N	N	S	S	S	N
Barron	F	400	200	S	200	S	100	60	N	50	N	S	S	A	S
Bayfield	F	4,000	1,000	S	1,000	S	500	200	N	N	N	S	F	S	F
Brown	F	N	500	S	N	N	N	400	S	100	N	S	S	S	S
Buffalo	F	N	200	S	N	N	10	50	N	2,000	N	F	S	F	A
Burnett	A	4,000	1,000	F	600	S	50	50	S	50	N	S	S	S	S
Calumet	F	N	500	F	50	S	N	250	S	50	N	S	A	A	A
Chippewa	F	500	500	S	1,000	S	1,500	50	N	50	N	S	F	A	S
Clark	F	5,000	1,000	F	500	S	500	20	N	100	N	S	N	A	F
Columbia	F	N	500	S	100	N	N	200	S	5,000	N	S	N	A	F
Crawford															
Dane	F	N	500	F	N	N	N	600	1	5,000	N	S	N	A	F
Dodge	S	N	50	N	N	N	N	50	N	100	N	S	N	A	S
Door	F	N	100	F	200	S	N	300	S	N	N	F	S	S	F
Douglas	F	5,000	500	S	1,000	S	100	50	N	N	N	S	S	S	F
Dunn	F	N	200	F	10	S	10	N	N	500	N	S	F	A	F
Eau Claire	F	1,000	1,000	F	1,000	S	1,000	200	N	5,000	N	S	F	S	S
Florence	S	N	50	S	1,000	S	100	N	N	N	N	N	S	S	N
Fond du Lac	S	N	400	S	N	N	N	1,000	N	500	N	S	N	S	F
Forest	S	50	100	S	1,000	N	100	50	S	N	N	F	F	A	N
Grant	F	N	100	S	S	N	N	200	N	5,000	N	F	N	A	F
Green	F	N	400	S	N	N	N	400	N	1,000	N	F	N	A	F
Green Lake	F	N	5,000	F	15	N	N	1,000	N	5,000	N	S	N	A	S
Iowa	F	N	100	S	50	N	N	200	N	5,000	N	S	N	A	S
Iron	S	500	100	S	1,000	S	1,000	N	N	N	N	S	F	S	F
Jackson	A	5,000	500	F	1,000	S	10	100	N	500	N	F	S	F	S
Jefferson	F	N	500	S	N	N	N	1,000	N	5,000	N	S	N	F	S
Juneau	F	5,000	1,000	S	500	N	100	200	N	500	N	S	S	S	F
Kenosha	F	N	50	N	N	N	N	1,000	N	N	N	F	N	F	S
Kewaunee	F	N	100	S	N	N	N	N	N	N	N	S	N	S	S
La Crosse	F	N	500	S	N	N	N	200	S	5,000	N	S	N	A	S
Lafayette	A	N	100	S	N	N	N	500	N	5,000	N	S	N	A	S
Langlade															
Lincoln	S	100	500	F	2,000	S	20	100	N	S	N	S	A	A	N
Manitowoc	F	N	100	F	100	N	N	300	N	N	N	S	F	A	N
Marathon	F	50	1,000	S	100	S	10	200	N	S	N	S	F	F	S
Marinette	A	2,000	1,000	S	1,000	S	50	60	F	N	N	S	F	S	N
Marquette	F	N	2,000	S	500	N	10	50	S	5,000	N	F	F	A	F
Milwaukee	S	N	N	N	N	N	N	N	N	N	N	F	N	S	S
Monroe	A	50	1,000	S	100	N	N	200	N	50	N	N	N	A	F

GAME POPULATION—1929—Continued

County	R.	S.T.G.	P. G.	RG	Deer	Bear	Beaver	P	G	Q	H	Ducks	S. R.	C. R.	Sq.
Oconto	A	500	3,000	S	1,000	S	N	150	N	100	N	F	F	A	F
Oneida	S	N	500	S	1,000	S	N	100	N	N	N	F	F	F	N
Outagamie	S	N	1,000	S	N	N	N	1,000	N	N	N	S	S	S	S
Ozaukee															
Pierce	A	N	4,000	S	N	N	N	600	N	5,000	N	F	N	A	F
Polk	F	N	1,000	S	100	N	N	100	S	50	N	S	S	F	F
Portage	S	500	4,000	S	50	N	50	40	N	50	N	S	F	F	F
Price	S	2,000	2,000	S	1,000	S	200	25	N	N	N	S	F	S	F
Richland	A	N	100	S	100	N	N	500	S	5,000	N	F	N	A	F
Rock	S	N	100	N	N	N	N	2,000	S	5,000	F	F	N	A	S
Racine															
Rusk	F	1,000	1,000	S	500	S	500	25	N	50	N	S	F	S	F
Sawyer	F	3,000	100	F	1,000	S	500	25	N	100	N	S	F	S	F
Shawano	F	100	5,000	S	500	N	100	300	N	50	N	F	S	F	F
Sauk	F	N	100	S	100	N	N	500	N	5,000	N	S	N	F	F
St. Croix	F	50	1,000	S	25	N	N	500	S	100	N	S	N	F	F
Sheboygan	F	N	250	S	10	N	N	50	S	50	N	S	N	F	F
Taylor	S	500	500	S	500	S	100	20	N	N	N	S	F	S	F
Trempealeau	F	N	100	F	10	N	N	200	N	1,000	N	S	N	S	F
Vernon	S	N	N	S	N	N	N	50	N	1,000	N	N	N	S	F
Vilas	S	500	500	S	1,600	S	300	N	N	N	N	S	F	S	F
Walworth	S	N	1,000	S	N	N	N	1,000	S	500	A	S	F	S	F
Washburn	F	2,000	500	F	1,000	S	50	200	S	N	N	S	F	F	F
Washington	A	N	100	S	N	N	N	1,000	N	100	N	S	N	A	F
Waukesha	F	N	50	S	N	N	N	2,000	N	500	S	S	N	F	F
Waupaca	F	50	1,000	S	100	N	N	100	N	500	N	F	F	F	S
Waushara	F	N	2,000	F	N	N	N	100	N	500	N	S	N	S	F
Winnebago		N	500					500							
Wood	F	10,000	5,000	S	500	N	50	N	N	500	N	S	S	S	S

N—None
S—Scarce
F—Fair
A—Abundant

R —Raccoon
S. T. G. —Sharp-tailed grouse
P. G. —Pinnated grouse (prairie chicken)
R. G. —Ruffled grouse (partridge)
P —Pheasant
G —Geese
Q —Quail
H —Hungarian partridge
S. R. —Snowshoe rabbit
C. R. —Cottontail rabbit
Sq. —Squirrel

DIVISION OF LAW ENFORCEMENT

Introductory

From the earliest traditions of human history it has been held that man had the right to reduce wild animals, fish and fowl to his possession and that by so reducing them to his possession, they became his absolute property.

In the records from ancient countries, from the old Roman law in particular, we find that authorities have always held that wild animals belong to no one in particular while wild, and that he who first reduces them to possession becomes their absolute owner even though such wild animals are found and taken on property belonging to another.

Since modern, orderly governments came into existence, this ancient idea has been modified somewhat. Ownership of all things wild by nature has come to rest in the state, and it is recognized today that such wild animals, birds and fish are subject to regulations of some governmental power. Modern opinion still holds that all things wild by nature become the property of him who first reduces them to possession, but modern laws specify the means by which wild animals can be taken into possession.

Regulatory laws regarding wild animals, birds, and fish have been a part of the common codes in European countries for many centuries. But in America it was not until wild game became perilously near the point of extermination that governmental powers began to be concerned about its care. When the danger of extermination made itself apparent, America did its best to legislate the conservation of all wild things in a hurried, impulsive way.

As a consequence, each of the 48 states and the several territories developed codes of game laws of varying effectiveness. Since the first attempts at the creation of codes of game laws, about the middle of the last century, there have been constant changes. Science is gradually replacing sentiment, and as a result, game laws are being based more and more upon facts which are discovered through research and investigation.

When states established codes of game laws it became necessary to have law enforcement groups to enforce them. The creation of these forces for law enforcement created a new type of officer—the game warden.

The necessity for enforcement officers in the United States was keener than in other countries. In European countries, although perhaps the actual ownership of the birds, fish and animals may not have been vested in the property owner, he did have and still does have, a very definite voice in prescribing how and when the game

could be taken. This gave him a direct and personal interest in the game. Because the taking of the game represented a possible source of income for him, the property owner was anxious to protect it. Hence, public officers were not as important as they might have been in Europe.

In the United States the title to all things wild by nature rests wholly in the state, and the state and only the state, has the power to specify how, by whom, and when things wild by nature can be reduced to personal possession. This theory operates regardless of the property owner upon whose land the wild game lives, and it also extends to the fish in a stream flowing over a property owner's land. This theory tended to preclude direct and personal interest in the protection of game by individuals, and developed the necessity of public officers.

History of Law Enforcement

Wisconsin began a game protection program about the same time, relatively, that older states did. The first law, April 12, 1887, created offices for four game wardens whose annual salary was $600. The first paragraph of this law follows:

"It shall be the duty of the governor, upon the passage of this act, to appoint four persons to be known as game wardens, whose duty it shall be to secure the enforcement of all statutes of this state for the preservation of fish and game; to bring or cause to be brought actions and proceedings in the name of the state of Wisconsin to recover any and all fines and penalties, and to punish all violations of said statutes. Such game wardens shall hold their office for the term of two years from the date of such appointment and until their successors shall be appointed and qualified, and any vacancy during such term shall be filled by the governor. Such game wardens may appoint one or more deputies for each county, who shall have all the authority of the game wardens except as herein otherwise provided. Such deputies shall receive no salary but shall be entitled to the same fees as constables now receive in criminal cases for like services and paid in like manner. Such deputies may be removed at any time and their places filled by the game warden who appointed them."

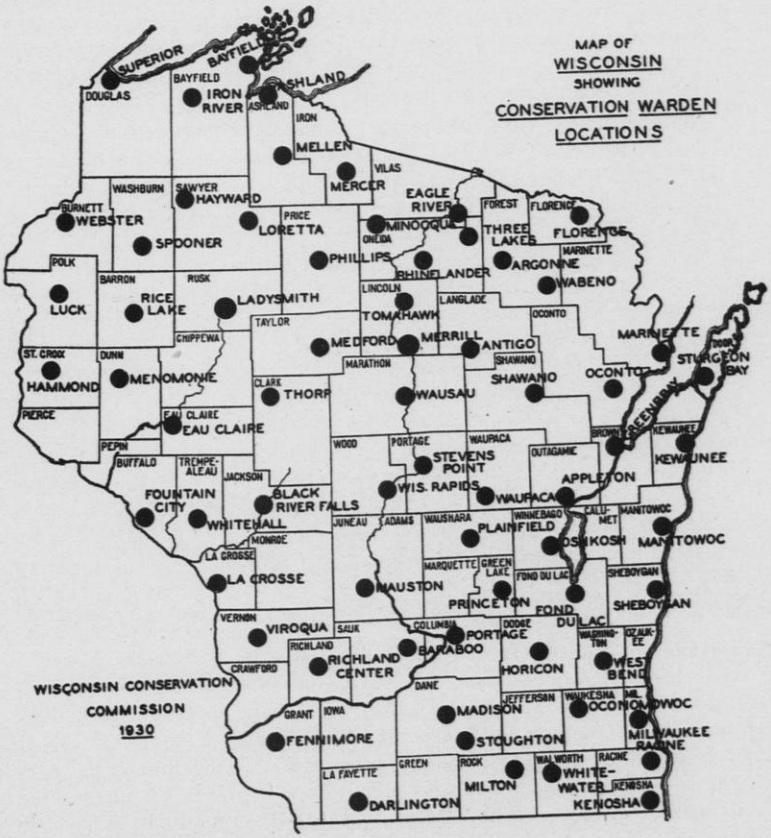
Two days later, April 14, 1887, Governor Lucius Fairchild signed an act which provided for the appointment of three persons, citizens of the state, as fish wardens. Their duties were primarily the supervision of the commercial fishing on the Great Lakes.

In 1891 the offices of fish wardens and of game wardens were abolished and in their stead was created the office of state fish and game warden. His term lasted for two years. The state fish and game warden had the power to appoint one or more deputies in each county. Deputies did not receive any salary, but did receive fees. All sheriffs, deputy sheriffs, coroners, and police officers, including constables, were declared to be ex officio deputy fish and game wardens.

This type of administration continued for many years. An interesting addition to the duties of deputy wardens, and one which is rather indicative of a change and combination to come later, is that in 1898

all deputy fish and game wardens were declared to be deputy fire wardens.

During the 24 years in which the state fish and game warden department existed, changes of administration brought changes in the state fish and game warden office. Laws were added and modified with each session of the legislature, and the scope of the department kept increasing constantly. The conservation of the state's game and fish



resources grew and developed commensurately with the conservation of other natural resources in the state.

In 1915 the several state departments concerned with the conservation of natural resources were combined into a state conservation commission. These included the state fish and game warden department, the state board of forestry, the state park board, and the fisheries commission. This conservation commission was composed of three executive officers under whose supervision the various conservation activities were carried on.

During the period immediately preceding and following 1915 there were great advances made in the law enforcement phase of conservation. With the formation of the new conservation commission, all field men were notified that political activity would no longer be the measure of their tenure in office. This was an important step toward replacing efficiency for expediency in the selection of officers.

The selection of game wardens in Wisconsin has been on the basis of competitive examination since the first civil service law was passed in 1905. Following the combination of the game warden department with the other conservation departments, the examinations were made more stringent and comprehensive. The civil service method of employing men became the only method.

It was during the time of the first combined conservation commission that the title of the law enforcement officers in the field was changed from "deputy game warden" to "deputy conservation warden" —a change in name indicative of a change of idea. The name adopted in 1915 is still used.

In 1923 the three man commission was changed to a one man commissioner form, which continued until 1927. Under the one man type the state was divided into six districts, and a district conservation warden was put in charge of each, supervising the work of the deputy wardens in the district. Each of the district wardens was responsible directly to the conservation commissioner.

But this form of administration was unwieldly and in 1925 the conservation commissioner appointed a chief conservation warden as a superior officer over all district wardens and deputies, and responsible to the commissioner. This form was retained when the present six man commission was created in 1927, except that the offices of district wardens were abolished. With the single change of title of the head of the division from chief conservation warden to superintendent of law enforcement in 1929, this form still continues.

Importance of Conservation Law Enforcement

It is impossible to estimate the value of Wisconsin's resources of fish, game, and fur. The game fish of the inland waters play a leading part in attracting to Wisconsin the millions of tourists who in 1929 spent more than $134,000,000 in this state. The commercial fishing of the Great Lakes and the Mississippi provides an income for thousands of citizens. The sale of furs taken annually in Wisconsin by hunters and trappers assumes great proportions as does the food value of all the game and fish which is used by those who get it.

These monetary values are tremendous but they do not represent the total value of the state's wild life resources. There is an aesthetic value that cannot be reckoned in dollars and cents but that is none the less real.

There are just two ways by which Wisconsin may be assured a continuance in increased numbers of these wild life resources, either of which is likely to fail if not supplemented by the other. These two are protection and production—protection of what now exists as

well as that which is to be produced; and production to answer the ever increasing demands for more game and fish.

Looked at in this way conservation law enforcement assumes tremendous significance. But there is still another reason that adds to this significance. The financial success of the conservation program in Wisconsin is due largely to the vigilance and efficiency of its officers. This is true because conservation in Wisconsin, aside from forestry, pays its way entirely from money earned by the sale of licenses, tags, sale of confiscated goods, etc. Having an efficient force of wardens in the field is a tremendous stimulus to the sale of licenses, which augments the revenue of the commission and makes possible further activities.

"The Admiral." Green Bay and Lake Michigan enforcement boat with headquarters at Green Bay. Picture taken on return from a stormy, winter cruise.

Status at Beginning of Biennium

The period preceding the biennium was one of readjustment for the division of law enforcement. During the preceding biennium the offices of district wardens were abolished, and the chief warden assumed the responsibility of supervising all warden activities in the state. The office of the chief was moved from Antigo to Madison. Still another readjustment was brought about by the decision of the commission that all field men should equip themselves with standard uniforms.

At the close of the biennium 1926–1928 there were 62 regular conservation wardens. The record made by these men, the best ever made in a like period of time previous to the present biennium, reflects favorably both on the quality of officers and the public sentiment in most of the communities in which they worked.

WARDEN RECORD TOTALS

Decade 1920–1930

Year	Arrests	Seizures	Fines
1920–21	1,030	693	$45,755.00
1921–22	1,205	794	50,065.00
1922–23	793	644	36,095.00
1923–24	526	269	20,760.00
1924–25	605	318	26,485.00
1925–26	1,049	561	45,500.00
1926–27	1,210	893	50,885.00
1927–28	1,438	941	57,068.50
1928–29	1,556	1,257	54,475.00
1929–30	2,085	1,688	71,960.00
Total for decade	11,497	8,531	$459,048.50

Obstacles to the Program

Absence of favorable public opinion toward game law enforcement, as reflected in certain district attorneys' offices and courts, is still the greatest handicap in preventing game law violations in Wisconsin. In some counties it is almost impossible to secure conviction of a violator. It is rather interesting to note that those counties whose courts and district attorneys are the worst offenders in this regard are the counties whose economic welfare is most dependent upon a wise administration of its wild life resources.

This attitude may be reduced eventually, but it cannot be reduced without an extreme change in public opinion in certain sections of the state.

Conservation wardens have to cope with two kinds of violators. The one which presents the lesser problem is the unintentional or accidental violator. A policy of seeking to prevent violations rather than merely to punish violators is working out excellently with this type of violator. Publication of conservation rulings and laws, warnings by wardens, and the mere known and advertised presence of wardens in communities has an excellent effect in deterring the casual violator.

But the other type and one which presents the greater problem is the habitual and intentional violator, particularly the one who violates for commercial purposes. This type cannot be changed by warning. The only recourse left to the officer is arrest. Proper cooperation from district attorneys and courts will bring severe sentences upon these commercial and habitual violators which will in the end reduce this vicious type of violation.

Selection of Officers by Competitive Examination and Trial

Appointment to a position as conservation warden depends entirely upon the mental, moral, and physical fitness of the applicant. Applicants for warden positions must pass what is probably the most comprehensive examination given by the State Bureau of Personnel, and in addition to passing an examination, must stand up under two actual tests of warden work.

The examination is competitive and consists of four parts. The first is the application and medical certificate of physical fitness which each applicant must file with the bureau of personnel prior to the time of the examination. This states his general qualifications for the position.

The second part is the written test, which is held by local examiners of the bureau of personnel in the various county seats. The sets of questions and a list of eligible candidates are sent to each of the local examiners by the Madison office of the bureau of personnel, and notice is also sent to each eligible candidate. This written quiz

"The Hornet." Lake Superior enforcement boat with headquarters at Ashland.

consists of 250 questions, most of which concern conservation and law enforcement matters. These questions are formulated by officials of the bureau of personnel in co-operation with the superintendent of law enforcement.

The third part of the examination is practical, in which each candidate attempts to classify 30 marked birds—game, song, and unprotected—and pelts of approximately 20 animals. These birds and animals are native to Wisconsin, and complete knowledge of them is essential to the successful performance of a warden's duties. In this part of the examination, besides the identification of the mounted birds and animal pelts, each candidate must name and classify 35 varieties of fish and approximately 65 native birds and animals from colored plates.

The fourth part of the examination is oral, conducted by the director of the bureau of personnel and the superintendent of law enforce-

ment. This oral quiz is to determine the personal fitness of the candidate for the work of a conservation warden, and is comprehensive in scope. Upon certification, a man is given a probationary appointment by the conservation commission to work for 60 days with an older warden. If the candidate makes good on this appointment he is sent out alone, and if he proves satisfactory he may be recommended for regular employment.

New Districts

In the last biennial report of the commission it was recommended that wardens be placed at Fond du Lac, Richland Center, La Crosse, Kenosha, Wausau, Florence, Goodman, Solon Springs, Mauston, Menomonie, and Star Lake. During the biennium just closed, seven of these posts, and two others, have been filled. The new posts are: Florence, Fond du Lac, Kenosha, Mauston, Menomonie, Richland Center, Sturgeon Bay, Wausau, and West Bend.

New Equipment

During the past two years the conservation commission has been equipping the law enforcement division with boats, engines, field glasses, and other equipment so that the officers might better cope with any type of violation.

A 50 foot boat, the "Admiral", fully equipped in every way, has been built and stationed at Green Bay. This boat is used in enforcement work concerning outlying water commercial fishing, and also to plant lake trout and help supervise spawn taking in Green Bay and Lake Michigan waters.

A 26 foot boat, the "Hornet", has been purchased and stationed at Ashland for supervising and inspection work on the reserve waters of Lake Superior.

A small 18 foot cabin boat, the "Wasp" with outboard motor attached, has been built for patrol work on the Mississippi river and stationed at La Crosse. It is used to patrol the waters of the river from Lake Pepin to the southern Wisconsin border.

Besides these large boats a number of smaller boats, canoes, and outboard motors have been purchased and placed at warden stations throughout the state where they can best be used for patrolling rivers and lakes.

Warden Schools

During the biennium the commission revived an older policy of conducting warden schools. One of the purposes of the schools is to acquaint each warden with the work of other parts of the state so that any conservation warden may be transferred to a distant district at a moment's notice and be able to cope with situations he might find there. Another purpose of the schools is to teach the wardens how they may co-operate more effectively with other divisions of the conservation commission, and to coach them in matters pertaining to enforcement work and court procedure.

The schools in the biennium were held early in March of 1930. The schools lasted for two days each and were held in Ladysmith, Antigo,

and Madison. Every warden in the state attended one of these three schools.

The Noyes Conservation Warden Efficiency Award

With the idea of instilling a feeling of friendly competition among conservation wardens and urging them to do even better work, Commissioner Haskell Noyes of Milwaukee offered to present a silver cup to the warden making the best record during each year, which for purposes of the award runs from December 1 to December 1. Each warden winning the cup will have his name engraved upon it.

The bases of judgment for selecting the best warden each year include the methods with which he handles his cases and seizures, his citizenship and general appearance, his co-operation with other departments, his care in making reports and answering inquiries, and any unusual service rendered by the warden.

Each of the six conservation commissioners, the director, the deputy director, and each division head will select the five conservation wardens who in his opinion are most deserving of the award. After receiving all recommendations, a central judging committee consisting of one commissioner to be chosen by the commission, the director, and superintendent of law enforcement will select the winning warden from those recommended by the executive heads of the commission. Decision shall be made entirely upon the basis of the recommendations.

Conservation Warden Uniform

In 1927 the conservation commission passed a resolution to the effect that all regular conservation wardens equip themselves with standard uniforms. The first uniforms failed to meet requirements and care was taken that the second uniform would be satisfactory.

Special Conservation Warden Activities

The activities of a conservation warden in Wisconsin are more varied today than they have ever been before. In addition to his regular duties, patrolling his district, preventing violations, and apprehending violators, the warden today co-operates with all divisions of the conservation commission and other state and federal departments, as well as co-operating with the enforcement departments of other states and the federal government.

Departments with which wardens are called upon to co-operate more or less frequently include the Railroad Commission, the Board of Health, the Public Land Commission, Department of Agriculture and Markets, and the United States Biological Survey.

Few of these activities would come within the province of the old type "game warden." Today Wisconsin's officers are "conservation wardens" in the true sense of the word.

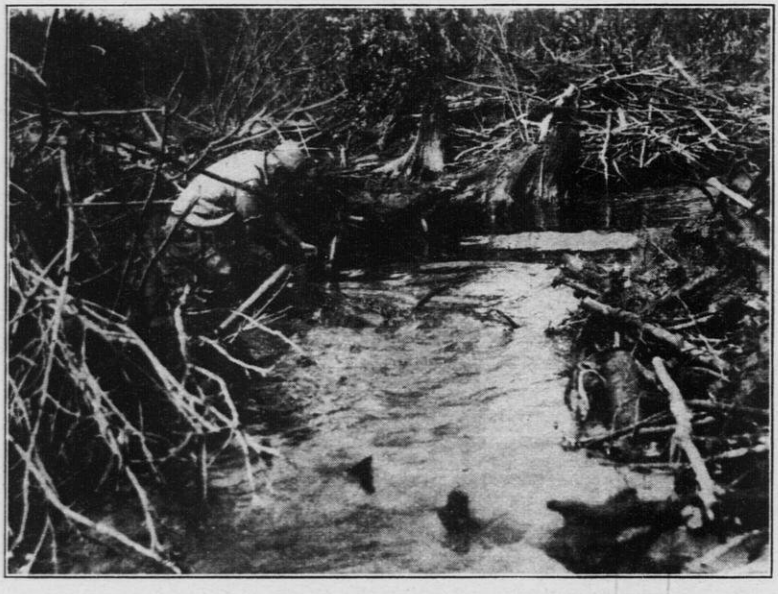
In regular law enforcement work the wardens co-operate whenever necessary with the wardens of Michigan, Minnesota, Iowa, and Illinois in protecting the game and fish of border lands and waters.

The co-operation with the federal wardens proves extremely valuable particularly in cases involving migratory birds and the Lacey act. Wisconsin wardens frequently turn cases of this nature over to

the federal wardens when the situation can be better met in federal court. The help of the federal wardens is also valuable in tracing shipments of illegal furs outside the state.

Another phase of co-operation in law enforcement, which is proving more worthwhile constantly, is that made possible by the statute making all sheriffs, deputy sheriffs, coroners, and policemen ex officio deputy conservation wardens.

New policies and new activities have tended to make the work of a conservation warden more complicated during the past two bienniums. A warden is subject to special assignment at any time. Fre-



Clearing a channel through a beaver dam to drain the flowage. Picture taken during state activities in removal of beaver.

quently cases arise in which a local warden is too well known to be most effective. At such times one or more "undercover" men may work in the district unknown to everyone in the district.

Frequently there is a concentration of several wardens for short periods of time in localities where violations are particularly rampant. Such concentration is particularly effective in the northern part of the state during deer season.

Still another activity is the trapping, transfer, and release of certain animals and birds in co-operation with the division of game. This may be done to furnish breeding stock at the game farm, or for depleted areas, or it may be done to reduce the numbers of certain species which may become too numerous in limited localities.

State removal of beaver has become an important activity for some wardens. From a point of practical extermination in 1915 these

interesting and valuable animals increased to be quite common in 1930. In 1915 there was but one known colony in the state, but by judicious introduction in other districts the species has increased gratifyingly. Beaver benefit the state in many ways, principal of which is the creation of natural fire breaks by their flowages. During dry fire seasons, beaver flowages frequently constitute the only source of water to fight the flames. Flowages also act as breeding ponds for waterfowl, and refuges for trout, increasing the retreats of birds and numbers of trout.

Outstanding Cases

The hazards are many in conservation warden work. Frequently conservation wardens find themselves in extremely difficult and dangerous positions. At such times it is only by the most extreme good judgment and quick thinking that they can carry through with credit to themselves and the department. Occasionally a warden loses his life while actively performing his duty. This happened three times during the past biennium; one warden was drowned, another shot and killed, and the third was killed when the car in which he was riding was struck by a train.

Two comparatively recent cases, in one of which a warden was killed, will illustrate the type of situations which wardens must face frequently.

1. A big city gangster has a large home on a lake in Sawyer county where he lives much of the year with varying numbers of his henchmen. Several times reports were made both to wardens and to the office at Madison, that this gangster and his men were fishing illegally in the refuge on the Chippewa river below the Winter dam.

On November 20, 1929 conservation wardens arrested this gangster for the first time. After paying a $50 fine he made threats to the wardens saying among other things, "Next time you had better come shooting because that's how you'll be received!"

During the following summer reports were made that the violations were continuing and that armed guards were placed to insure against the approach of wardens. Several times groups of wardens were sent to the vicinity, but were unsuccessful as the violators were warned of their coming and ceased violating.

On August 14 a group of wardens armed with rifles, went on to the river nine miles above the dam, in the flowage. That evening they proceeded downstream by canoes to a point two miles above the dam where they camped for the night.

The following morning was foggy and wet and the wardens, by use of extreme care, approached the dam without alarming the several guards who were posted in the woods. The gangster and two of his men were fishing illegally, and they were all arrested before the guards knew the wardens were in the vicinity. The armed guards were severely upbraided by their leader for failing to detect the wardens' approach. The violators were taken into justice court at Fish Trap and each of them pleaded guilty and was fined. The

wardens involved in this case used excellent judgment and probably avoided serious trouble by so doing.

2. On May 16, 1929 Warden Einar P. Johnson of Ladysmith, and his assistant Allen Hanson, were following a car known to belong to a fur bootlegger whose activities were being watched by several wardens. The car was quite a distance ahead of the wardens' car and when their car got to the top of a hill on a county road about nine miles north of Ladysmith, they saw that the car they were following had skidded and was partly in the ditch beside the road. They stopped their car and were walking toward the stalled car when a man came out of the woods to the car. The wardens were suspicious that he had gone into the woods to hide some furs, and Johnson asked Hanson to look for them.

While Hanson was searching, Johnson kept questioning the man whose name was Amio Maisio, of Finland, Minnesota, an associate of the fur bootlegger. After about 15 minutes Hanson found a pack sack of furs and carried it back to the road. While they were opening the pack sack Maisio jumped to one side of the stalled car, drew a gun and started to shoot. Johnson was shot through the groin, the .45 calibre bullet also breaking his left hip, but he drew his own gun and shot Maisio through the body while he was trying to escape. Hanson was unarmed, and after the shooting he went to a nearby farm house for help.

When he returned, Johnson had left, walking a quarter of a mile through the woods to a farm from where he had been taken to the hospital at Ladysmith. He died the following day.

When Hanson returned to the scene he found that the owner of the car had returned, had abandoned his comrade, and had fled. He got away into another state.

Maisio was taken to Ladysmith, first to the hospital, from where he was transferred to the county jail to await trial for murder. The case was tried in circuit court in the fall term of 1929, and Maisio was found guilty of third degree manslaughter and was given the maximum sentence. He is now serving a seven year sentence in the state penitentiary at Waupun.

Warden Johnson exhibited good judgment in this case. He had no reason to believe that the man would start to shoot, and no right to search the man for a gun until an arrest had been made. It is an unfortunate condition in officers' work that under most circumstances an officer cannot shoot first.

Supreme Court Decisions

Several decisions of the supreme court of tremendous significance to the law enforcement division have been handed down during the biennium. Each of these upheld statutes having vital bearing on enforcement activities.

1. The right of a conservation officer to arrest anyone he sees violating the conservation laws either at the time or later, with or without a warrant, was upheld in the case of James Muska, Jr., respondent, vs. Edward Apel and E. P. Johnson, appellants. This decision also

stated that damages cannot be assessed against any state conservation warden for false arrest in performance of his duty.

2. The case of Hermann, respondent, vs. Mac Kenzie, appellant, upheld the public nuisance statute of the conservation laws. As a result, any personal property which is proved to be used in violating the conservation laws is a public nuisance and subject to confiscation without the right of replevin.

3. Although the case of Halbach vs. State is not a conservation commission case, the decision has vital significance for the work of conservation wardens. In this case the supreme court ruled that an

"Amik," the beaver.

officer has a right to search any automobile that he has good reason to believe contains contraband, and that he may also open and examine any baggage contained therein without a search warrant.

4. The state's absolute ownership over all game animals and birds, and over all fish whether in inland or outlying waters, was upheld in two decisions. In the case of Krentz vs. Nichols the supreme court ruled that the state has sole ownership of wild animals, and that they can be reduced to possession only in a manner prescribed by the state. In the other case, brought against the conservation commissioners by several Lake Michigan commercial fishermen, the court ruled that the state's ownership of fish extended to the commercial fish of Lake Michigan.

INDIVIDUAL WARDEN RECORDS

1928–1929

Warden	District	Cases	Won	Lost	Fines	Jail Sentences	Costs	Seizures
Alderman, E. L.	Portage	62	56	6	$2,300.00	60	$547.92	30
Apel, Edw.	Eau Claire	29	27	2	1,130.00	225	284.18	14
Apel, Harold	Menomonie	21	14	7	600.00	135	152.94	1
Baie, Arthur	Marinette	40	39	1	1,475.00	240	144.61	31
Boomer, I. H.	Oshkosh	6	6	0	100.00	60	7.40	4
Bosworth, E. F.	Merrill	6	6	0	310.00	0	41.90	12
Button, Percy	Fond du Lac	24	15	9	50.00	150	34.30	7
Chase, A. C.	Oshkosh	35	31	4	1,650.00	30	133.38	16
Cole, W. A.	Wisconsin Rapids	18	17	1	1,450.00	0	151.13	6
Cranston, D. M.	Wausau	9	9	0	400.00	45	178.29	2
Curtis, P. S.	Viroqua	13	9	4	500.00	90	39.16	13
Danielson, H. T.	Madison	3	1	2	50.00	0	0	5
Devine, Barney	Webster	9	8	1	300.00	60	58.59	22
Devine, Thomas	Spooner	15	14	1	450.00	180	123.49	4
Diedrich, Peter	Milwaukee	15	15	0	825.00	0	238.07	6
Dockham, F. A.	Baraboo	11	10	1	585.00	0	73.46	17
Dunham, A. E.	Oshkosh	16	16	0	550.00	0	75.54	16
Edick, James	Crandon	37	32	5	980.00	270	222.89	15
Egan, John	Manitowoc	16	14	2	350.00	0	31.71	6
Elliott, W. P.	Whitewater	49	49	0	1,960.00	0	528.88	3
Fess, Edward	Madison	19	16	3	650.00	0	181.36	8
Fisher, F. W.	Oconto Falls	6	6	0	300.00	0	38.75	6
Fosnot, J. B.	Tomahawk	9	9	0	420.00	40	59.10	6
Freund, Henry	Rhinelander	1	1	0	75.00	0	0	0
Giesen, Louis	Fountain City	11	11	0	600.00	0	33.85	13
Grange, W. B.	Madison	1	1	0	50.00	0	16.00	0
Gray, Robert	Milton	37	36	1	1,250.00	0	478.62	4
Greider, Paul	Lake Tomahawk	1	1	0	0	0	15.19	5
Grey, W. T.	Ashland	5	4	1	200.00	40	19.54	29
Gruebner, H. C.	Sheboygan	13	12	1	400.00	0	118.82	3
Hall, A. W.	Darlington	17	17	0	650.00	0	140.60	8
Hanson, Allen	Ladysmith	1	1	0	50.00	0	7.50	8
Happle, Max	Iron River	24	22	2	625.00	370	101.80	29
Hassett, Ray	Park Falls	3	3	0	10.00	30	18.62	11
Hayner, S. W.	Three Lakes	40	30	10	1,475.00	60	250.19	19
Hilliker, Earl	Tomah	0	0	0	0	0	0	3

Hope, Lawrence	Hammond	34	32	2	1,050.00	315	238.47	27
Hornberg, Frank	Stevens Point	15	14	1	545.00	210	232.71	5
Hosford, H. M.	Medford	31	31	0	1,200.00	705	184.69	28
Hougen, H. O.	Loretta	58	56	2	1,955.00	270	316.83	97
Jakoubek, K. C.	Phillips	15	15	0	800.00	0	103.50	26
Jeske, Lewis	Appleton	11	11	0	625.00	0	49.30	6
Johnson, Einar P.	Ladysmith	21	20	0	935.00	40	173.73	31
Johnson, George	Richland Center	16	10	6	350.00	90	34.98	20
Johnson, T. G.	Whitehall	23	22	1	700.00	150	188.61	11
Keeler, John G.	Fennimore	9	9	0	375.00	0	90.42	5
Kipp, D. H.	Madison	2	1	1	50.00	0	4.00	0
Kirkpatrick, Alvin	Crandon	1	1	0	50.00	0	12.10	2
Kramer, Emil	Antigo	37	28	9	1,025.00	90	204.70	27
Lake, R. J.	Minocqua	3	3	0	100.00	60	18.08	6
Lange, Elmer	La Crosse	11	8	3	200.00	100	39.66	39
Lanning, B. P.	Black River Falls	5	5	0	250.00	0	50.10	28
Lee, Albert	Luck	24	21	3	640.00	210	127.70	9
Long, Frank	Sayner	8	4	4	200.00	0	33.95	6
Long, John	Mellen	28	25	3	900.00	180	95.09	42
McDonald, P. J.	Spooner	4	4	0	25.00	30	20.05	0
McNaughton, James	Superior	15	13	2	460.00	60	35.35	25
Moeller, Ira G.	Green Bay	6	6	0	50.00	0	43.16	0
Nixon, R. A.	Ashland	34	31	3	1,410.00	185	178.98	16
Omernick, A.	Trout Lake	2	2	0	10.00	365	364.00	0
Otto, Charles	Argonne	28	24	4	650.00	240	274.55	15
Ozburn, W. A.	Kenosha	10	10	0	250.00	60	90.84	2
Patterson, Matt	Madison	0	0	0	0	0	2.66	0
Percy, H. E.	Brule	1	1	0	50.00	0	1.70	8
Perry, Lea M.	Wausau	10	10	0	250.00	130	64.11	1
Peterson, A. G.	Racine	20	18	2	770.00	0	166.69	2
Powell, A. W.	Bayfield	3	2	1	0	90	0	8
Raeth, Valentine	Milwaukee	11	11	0	540.00	0	147.12	22
Randall, Frank	Waupaca	9	9	0	455.00	0	105.06	0
Reabe, Wm.	Horicon	13	13	0	600.00	0	124.27	11
Reed, C. L.	Prentice	23	21	2	800.00	175	131.63	28
Rheaume, I. C.	Mercer	36	34	2	1,300.00	360	245.65	21
Riebe, W. H.	Eagle River	17	14	3	600.00	0	241.69	39
Robinson, A. J.	Rhinelander	66	51	15	1,750.00	580	315.34	42
Rowe, Hallie	Sturgeon Bay	19	19	0	750.00	90	130.86	26
Sampson, Andrew	Stoughton	21	20	1	950.00	0	151.40	5
Schwalbe, O. J.	Mauston	5	4	1	100.00	35	16.30	11
Scolman, J. T.	Rice Lake	2	2	0	100.00	0	19.00	3
Smith, Ira G.	Green Bay	15	13	2	525.00	90	56.40	5
Steiro, Lief	Hayward	2	2	0	20.00	0	26.90	4
Stiglbauer, F. J.	Oconomowoc	45	35	10	1,150.00	20	142.95	27

INDIVIDUAL WARDEN RECORDS—Continued

Warden	District	Cases	Won	Lost	Fines	Jail Sentences	Costs	Seizures
Swift, Ernest	Hayward	30	24	6	$785.00	270	$122.40	27
Tic, Arthur	Shawano	48	46	2	1,995.00	295	403.19	22
Tiedeman, H. C.	Thorpe	18	16	2	600.00	60	130.67	10
Trainor, D. O.	Princeton	23	21	2	950.00	90	154.30	15
Vanderkelen, Alfred	Sturgeon Bay	2	2	0	200.00	0	29.97	6
Weaver, Percy	Sturgeon Bay	2	2	0	100.00	0	49.84	3
Webster, B. O.	Madison					0	25.22	0
Weaver, E. M.	Woodruff	24	13	11	650.00	30	188.62	44
Worden, J. D.	Plainfield	18	18	0	910.00	30	101.50	12
Totals		1,556	1,385	171	$54,475.00	7,790	$11,048.76	1,257

Per cent of cases won 89.1
Per cent of cases lost 10.9
Per cent seizures to cases won 90.7
Average fine per case won $39.34

INDIVIDUAL WARDEN RECORDS
1929–1930

Warden	District	Cases	Won	Lost	Fines	Jail Sentences	Costs	Seizures
Alderman, E. L.	Portage	49	46	3	$1,850.00	420	$445.51	53
Apel, Edward	Eau Claire	76	73	3	2,110.00	120	747.74	48
Apel, H. B.	Menomonie	24	22	2	700.00	120	220.31	28
Baie, Arthur	Marinette	62	44	18	1,325.00	420	158.12	58
Baker, Charles E.	Park Falls	1	1	0	10.00	0	18.20	5
Boomer, I. H.	Oshkosh	5	5	0	100.00	30	29.31	6
Boaworth, E. F.	Merrill	19	18	1	885.00	100	89.75	8
Button, Percy	Mauston	24	18	6	850.00	120	213.81	20
Chase, A. C.	Oshkosh	27	24	3	1,180.00	60	207.59	16
Clawson, W. P.	White Lake	1	1	0	10.00	0	4.75	0
Colburn, Roland	Pardeeville	8	8	0	250.00	0	64.72	10
Cole, W. A.	Wisconsin Rapids	18	13	5	475.00	210	106.11	13

Curtis, P. S.	Viroqua	10	8	2	150.00	30	26.70	8
Danielson, H. P.	Madison	0	0	0	0	0	0	5
Devine, Barney	Webster	16	16	0	780.00	105	108.04	29
Devine, Thomas	Spooner	26	23	3	850.00	195	103.58	23
Diedrich, Peter	Milwaukee	41	31	10	1,740.00	0	516.85	30
Dockham, F. A.	Baraboo	24	24	0	975.00	0	132.74	20
Dunham, A. E.	Oshkosh	20	18	2	750.00	270	98.69	15
Edick, James	Sheboygan	33	29	4	875.00	320	224.34	23
Egan, John	Manitowoc	9	8	1	850.00	0	29.88	90
Elliott, W. P.	Whitewater	52	52	0	2,415.00	60	679.29	7
Fess, Edward	Madison	22	18	4	600.00	120	151.35	17
Fisher, F. W.	Oconto	19	18	1	965.00	0	153.89	22
Fosnot, J. B.	Tomahawk	10	9	1	350.00	330	46.50	5
Giesen, Louis	Fountain City	23	23	0	700.00	240	54.82	52
Grange, W. B.	Madison	0	0	0	0	0	0	9
Gray, R. A.	Milton	40	40	0	1,665.00	30	411.30	18
Greider, Paul	Lake Tomahawk	5	5	0	0	120	6.70	5
Grey, W. T.	Ashland	3	3	0	50.00	30	7.87	8
Gruebner, H. C.	Sheboygan	5	5	0	245.00	0	62.85	13
Hall, A. W.	Darlington	16	14	2	1,050.00	270	116.40	67
Hanson, Allen	Ladysmith	45	43	2	1,425.00	331	335.52	51
Happle, Max	Iron River	34	31	3	1,175.00	250	236.32	38
Hayner, S. W.	Three Lakes	39	32	7	1,250.00	210	206.44	12
Hilliker, Earl	Tomah	13	13	0	550.00	30	138.02	3
Hope, Lawrence	Hammond	29	26	3	775.00	570	226.24	33
Hornberg, Frank	Stevens Point	25	22	3	1,260.00	60	186.17	12
Hosford, H. M.	Medford	23	15	8	600.00	30	138.12	29
Hougen, H. O.	Loretta	70	66	4	1,890.00	165	312.83	59
Jakoubek, K. C.	Phillips	8	6	2	260.00	150	22.80	8
Jeske, Louis	Appleton	7	7	0	300.00	270	33.90	2
Johnson, George	Richland Center	43	38	5	1,630.00	720	166.75	20
Johnson, T. J.	Whitehall	19	18	1	825.00	0	221.66	23
Jones, L. D.	Ashland	8	7	1	275.00	30	33.75	11
Keeler, John G.	Fennimore	42	40	2	1,700.00	510	548.25	14
Kirkpatrick, A.	Crandon	9	8	1	185.00	30	54.70	2
Kramer, Emil	Antigo	23	23	0	1,175.00	30	270.57	20
Lake, R. J.	West Bend	11	9	2	375.00	90	40.03	9
Lange, Elmer	La Crosse	30	26	4	775.00	60	138.03	41
Lanning, B. P.	Black River Falls	17	16	1	700.00	30	88.98	29
Lee, Albert	Luck	20	12	8	310.00	120	45.60	4
Long, Frank	Sayner	7	6	1	200.00	60	25.40	5
Long, John	Mellen	49	44	5	1,670.00	570	120.60	21
McDonald, P. A.	Spooner	20	19	1	165.00	0	175.07	0
McNaughton, J. W.	Superior	41	34	7	1,275.00	120	137.43	42
Meharg, Wm.	Dunbar	4	4	0	0	0	20.70	0
Miner, Fred	Hayward	15	15	0	475.00	120	70.40	6

INDIVIDUAL WARDEN RECORDS—Continued

Warden	District	Cases	Won	Lost	Fines	Jail Sentences	Costs	Seizures
Moeller, Ira	Two Rivers	17	15	2	$815.00	0	$133.30	15
Nixon, R.	Florence	52	37	15	1,425.00	240	331.95	26
Omernik, Anton	Trout Lake	1	0	1	0	0	0	0
Oshesky, Louis	Marinette	11	11	0	125.00	60	36.26	0
Otto, Charles	Argonne	23	23	0	800.00	150	210.39	10
Ozburn, W. A.	Kenosha	24	23	1	1,165.00	0	212.94	10
Percy, H. E.	Brule	6	5	1	60.00	30	4.50	7
Perry, Lea M.	Wausau	72	65	7	3,375.00	550	599.94	37
Peterson, A. J.	Racine	29	27	2	1,015.00	0	210.76	4
Peterson, P. C.	Hayward	0	0	0	0	0	0	6
Powell, A. W.	Bayfield	4	4	0	300.00	30	45.90	6
Raeth, Valentine	Milwaukee	4	3	1	190.00	0	38.17	4
Randall, F. D.	Waupaca	14	13	1	735.00	45	115.06	7
Reabe, Wm.	Horicon	18	18	0	350.00	120	170.10	10
Reed, Clifford	Minocqua	21	18	3	750.00	110	140.04	24
Rheaume, I. C.	Mercer	43	38	5	1,850.00	30	722.84	20
Riebe, W. H.	Eagle River	25	21	4	1,025.00	75	159.92	14
Robinson, A. J.	Rhinelander	43	35	8	1,175.00	210	277.34	30
Rowe, Hallie	Sturgeon Bay	23	22	1	725.00	0	353.20	27
Sampson, Andrew	Stoughton	26	25	1	800.00	30	206.90	13
Schwalbe, A. J.	Fond du Lac	16	15	1	675.00	30	89.91	8
Scolman, J. T.	Rice Lake	28	25	3	1,275.00	160	196.85	26
Smith, Ira G.	Green Bay	9	9	0	500.00	0	80.86	3
Spencer, Carl	Pembine	4	4	0	90.00	0	34.00	0
Steiro, Leif	Hayward	9	9	0	0	20	25.30	0
Stiglbauer, F. A.	Oconomowoc	46	43	3	1,220.00	30	432.01	19
Swift, Ernest	Hayward	39	36	3	1,000.00	210	140.01	47
Tic, Arthur	Shawano	48	46	2	1,875.00	390	440.62	31
Tiedeman, H. C.	Thorp	25	25	0	570.00	120	166.41	22
Tourtillott, Ralph	Wabeno	8	8	0	150.00	90	31.00	3
Trainor, D. O.	Princeton	23	21	2	800.00	360	132.30	15
Weaver, Harry	Phillips	18	16	2	550.00	185	82.68	19
Worden, J. D.	Plainfield	17	17	0	600.00	0	86.86	0
Totals		2,085	1,874	211	$71,960.00	11,551	$15,140.31	1,688

Per cent cases won 89.9
Per cent cases lost 10.1
Per cent seizures to cases won 90
Average fine per case won $38.40

DIVISION OF EDUCATION AND PUBLICATIONS

Introductory

The history of the conservation program in the United States reveals a long uphill struggle, and one which has been successful proportionately as conservation workers have been able to enlist sympathetic and co-operative public opinion.

From the days of early beginnings when men like Increase Lapham and Carl Schurz, both of whom lived in Wisconsin much of their lives, first advocated conservation on a national scale, to the present when the federal government and every state have administrative conservation groups is a long step. It is a progressive step, one which is laying the foundation for correcting the wrongs committed by earlier generations, and insuring generations to come that they too will participate in those natural resources with which the United States was so bountifully endowed.

But the time of conservation work has been short compared with the time it took to create the destructive public opinion which has made conservation activity imperative. This attitude which, although less universally held today than a few decades ago is still too general, is the cumulative effect of three centuries of settlement made easy by free self-appropriation of any and all natural resources. Exploitation, both individual and collective, played its part and ran rampant until some more far-sighted men saw the end of that which was considered endless. Forests could be exhausted—game animals, birds, and fish could disappear.

The destructive movement gained such momentum in its unrestricted course of so many scores of years that it could not be checked immediately. Wise conservation measures and activities both in Wisconsin and in the nation, generally are slowing the destructive movement. They are succeeding in direct proportion to the amount of favorable public opinion they can generate. No conservation program can be entirely successful without the complete sympathetic co-operation of the public. Sympathetic co-operation can be expected only when there is general understanding of the magnitude and necessity of the program and the problems involved in its successful administration. Understanding will come with general education.

In 1928 the Wisconsin Conservation Commission created a division of education and publications to co-ordinate existing conservation educational activities and inaugurate new ones in order to have a centralized purposeful conservation educational program throughout Wisconsin. The creation of such a division at that time was a new idea in the Middlewest. The field for work was unlimited, but there was no precedent of method, and new paths of endeavor had to be

charted. Since 1928 at least nine such departments have been started in other states.

There were three main reasons for establishing the new division:

1. To educate the Wisconsin public in conservation matters.
2. To disseminate information about Wisconsin's recreational resources to people outside the state.
3. To centralize the publishing of conservation reports, books, pamphlets, and bulletins.

Educational Media

Any educational program to be most effective, must choose the best media with which to reach the particular class of people it aims to reach. If an educational program is directed at more than one class it is necessary to use more than one method of approach.

Because the conservation program in Wisconsin will be successful in direct proportion to the numbers of people whose sympathetic co-operation can be secured, all classes have been considered in formulating the conservation education program and methods of reaching all of them have been planned. These methods aside from the school program which will be discussed in detail later, include: newspaper and magazine publicity; weekly and monthly releases from the department; public talks; still and motion picture photography; publication of books, bulletins, and pamphlets; participation with displays at fairs, outdoor shows, conventions, etc.; and the maintenance of an extensive information service. Each of these will be discussed in detail.

Newspaper Publicity

Little, if any, organized conservation educational activity had ever been carried on in Wisconsin prior to the establishment of the education and publications division of the conservation commission in 1928. There were no precedents as to method or material. This meant that an entire program had to be devised which would reach those citizens already adult as well as those in the schools of the state.

There is no doubt that the future of the conservation program depends largely upon the attitude the students of today will have toward it as citizens tomorrow. But in the meantime it is necessary to make a bid for the understanding and co-operation of the adult citizenry of the state.

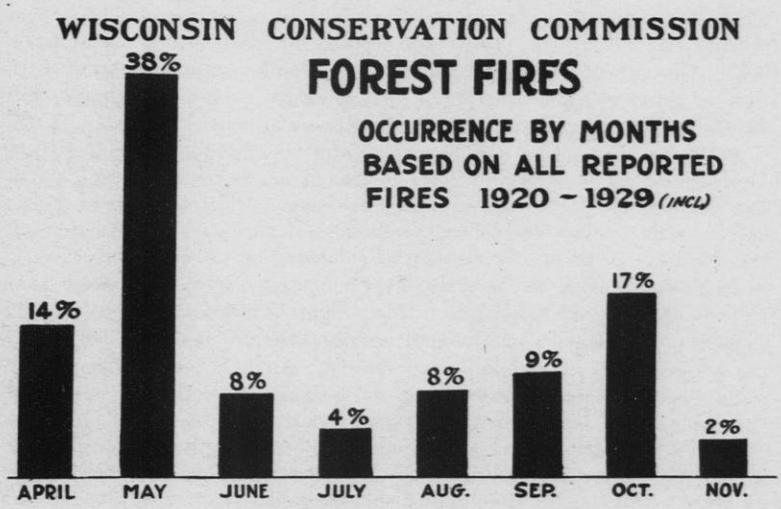
To reach the people of the state generally, the press offers the best and easiest medium. It is best because it reaches most, and it is easiest because of the sincere attitude of helpfulness exhibited by practically all newspapers in the state. A questionnaire sent to every editor in the state shortly after the division of education and publications began to function in July 1928, revealed that of the nearly 400 newspapers in the state, both daily and weekly, there was only one that did not promise co-operation.

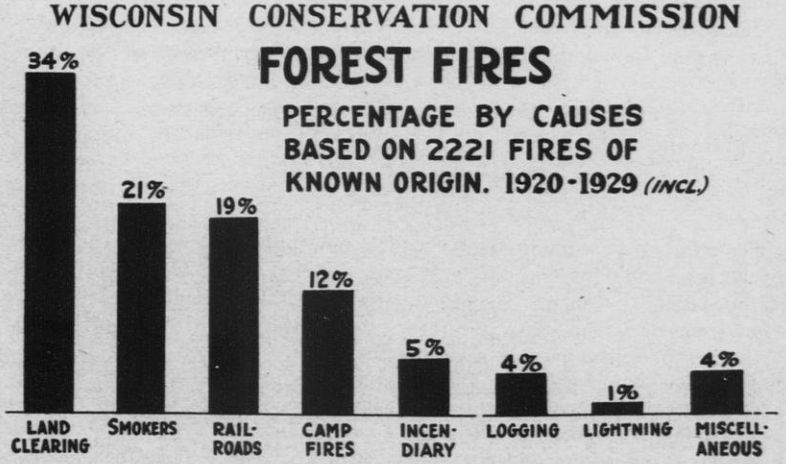
Consideration of newspaper publicity should come under three distinct headings: Wisconsin daily papers, Wisconsin weekly papers,

and special service including that furnished to papers published outside the state.

a. Wisconsin dailies. Practically every daily newspaper in Wisconsin is served by one of the two principal press associations, the Associated Press, or the United Press, and it is mainly through the medium of the press associations that conservation news has been furnished to the dailies.

There are three principal reasons why the press associations offer the best medium of reaching the dailies: (1), newspapers value





Two bar charts used in forest protection exhibit. The originals measure two and one-half by three feet.

most highly the news they receive from the association; (2), the extreme low cost of disseminating the news for the conservation commission; and (3), the excellent attitude of co-operation shown by both associations in treating the news coming from the department fully and accurately.

Several newspapers which maintain Madison bureaus receive the same service accorded the press associations. Whenever a representative of either press association, of the special bureaus, or of a newspaper from outside the state, makes a special request for information or articles, it is furnished to that representative exclusively. This also holds true for any newspaper, daily or weekly, published within or without the state that writes for information or articles. After the initial exclusive use, the same information is frequently disseminated in some other form, but never in such a way that it will detract from the value of the first exclusive story.

A careful distinction between news and propaganda is made before any stories are released. News is the primary requisite, and without an element of news no story is released. Releasing newsless stories would soon destroy the confidence of the newspaper men with the ultimate result of lessening the efficiency of the division.

The news stories released by the division cover all policies and activities of the commission, and an attempt is made to present to the papers of the state a well balanced program of stories which relate the progress of all divisions impartially. An average of one release a day is maintained, and during an average week each division of the commission is represented at least once.

At certain intervals inchage counts are made of the clippings from Wisconsin papers containing stories originating from the office. One of these counts, made during the summer of 1929, a normally "dead" period from a newspaper standpoint, reveals the following interesting figures. These figures represent the total number of column inches devoted to releases from the division of education and publications in approximately two-thirds of the daily papers of the state.

COLUMN INCHES OF CONSERVATION RELEASES

Month	*Inches*
July	4,031
August	3,451

The number of column inches which newspapers devote to publicity releases should not be the only criterion by which the effectiveness of a publicity service is judged. But they do indicate whether the newspapers of the state are interested in the material prepared and whether it is prepared in a usable form.

b. Wisconsin weeklies. Publicity service to weekly papers if it is to be effective, must vary in quantity, type of material, and method of writing from the service supplied to dailies. Weekly papers have smaller circulations, but are more carefully read. Timeliness is not as important a factor from the news angle, but it is vitally important

to have publicity material for weekly papers reach the newspaper office at a time preceding the weekly publication rush. Weekly papers demand stories with more local interest.

Shortly after the division began to function, a mimeographed weekly news release was devised which included, in each issue, from four to seven short stories detailing different conservation activities. Whenever possible, there are stories included which will have a particular appeal to certain sections of the state. By this means, papers in the particular sections of the state have their interest drawn to a particular story, to the entire release, and to the service.

This weekly service averaged three releases a month during the biennium. It is not sent to daily papers, but the mailing list includes many magazines, sportsmen's organizations, school libraries, women's clubs, and individuals. The weekly release and all other releases of the division are sent to all officials and employees of the conservation commission.

Special service. Stories having local interest to a particular town, city, county, or section of the state are sent to local papers only. Both dailies and weeklies are included in this special service. Whenever any paper in the state requests special information, pictures, cuts, or matrices, the request is granted as promptly and thoroughly as possible. Frequently special feature articles originate in the office and are sent to those papers whose readers would be most interested.

Stories and articles are likewise prepared for newspapers published outside the state in response to requests for information. Such stories are prepared so that they will advertise the state's recreational resources. Frequently during the biennium illustrated advertising stories have been published in papers in cities as far distant as Omaha, St. Louis, Kansas City, and Indianapolis. Stories without pictures have been printed in New York, Washington, and New Orleans papers. An attempt is made to send material to papers published in Wisconsin's recreational trade area.

Another type of out-of-state newspaper publicity and one which adds materially to the prestige of Wisconsin, is furnishing articles explaining conservation progress to such papers as the *World* and *Herald-Tribune* of New York, the Washington *United States Daily*, and the Detroit *Times*.

Magazine Publicity

Regular conservation sections were maintained in two magazines published in Wisconsin, the *Wisconsin Magazine*, and the *Land O'Lakes Magazine*, prior to their merging. Since the two consolidated the conservation section has been continued. This section details the progress of the conservation program.

Special interest articles have been prepared and published in other Wisconsin magazines, particularly those magazines catering to a specific public such as the farm magazines. Illustrated articles have been furnished to several trade publications and house organs published by Wisconsin industries, but circulated all over the country.

One or more illustrated articles have been furnished to 12 national magazines, including the *Literary Digest, National Sportsman, Out-Door America,* and several other outdoor and sportsmen's magazines. In addition to the special articles the regular weekly and monthly releases go to many magazines and out-of-state papers, including all conservation publications. Reprints from these services are frequent.

Monthly Summary

Early in the biennium the commission inaugurated a policy of making public the names of all persons convicted of violating the conservation laws. It was thought that such publicity would act as a deterrent to violations as many persons who would willingly take the chance of being arrested if they thought there would be no publicity, hesitate and desist when they know their names will be made public if they are convicted. That this policy is correct is indicated by the fact that several people have attempted to have their names kept out of the summary. None of them have succeeded.

When first begun the monthly summary was printed but the element of timeliness made printing unsatisfactory because of the necessary delay. All but the first two issues of the summary have been put out in mimeographed form on legal sized sheets. It varies in size from 12 to 20 pages.

During most of the biennium the monthly summary included news stories, tables, and charts of the conservation program in addition to the arrest reports. The demand for the monthly summary has increased greatly. When first started there was a mailing list of approximately 200; at the end of the biennium this had increased to 1,200. It is sent to judges, district attorneys, secretaries of all sportsmen's organizations, all newspapers in the state, many schools, libraries, clubs, and to many interested individuals.

Public Addresses

Almost immediately after its beginning, the division of education and publications assumed the bulk of the public speaking engagements for the conservation commission. This was continued throughout the biennium and the superintendent of the division averaged at least three public addresses a month.

Groups spoken to included practically every type of organization in the state, including schools, service clubs, women's clubs, boy and girl organizations, and church clubs.

Another important phase of the public speaking program is the extensive use of radio. During the biennium radio talks were given over four stations: WLS, WTMJ, WHA, and WIBA. Several series of talks totaling 35, were given over WHA, the University of Wisconsin station at Madison. These series included talks on recreational resources, Wisconsin state park and scenic attractions of the various sections of the state, activities of the conservation commission, and descriptions of different species of Wisconsin's birds, animals, and fish.

Photography

The subject of photography divides itself into two headings: still and motion pictures.

a. Still photography. Prior to the establishment of the education and publications division there was no accurate system of filing

One of the six fire prevention display panels. The panels are three feet wide and three and one-half feet high.

photographs and no program of photography. All usable photographs in the files were re-arranged and cataloged and a foundation built upon which to develop a future photography program.

Several series of photographs detailing various activities of the department have been made during the biennium which will find ulti-

mate use in sets of lantern slides. They will also be used in publications and newspaper and magazine publicity.

b. Motion picture photography. An excellent beginning has been made in compiling a library of motion picture films for distribution throughout the state. This was made possible partly by means of a co-operative agreement with the Milwaukee Public Museum whereby that institution made available to the commission any of the motion picture negative from their files that the commission might be able to use. What little negative was owned by the commission was likewise made available to the Milwaukee Public Museum. This co-operative agreement will continue and should prove invaluable in years to come.

At the end of the biennium the division had available for public distribution the following reels:

The Wisconsin Prairie Chicken	2 reels
Sand Hill Crane	1 reel
Moon Lake Refuge	2 reels
Blue Heron	1 reel
Wisconsin Waterfowl	2 reels
Wild Life in the Land O'Lakes	3 reels
Winter Logging in Northern Wisconsin	2 reels
Horicon Marsh	1 reel

These were secured either through co-operation with the Milwaukee Public Museum, or by the direct efforts of the division in doing the photography.

Aside from the finished reels which were being distributed at the end of the biennium, several other reels are in process of editing. These include the following subjects: Wisconsin the Beautiful, State Parks, Hatchery Operations, Wisconsin Beaver, Wisconsin Predators, and Game Farm Operations.

To facilitate distribution matters, the commission entered into an agreement with the University of Wisconsin bureau of visual instruction whereby the bureau of visual instruction distributes in their regular way, all the films and lantern slides owned by the commission. There are inadequate facilities for checking, rewinding, and repairing film in the Capitol, and all these facilities are available at the university. This service costs the commission nothing. The bureau of visual instruction makes a nominal service charge to the user of 50c per reel.

Publications

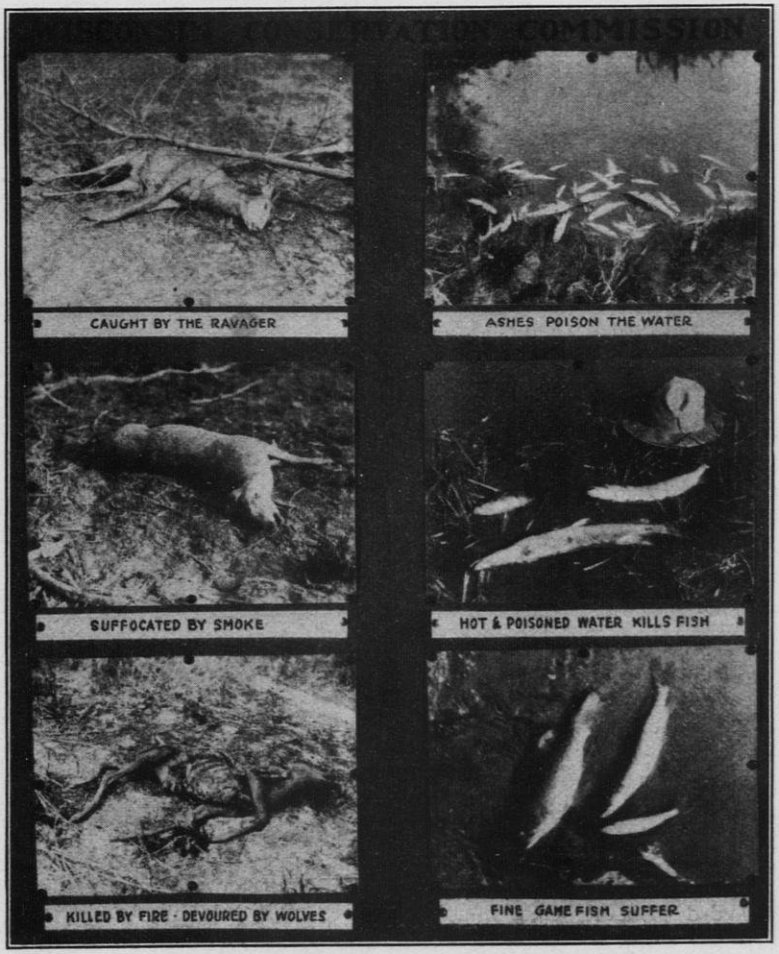
A beginning was made during the biennium on an elastic publication program which can be expanded in the future within limits prescribed only by available funds. Publications issued during the biennium include the biennial report, "Forest Trees of Wisconsin," conservation laws of 1929, summary of fish and game laws, conservation warden's manual, description of fish refuges, and a state park bulletin.

The division also co-operated with other state departments in issuing publications, contributing both copy and illustrations. Among these contributions might be listed the description of Wisconsin's

state parks, and article "Scenic Wisconsin" on the back of the 1930 official highway map. Illustrations for use on the back of the highway map were also furnished by the division.

School Educational Program

Conservation teaching in the past for the most part, has been haphazard and rather purposeless. In certain schools because of



Another of the fire prevention display panels described on pages 121 and 126.

inspired and inspiring teachers, the work has been excellent. But other schools had no way of learning of the activities of schools and teachers doing the excellent work. A centralized source can act as a clearing house for methods and ideas.

It is proposed to transpose these hitherto helter-skelter efforts into new paths with regularly organized courses and methods of study, and with a direct and distinct goal of endeavor. The means of accomplishing this will be an attempt to correlate present studies with different phases of conservation activity in this way giving a new and interesting significance to the studies which at present may be difficult for teachers and uninteresting to students. Any agency which increases the attractiveness of knowledge and the ease of acquiring it, is an agency for better citizenship and more stability in civic conditions.

At the close of the biennium the division had worked out a proposal for conservation education in Wisconsin schools which met the approval of the state superintendent of public instruction and the conservation section of the state teachers' association. This proposal will be expanded and if methods indicated in it are found to be workable, complete correlative courses of study will be worked out to be introduced in all Wisconsin primary and secondary schools.

If methods indicated in the proposal for conservation education can be established in Wisconsin schools, a dual purpose will be accomplished. Because of its correlative nature this method of conservation education will help in the creation of the necessary favorable public opinion and it will accomplish this primary purpose without being burdensome in any way to the school curriculum.

Outdoor Shows

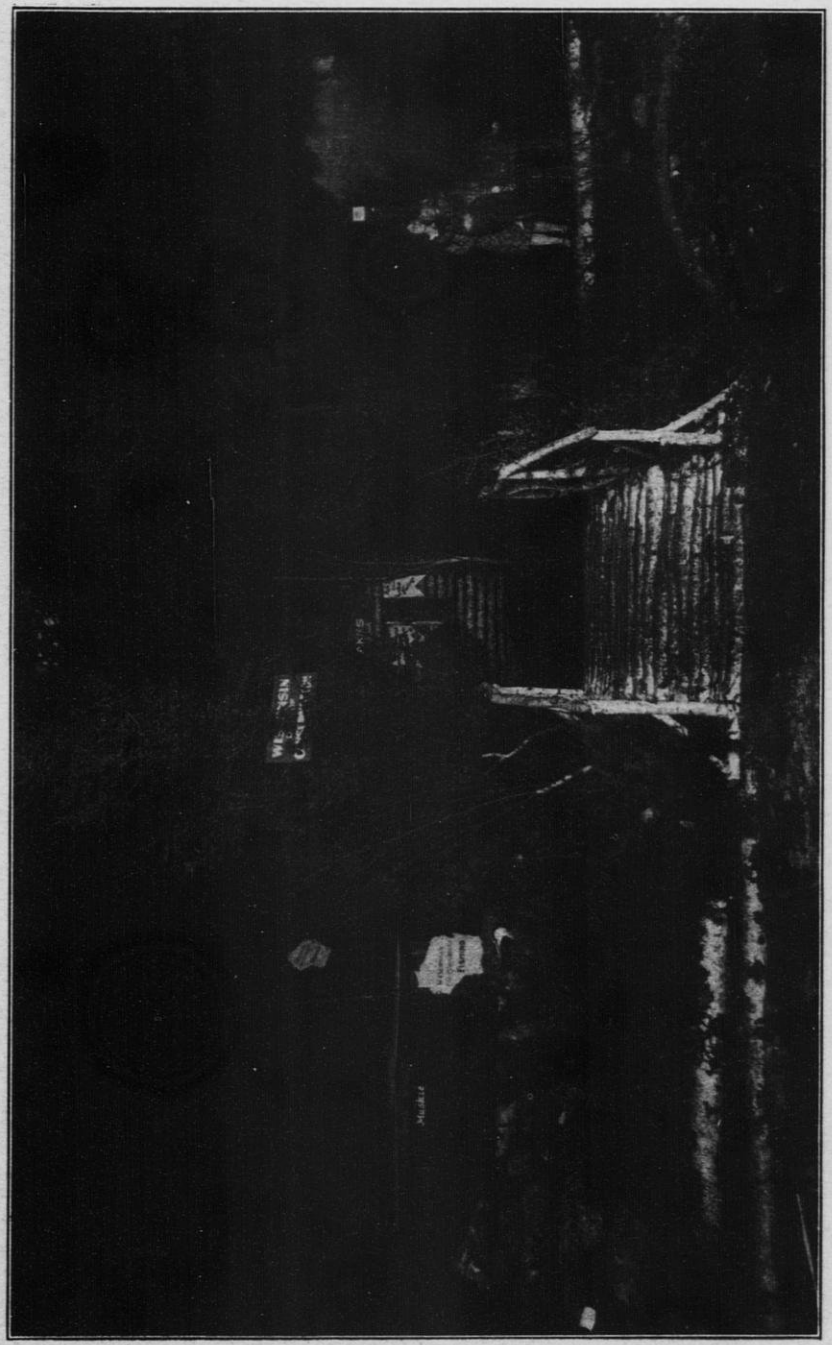
Principal among the out-of-state educational activities of the division has been participation in five outdoor shows during the biennium, three of which were held in Chicago. At the National Outdoor Show in Chicago which is held each May at the Coliseum, Wisconsin has been represented by a large and impressive exhibit during both years of the biennium. One entire corner of the large Coliseum floor has been devoted to Wisconsin's display.

Several railroad carloads of exhibit material including trees and forest greenery, live animals, live birds, live fish, and several mounted specimens are taken to Chicago each spring for this show. Woodland scenes are created with the aid of painted backgrounds and in these scenes are arranged the wild life exhibits. Thousands of pieces of literature are distributed at these shows.

For the 1930 show the division purchased six new type aquaria which made possible a better live fish display than Wisconsin has ever been able to have before at one of these shows. Fish exhibited included pickerel, pike, muskellunge, bass, and brook, brown, and rainbow trout.

Among the live animals and birds were two full grown bear, two bear cubs, wolf, wildcat, badger, several raccoon, wild American turkeys, and ducks.

Between 175,000 and 200,000 people visit the National Outdoor Show each year and the benefits derived by the State of Wisconsin are directly proportionate to the size of its exhibition.



Section of Wisconsin exhibit at National Outdoor Show, Chicago, 1929.

It was interesting to note during the summer of 1930, a year of depression, that for the first six weeks of the fishing season which opened immediately following the outdoor show, non-resident license sales exceeded the previous year's record and did not slump until the latter part of the season.

In April of 1930 the commission was represented by a pictorial and educational display at the National Sportsmen's Show held in the Stevens Hotel at the time of the international convention of the Izaak Walton League of America. This was a booth display with illuminated panels at the back to attract attention. Approximately 40,000 people visited this booth.

During the two years of the Milwaukee Sentinel Outdoor Life Exposition in Milwaukee the commission has been represented by a display. In 1930 the entire stage was devoted to the commission's exhibit and a woodland scene was created here similar to the one in Chicago. As the Milwaukee show followed the Chicago show, many of the same materials used in Chicago were used again in Milwaukee.

The railroads of the state do much toward making the state exhibits a success by donating the use of baggage cars for shipping woods material and of granting to the state free shipment of animals, birds, and fish both to Milwaukee and Chicago and return.

Fairs

The exhibit at the Wisconsin State Fair of 1930 exceeded in size anything which has been attempted for many years. Besides a fish display held at the aquarium building, a series of eight pens was built in which were exhibited animals and birds from the state game farm. The exhibit attracted a great deal of attention.

Thirty aquaria were filled with various species of fish taken from all sections of the state. The educational value of this fish exhibit is tremendous.

In the specially built pens, black bear, deer, wild American turkeys, pheasants and some predatory birds including great horned owls and red-tailed hawks, were exhibited. The conservation commission had never before had an animal and bird display, and it drew a great deal of favorable comment.

During the summer of 1930 the education and publication division, in co-operation with the forest protection division, planned an extensive fire prevention display and made arrangements to have it exhibited at 22 county fairs within the forest protection districts. The extreme fire hazard and severe season necessitated cancelling this program, but the display was fully prepared and is available for use at other places during the winter and can be used in the future for county fair exhibitions.

Display Boards

Another type of visual education and publicity has been the preparation of large display boards measuring three and one-half by six feet when opened. Each one of these carries a pictorial conservation lesson. These display boards have been used to excellent advantage

both in public exhibitions at fairs and outdoor shows, and conventions, and also for shipping about the state to be used in display windows.

Some of the lessons which have been arranged in picture form on the boards are the story of the ruffed grouse or partridge, the prairie chicken investigation, forest planting, fire fighting, damage wrought to game and fish by fire, and identification of forest trees. Some of the boards were taken on the good will tour, but these displayed scenic pictures of Wisconsin and Wisconsin state parks.

Other Displays

The conservation commission has been represented at conventions and meetings during the biennium. At both annual state teachers' conventions held during the biennium, the commission had a display put on in co-operation with the Boys' Technical High School of Milwaukee, and the Milwaukee chapter of the Izaak Walton League. The display at the state teachers' convention the second year of the biennium, was a co-operative venture with the United States Forest Service as well as the Boys' Technical High, and the Milwaukee chapter of the Izaak Walton League.

At the convention of the state federation of women's clubs the commission has been represented by an extensive forest protection display, and educational and display material have been furnished for conventions for the Izaak Walton League and other groups.

On both annual good will tours sponsored by state departments and private enterprises, the commission has been represented by one complete baggage car exhibit. This display is made to advertise Wisconsin's recreational resources. Both years the tour has gone into southern states and the cool fragrance of Wisconsin's north woods in the conservation commission's car was among the leading attractions of the entire good will train.

Informational Service

The division maintains an extensive informational service. All general letters requesting information about conservation are referred to this division, as are requests for educational material. Bundles of printed and mimeographed pamphlets and leaflets on different conservation subjects are furnished free of charge.

Museums

The commission during the biennium, ordered the beginning of a new activity for the education and publications division in the establishment of state park museums. A mere beginning was made in this activity. A building was set aside at Devil's Lake State Park to house a museum there, and the Milwaukee Public Museum generously gave to the commission enough display cases to fully equip the museum at Devil's Lake State Park. It is planned that the Devil's Lake State Park museum and others to be established later, will display native flora and fauna and tell the story of the geological and biological significance of the locality in which the park is located. If pertinent, the sociological history of areas will also be portrayed.

RESEARCH BUREAU

Introductory

Early in the biennium the recently created research bureau began to function in co-operation with other divisions of the commission. The bureau consists of a fact-finding group of scientists who serve the state without pay because of their deep interest in conservation problems.

The purpose of the research bureau is to determine causes and seek remedies of any influences which threaten to be detrimental to the wild life and forests of the state. The research bureau is a co-operative body working with other divisions of the conservation commission, with other state departments, and with federal departments in seeking scientific solutions for conservation problems. To date most of the activities of the research bureau have concerned game problems of the state, particularly of the prairie game birds of the central plains area. Because of the tendency of its early activities, the research bureau has been working more with the game division of the commission than with any other divisions.

Co-operation With Divisions

Among the activities in which the research bureau has been engaged in co-operation with the division of game are:

1. Making a game survey of the state in an attempt to determine the relative abundance of the different species of game birds and animals.
2. Co-operating with the New England Ruffed Grouse Investigation by supplying its examiners with many specimens and information concerning the ruffed grouse in this state. Findings of the New England Ruffed Grouse Investigation will be of great value in regulating the abundance of the species in Wisconsin.
3. Carrying on extensive winter feeding operations. In 1928 three experimental stations were established which were increased to seven in 1929, and to 75 in 1930.
4. Assisting in duck banding operations in co-operation with the Outagamie Fish and Game Protective Association.
5. Experimenting with the propagation of Hungarian partridge, sharp-tailed grouse, and wild turkeys at the state game farm.

In co-operation with the division of forests and parks the research bureau has studied many problems in connection with slash disposal programs, and has contributed to the land economic inventory which is a joint endeavor of the conservation commission and the department of agriculture and markets.

The stomach contents taken from several wolves and other predators have been sent by the research bureau to the federal biological survey for analysis in federal laboratories.

Prairie Chicken Investigation

The largest activity of the research bureau during the biennium has been the prairie chicken investigation which has been carried on under the direction of Dr. Alfred O. Gross of Bowdoin College, Brunswick, Maine, as chief investigator. The investigation was begun in the fall of 1928 when several specimens were sent to Dr. Gross at Bowdoin College where he made a detailed study of the food, parasites, and diseases of 17 prairie chickens and 22 sharp-tailed grouse.

Nest of 11 prairie chicks a few hours old.

In 1929 Dr. Gross worked in Wisconsin for six weeks in June and July, studying the life history of the prairie chicken to determine the factors involved in controlling the number of prairie chickens in Wisconsin.

Photographs and other valuable display material were made during this summer which served to stimulate public interest in the prairie chicken and its conservation.

Dr. Gross spent the entire summer of 1930 working on the prairie chicken in Wisconsin. In addition to many photographs, several thousand feet of movie film were taken showing the nesting activities of the bird. Before leaving Wisconsin, Dr. Gross finished writing a detailed progress report on the prairie chicken investigation, which has been published by the conservation commission and is available to anyone who asks for it.

FINANCIAL STATEMENT

of the

STATE CONSERVATION COMMISSION OF WISCONSIN

Fiscal Years of

July 1, 1928 to June 30, 1929

and

July 1, 1929 to June 30, 1930

FIRST YEAR OF BIENNIUM

July 1, 1928 to June 30, 1929

OPERATION

Unexpended balance	$ 39,622.33	
Disbursements		$ 4.30
Transferred to Fisheries		3,145.84
Unexpended balance		36,472.19
	$ 39,622.33	$ 39,622.33

ADMINISTRATION

Unexpended balance	$ 2,488.07	
Appropriation	42,933.00	
Disbursements		$ 40,290.46
Unexpended balance		5,130.61
	$ 45,421.07	$ 45,421.07

DETAIL OF DISBURSEMENTS

Salaries	$ 24,102.84	
Supplies	3,823.83	
Printing	4,429.81	
Postage	3,183.73	
Telephone and telegraph	643.19	
State car expense	348.40	
Express, freight and drayage	263.41	
Advertising	107.20	
Insurance	49.72	
Travel expense	3,338.33	
		$ 40,290.46

FORESTRY

Unexpended balance	$ 21,441.99	
Appropriation	67,400.00	
Disbursements		$ 85,517.37
Unexpended balance		3,324.62
	$ 88,841.99	$ 88,841.99

DETAIL OF DISBURSEMENTS

Salaries	$ 50,463.88	
Travel expense	15,562.50	
Printing	1,161.88	
Postage	741.75	
Insurance	558.73	
Telephone and telegraph	689.62	
Advertising	471.95	
Express, freight and drayage	67.56	
Supplies	15,799.50	
		$ 85,517.36

PARKS

Unexpended balance	$ 3,176.41	
Appropriation	23,805.00	
Refund	63.00	
Disbursements		$ 26,278.56
Unexpended balance		765.85
	$ 27,044.41	$ 27,044.41

DETAIL OF DISBURSEMENTS

Salaries	$ 18,340.53	
Supplies	4,930.82	
Printing	68.25	
Postage	184.75	
Telephone and telegraph	114.26	
Travel expense	768.31	
Express, freight and drayage	28.65	
Insurance	1,842.99	
		$ 26,278.56

DISBURSEMENTS BY PARKS

Park Administration	$ 2,328.46	
Peninsula Park	4,891.94	
Devil's Lake Park	8,429.68	
Interstate Park	3,637.78	
Nelson Dewey Park	787.26	
Pattison Park	176.50	
Northern Forest Park	3,598.27	
Perrot Park	1,143.48	
Brule Park	19.56	
Belmont Park	36.00	
Tower Hill Park	662.12	
Cushing Memorial Park	92.37	
Kettle Moraine Park	23.64	
Terry Andrae Park	309.60	
Parks Game Farm	141.90	
		$ 26,278.56

WARDENS

Unexpended balance	$ 42,756.21	
Appropriation	214,140.00	
Refunds	410.00	
Disbursements		$ 234,140.24
Unexpended balance		23,165.97
	$ 257,306.21	$ 257,306.21

DETAIL OF DISBURSEMENTS

Salaries	$ 141,511.41	
Travel expense	72,729.74	
Telephone and telegraph	943.52	
Express, freight and drayage	333.35	
Advertising	1.50	
Insurance	691.17	
Postage	239.75	
Printing	590.90	
Supplies	17,098.90	
		$ 234,140.24

FISHERIES

Unexpended balance	$ 4,190.62	
Appropriation	110,614.00	
Refund	749.79	
Transferred from Operation	3,145.84	
Disbursements		$ 118,700.25
	$ 118,700.25	$ 118,700.25

DETAIL OF DISBURSEMENTS

Salaries	$ 62,299.76	
Supplies	17,968.67	
Fish Food	23,956.04	
Travel expense	9,819.70	
Telephone and telegraph	1,326.45	
Postage	311.95	
Printing	122.14	
Express, freight and drayage	844.05	
Insurance	2,061.49	
		$ 118,700.25

DISBURSEMENTS BY HATCHERIES

Fisheries Administration	$ 7,819.58	
Madison hatchery	10,192.22	
Bayfield hatchery	14,132.33	
Oshkosh hatchery	113.56	
Minocqua hatchery	3,381.26	
Delafield hatchery	2,833.45	
Wild Rose hatchery	10,873.32	
Sturgeon Bay hatchery	4,018.45	
Sheboygan hatchery	3,761.28	
Spooner hatchery	54.26	
Eagle River hatchery	115.42	
Tenney Park hatchery	312.36	
St. Croix Falls hatchery	13,716.80	
Westfield hatchery	3,089.27	
Hebron hatchery	434.57	
Lakewood hatchery	21.92	
Hayward hatchery	911.81	
Osceola hatchery	16,049.63	
Wisconsin Rapids hatchery	975.95	
Eau Claire hatchery	2,949.16	
Sparta hatchery	2,030.88	
Antigo	605.44	
Brule hatchery	832.52	
Birchwood hatchery	385.38	
Marinette hatchery		
Transportation	9,622.88	
Collection of spawn	9,424.42	
State fair exhibit	42.04	
		$ 118,700.25

REPAIRS AND MAINTENANCE

Unexpended balance	$ 12,210.88	
Appropriation	27,265.00	
Disbursements		$ 26,729.63
Unexpended balance		12,746.25
	$ 39,475.88	$ 39,475.88

DETAIL OF DISBURSEMENTS

Forestry	$ 4,699.89	
Parks	6,743.03	
Wardens	674.18	
Fisheries	14,612.53	
		$ 26,729.63

DISBURSEMENTS BY PARKS

Park Administration	$ 333.37	
Peninsula State Park	2,158.46	
Devil's Lake State Park	2,944.26	
Interstate Park	132.28	
Nelson–Dewey Park	197.39	
Pattison State Park	35.75	
Northern Forest State Park	163.45	
Terry Andrae State Park	209.91	
Parks Game Farm	152.60	
Tower Hill State Park	97.47	
Perrot State Park	318.09	
		$ 6,743.03

DISBURSEMENTS BY HATCHERIES

Madison hatchery	$ 1,851.80	
Bayfield hatchery	2,902.24	
Minocqua hatchery	99.82	
Delafield hatchery	366.00	
Wild Rose hatchery	1,620.11	
Sturgeon Bay hatchery	55.74	
Sheboygan hatchery	8.85	
Antigo hatchery	18.75	
Eagle River hatchery	147.35	
St. Croix Falls hatchery	5,223.21	
Westfield hatchery	584.23	
Brule hatchery	332.76	
Hayward hatchery	300.69	
Osceola hatchery	833.53	
Transportation	39.67	
Collection of spawn	227.78	
		$ 14,612.53

PROPERTY AND IMPROVEMENTS

Unexpended balance	$ 25,880.08	
Appropriation	51,150.00	
Refund	32.00	
Disbursements		$ 69,352.38
Unexpended balance		7,709.70
	$ 77,062.08	$ 77,062.08

DETAIL OF DISBURSEMENTS

Administration	$ 283.74	
Forestry	15,779.79	
Parks	19,253.98	
Wardens	9,174.80	
Fisheries	24,860.07	
		$ 69,352.38

DISBURSEMENTS BY PARKS

Administration—Parks	$ 417.60	
Peninsula State Park	3,704.03	
Devil's Lake State Park	2,971.93	
Interstate Park	338.25	
Nelson Dewey State Park	144.69	
Pattison State Park	512.80	
Northern Forest State Park	8,189.24	
Parks Game Farm	1,435.98	
Tower Hill Park	409.20	
Perrot State Park	311.10	
Terry Andrae State Park	547.36	
Publicity—Parks	271.80	
		$ 19,253.98

DISBURSEMENTS BY HATCHERIES

Fisheries Administration	$ 536.50	
Madison hatchery	3,212.50	
Bayfield hatchery	6,173.80	
Minocqua hatchery	804.00	
Delafield hatchery	5,357.14	
Wild Rose hatchery	857.44	
Sturgeon Bay hatchery	1.00	
Eau Claire hatchery	5.01	
St. Croix Falls hatchery	5,989.98	
Westfield hatchery	71.66	
Brule hatchery	271.50	
Hayward hatchery	99.30	
Osceola hatchery	477.77	
Birchwood hatchery	661.20	
Antigo hatchery	19.11	
Transportation	79.56	
Collection of spawn	242.60	
		$ 24,860.07

BOUNTIES

Disbursements		$ 83,170.00
		$ 83,170.00

EMERGENCY FIRE WARDENS

Disbursements		$ 16,119.13
		$ 16,119.13

PARK PURCHASE FUNDS

Unexpended balance	$ 6,269.06	
Receipts	4,488.12	
Disbursements		$ 40.63
Unexpended balance		10,716.55
	$ 10,757.18	$ 10,757.18

LAND AND IMPROVEMENTS—WESTFIELD HATCHERY

Unexpended balance	$ 1,700.00	
Disbursements		$ 1,000.00
Unexpended balance		700.00
	$ 1,700.00	$ 1,700.00

STATE PARK RECREATION

Unexpended balance	$ 4,555.31	
Receipts	6,115.13	
Disbursements		$ 10,474.94
Unexpended balance		195.50
	$ 10,670.44	$ 10,670.44

COPPER FALLS PARK

Unexpended balance	$ 17,000.00	
Disbursements		
Unexpended balance		$ 17,000.00
	$ 17,000.00	$ 17,000.00

CLARK-McNARY FUND

Unexpended balance	$ 14,719.20	
Receipts	48,359.64	
Disbursements		$ 49,662.53
Unexpended balance		13,416.31
	$ 63,078.84	$ 63,078.84

BOAT FUND

Unexpended balance	$ 3,157.61	
Receipts	1,780.15	
Disbursements		$ 1,747.85
Unexpended balance		3,289.91
	$ 4,937.76	$ 4,937.76

HATCHERY IN RACINE, WALWORTH OR KENOSHA COUNTY

Unexpended balance	$ 9,978.60	
Disbursements		$ 745.84
Unexpended balance		9,232.76
	$ 9,978.60	$ 9,978.60

ROUGH FISH—NORTHERN WATERS

Unexpended balance	$ 11,207.46	
Appropriation	15,000.00	
Refund	123.73	
Disbursements		$ 6,593.36
Unexpended balance		19,737.83
	$ 26,331.19	$ 26,331.19

HATCHERY—LANGLADE COUNTY

Unexpended balance	$ 4,000.00	
Disbursements		$ 4,000.00
	$ 4,000.00	$ 4,000.00

HATCHERY—FORT ATKINSON

Unexpended balance	$ 3,000.00	
Disbursements		$ 3,000.00
	$ 3,000.00	$ 3,000.00

FOREST NURSERY

Unexpended balance	$ 1,900.12	
Appropriation	14,500.00	
Disbursements		$ 14,476.92
Unexpended balance		1,923.20
	$ 16,400.12	$ 16,400.12

ROUGH FISH—WINNEBAGO WATERS

Unexpended balance	$ 17,839.74	
Appropriation	20,000.00	
Receipts	2,331.52	
Disbursements		$ 19,839.58
Unexpended balance		20,331.68
	$ 40,171.26	$ 40,171.26

REMODELLING HATCHERY AND ADDITIONAL WELLS—WESTFIELD

Unexpended balance	$ 3,757.77	
Disbursements		$ 3,757.77
	$ 3,757.77	$ 3,757.77

HORICON RIVER DAM

Unexpended balance	$ 10,000.00	
Unexpended balance		$ 10,000.00
	$ 10,000.00	$ 10,000.00

HORICON MARSH REFUGE

Unexpended balance	$ 25,000.00	
Appropriation	25,000.00	
Unexpended balance		$ 50,000.00
	$ 50,000.00	$ 50,000.00

EMERGENCY APPROPRIATION FROM CONSERVATION FUND

Equipping Additional Fire Districts

Unexpended balance	$ 67.60	
Unexpended balance		$ 67.60
	$ 67.60	$ 67.60

EMERGENCY APPROPRIATION FROM CONSERVATION FUND

Mississippi Hatchery Sites

Unexpended balance	$ 20,000.00	
Disbursements		$ 673.64
Unexpended balance		19,326.36
	$ 20,000.00	$ 20,000.00

PARK ROADS

Unexpended balance	$ 32,338.58	
Appropriation	50,000.00	
Refunds	34.50	
Disbursements		$ 49,490.68
Unexpended balance		32,882.40
	$ 82,373.08	$ 82,373.08

RECEIPTS

Non-resident fishing licenses	$ 203,813.25
Fish shipping coupons	8,839.70
Non-resident hunting licenses	17,225.00
Resident hunting licenses	185,742.30
Settlers' hunting licenses	184.00
Duplicate licenses	223.00
Great Lakes fishing licenses	8,587.45
Mississippi River fishing licenses	2,552.00
Rough fish	51,967.16
Confiscations	22,603.14
Warden fees	3,834.62
Trapping licenses	24,149.43
Trap tags	23,618.74
Deer tags	33,574.00
Set line licenses	2,955.05
Guide licenses	605.00
Nursery	2,678.65
Fish dealers' licenses	1,575.00
Clamming licenses	1,530.00
Park leases and rentals	4,488.12
Park recreation	6,115.13
Fire control (Clark-McNary Fund)	48,359.64
Devil's Lake Boat Fund	1,780.15
Removal of rough fish—Winnebago waters	2,331.52
Decoy bands	1,277.70
Interest	10,434.47
Refunds	2,011.95
Miscellaneous	23,938.12
	$ 696,994.29

CONSERVATION FUND

Unexpended balance	$ 425,267.94	
Receipts	684,547.87	
Interest on fund	10,434.47	
Refunds on disbursements	2,011.95	
Disbursements		$ 735,142.60
Bounties		83,170.00
Refunds of receipts		7,618.61
Unexpended balance		296,331.02
	$ 1,122,262.23	$ 1,122,262.23

SECOND YEAR OF BIENNIUM

July 1, 1929 to June 30, 1930

OPERATION

Unexpended balance	$ 36,472.19	
Transferred to Forestry		$ 1,141.92
Transferred to Fisheries		9,443.37
Unexpended balance		25,886.90
	$ 36,472.19	$ 36,472.19

ADMINISTRATION

Unexpended balance	$ 5,130.61	
Appropriation	57,753.92	
Disbursements		$ 50,690.61
Unexpended balance		12,193.92
	$ 62,884.53	$ 62,884.53

DETAIL OF DISBURSEMENTS

Salaries	$ 30,210.99	
Travel expense	5,135.99	
Supplies	4,736.80	
Postage	3,424.75	
Telephone and telegraph	422.30	
Express, freight and drayage	169.84	
Printing	6,369.23	
Advertising	32.70	
State Car expense	188.01	
		$ 50,690.61

FORESTRY

Unexpended balance	$ 3,324.62	
Transferred from operation	1,141.92	
Appropriation	78,750.00	
Refund	68.64	
Disbursements		$ 80,077.42
Unexpended balance		3,207.76
	$ 83,285.18	$ 83,285.18

DETAIL OF DISBURSEMENTS

Salaries	$ 54,350.99	
Travel expense	11,958.78	
Printing	441.04	
Postage	60.00	
Insurance	781.59	
Telephone and telegraph	1,097.14	
Advertising	80.90	
Express, freight and drayage	148.77	
Supplies	11,158.21	
		$ 80,077.42

PARKS

Unexpended balance	$ 765.85	
Appropriation	35,815.00	
Disbursements		$ 23,027.55
Unexpended balance		13,553.30
	$ 36,580.85	$ 36,580.85

DETAIL OF DISBURSEMENTS

Salaries	$ 18,158.49	
Supplies	2,673.32	
Travel expense	757.06	
Telephone and telegraph	197.18	
Postage	50.00	
Printing	37.64	
Express, freight and drayage	22.00	
Advertising	2.40	
Insurance	1,129.46	
		$ 23,027.55

DISBURSEMENTS BY PARKS

Parks administration	$ 2,907.13	
Peninsula State Park	5,852.26	
Devil's Lake State Park	6,814.23	
Interstate Park	2,059.12	
Nelson Dewey State Park	498.17	
Pattison State Park	27.12	
Northern Forest State Park	300.00	
Terry Andrae State Park	2,891.47	
Brule State Park	30.78	
Belmont State Park	69.16	
Tower Hill State Park	525.36	
Perrot State Park	667.09	
Cushing Memorial State Park	112.77	
Potowatomi State Park	7.80	
Copper Falls State Park	265.09	
		$ 23,027.55

WARDENS

Unexpended balance	$ 23,165.97	
Appropriation	236,513.96	
Disbursements		$ 229,593.76
Unexpended balance		30,086.17
	$ 259,679.93	$ 259,679.93

DETAIL OF DISBURSEMENTS

Salaries	$ 142,578.19	
Travel expense	75,646.96	
Advertising	239.30	
Supplies	8,429.14	
Telephone and telegraph	1,104.29	
Express, freight and drayage	752.77	
Postage	100.00	
Printing	279.15	
Insurance	643.96	
		$ 229,593.76

FISHERIES

Appropriation	$ 183,174.00	
Transferred from Operation	9,443.37	
Refunds	299.60	
Disbursements		$ 151,946.98
Unexpended balance		40,969.99
	$ 192,916.97	$ 192,916.97

DETAIL OF DISBURSEMENTS

Salaries	$ 84,481.03	
Supplies	24,866.69	
Fish food	25,117.10	
Travel expense	12,931.52	
Telephone and telegraph	1,189.87	
Postage	90.00	
Printing	444.99	
Express, freight and drayage	930.88	
Advertising	354.90	
Insurance	1,540.00	
		$ 151,946.98

DISBURSEMENTS BY HATCHERIES

Fisheries administration	$ 10,951.21
Madison hatchery	9,952.89
Bayfield hatchery	15,895.86
Minocqua hatchery	8,417.89
Delafield hatchery	5,565.02
Wild Rose hatchery	12,774.61
Sturgeon Bay hatchery	5,162.75
Sheboygan hatchery	3,935.03
Spooner hatchery	92.13
Eagle River hatchery	206.70
Tenney Park hatchery	71.30
St. Croix Falls hatchery	12,138.65
Westfield hatchery	5,732.61
Lakewood hatchery	17.22

Hayward hatchery	$ 1,519.72	
Osceola hatchery	17,149.80	
Wisconsin Rapids hatchery	1,594.09	
Eau Claire hatchery	4,310.93	
Sparta hatchery	2,495.75	
Antigo hatchery	50.22	
Burlington hatchery	3,737.32	
Hebron hatchery	419.96	
Brule hatchery	1,849.44	
Birchwood hatchery	73.38	
State Fair Exhibit	30.50	
Transportation	11,921.05	
Collection of spawn	15,880.95	
		$ 151,946.98

FIELD INVESTIGATOR

Appropriation	$ 3,900.00	
Disbursements		$ 902.19
Unexpended balance		2,997.81
	$ 3,900.00	$ 3,900.00

DETAIL OF DISBURSEMENTS

Salaries	$ 232.40	
Travel expense	645.50	
Supplies	22.34	
Insurance	1.95	
		$ 902.19

GAME FARM

Appropriation	$ 37,405.00	
Disbursements		$ 32,378.41
Unexpended balance		5,026.59
	$ 37,405.00	$ 37,405.00

DETAIL OF DISBURSEMENTS

Salaries	$ 13,637.61	
Travel expense	7,274.69	
Supplies	10,773.06	
Printing	148.23	
Postage	117.46	
Telephone and telegraph	151.85	
Express, freight and drayage	253.31	
Insurance	22.20	
		$ 32,378.41

EDUCATION AND PUBLICATIONS

Appropriation	$ 15,958.24	
Disbursements		$ 9,349.17
Unexpended balance		6,609.07
	$ 15,958.24	$ 15,958.24

DETAIL OF DISBURSEMENTS

Salaries	$ 3,793.63	
Travel expense	1,692.51	
Supplies	2,893.45	
Printing	174.77	
Postage	669.04	
Telephone and telegraph	101.61	
Drayage	24.16	
		$ 9,349.17

RESEARCH BUREAU

Appropriation	$ 8,100.00	
Disbursements		$ 1,350.24
Unexpended balance		6,749.76
	$ 8,100.00	$ 8,100.00

DETAIL OF DISBURSEMENTS

Salaries	$ 208.32	
Travel expense	596.01	
Supplies	537.33	
Printing	8.58	
		$ 1,350.24

REPAIRS AND MAINTENANCE

Unexpended balance	$ 12,746.25	
Appropriation	54,875.00	
Disbursements		$ 30,239.06
Unexpended balance		37,382.19
	$ 67,621.25	$ 67,621.25

DETAIL OF DISBURSEMENTS

Forestry	$ 10,550.63	
Parks	10,762.86	
Wardens	185.28	
Fisheries	8,710.54	
Game Farm	29.75	
		$ 30,239.06

DISBURSEMENTS BY PARKS

Peninsula State Park	$ 4,442.59	
Devil's Lake State Park	2,395.61	
Interstate Park	1,088.77	
Nelson Dewey Park	378.72	
Pattison State Park	9.50	
Northern Forest State Park	186.00	
Belmont State Park	40.00	
Tower Hill State Park	251.91	
Terry Andrae State Park	1,425.25	
Perrot State Park	541.26	
Cushing Memorial State Park	3.25	
		$ 10,762.86

DISBURSEMENTS BY HATCHERIES

Madison hatchery	$ 1,049.21	
Bayfield hatchery	1,263.61	
Minocqua hatchery	240.54	
Delafield hatchery	1,204.13	
Wild Rose hatchery	916.94	
Sturgeon Bay Hatchery	875.63	
Sheboygan hatchery	34.30	
Sparta hatchery	302.58	
Eagle River hatchery	54.16	
Eau Claire hatchery	301.08	
Tenney Park hatchery	33.67	
St. Croix Falls hatchery	676.83	
Westfield hatchery	303.72	
Brule hatchery	127.79	
Hebron hatchery	253.16	
Burlington hatchery	6.55	
Osceola hatchery	775.32	
Transportation	164.53	
Collection of spawn	126.79	
		$ 8,710.54

PROPERTY AND IMPROVEMENTS

Unexpended balance	$ 7,709.70	
Appropriation	120,775.00	
Sale of Automobiles	660.00	
Disbursements		$ 91,948.86
Unexpended balance		37,200.84
	$ 129,144.70	$ 129,144.70

DETAIL OF DISBURSEMENTS

Administration	$ 496.85	
Forestry	16,903.54	
Parks	17,345.59	
Wardens	8,524.27	
Fisheries	40,386.99	
Game Farm	7,905.79	
Education and Publications	380.83	
		$ 91,943.86

DISBURSEMENTS BY PARKS

Peninsula State Park	$ 6,459.36	
Devil's Lake State Park	2,875.35	
Interstate Park	854.50	
Northern Forest State Park	471.31	
Belmont State Park	32.95	
Tower Hill State Park	72.14	
Terry Andrae State Park	6,220.31	
Potowatomi State Park	153.24	
Perrot State Park	12.68	
Cushing Memorial State Park	193.75	
		$ 17,345.59

DISBURSEMENTS BY HATCHERIES

Fisheries Administration	$ 465.00	
Madison hatchery	3,251.33	
Bayfield hatchery	2,946.10	
Minocqua hatchery	2,786.04	
Delafield hatchery	70.00	
Wild Rose hatchery	2,137.87	
Sturgeon Bay hatchery	597.91	
Sparta hatchery	1,236.08	
Eagle River hatchery	596.82	
Eau Claire hatchery	768.73	
St. Croix Falls hatchery	1,258.79	
Westfield hatchery	4,166.03	
Brule hatchery	315.50	
Burlington hatchery	9,956.12	
Hayward hatchery	249.95	
Osceola hatchery	7,210.73	
Birchwood hatchery	185.00	
Wisconsin Rapids hatchery	19.33	
Antigo hatchery	155.77	
Transportation	1,727.92	
Collection of spawn	285.97	
		$ 40,386.99

BOUNTIES

Disbursements—General Fund	$ 77,294.00
Disbursements—Conservation Fund	1,140.00
	$ 78,434.00

PREDATORY ANIMAL CONTROL

Appropriation	$ 15,000.00	
Disbursements		$ 5,145.09
Unexpended balance		9,854.91
	$ 15,000.00	$ 15,000.00

EMERGENCY FIRE WARDENS

Disbursements	$ 49,533.83
	$ 49,533.83

PARK PURCHASE FUND

Unexpended balance	$ 10,716.55	
Receipts	6,072.39	
Unexpended balance		$ 16,788.94
	$ 16,788.94	$ 16,788.94

LAND AND IMPROVEMENTS—WESTFIELD HATCHERY

Unexpended balance	$ 700.00	
Unexpended balance		$ 700.00
	$ 700.00	$ 700.00

STATE PARK RECREATION

Unexpended balance	$ 195.50	
Receipts	6,535.00	
Disbursements		$ 4,027.56
Unexpended balance		2,702.94
	$ 6,730.50	$ 6,730.50

COPPER FALLS STATE PARK

Unexpended balance	$ 17,000.00	
Disbursements		$ 15,008.83
Unexpended balance		1,991.17
	$ 17,000.00	$ 17,000.00

CLARK-McNARY FUND

Unexpended balance	$ 13,416.31	
Receipts	40,135.04	
Disbursements		$ 46,304.28
Unexpended balance		7,247.07
	$ 53,551.35	$ 53,551.35

BOAT FUND

Unexpended balance	$ 3,289.91	
Receipts	1,640.65	
Disbursements		$ 856.64
Unexpended balance		4,073.92
	$ 4,930.56	$ 4,930.56

HATCHERY IN RACINE, WALWORTH OR KENOSHA COUNTY

Unexpended balance	$ 9,232.76	
Appropriation	10,000.00	
Disbursements		$ 19,232.76
	$ 19,232.76	$ 19,232.76

ROUGH FISH—NORTHERN WATERS

Unexpended balance	$ 19,737.83	
Appropriation	15,000.00	
Disbursements		$ 7,380.35
Unexpended balance		27,357.48
	$ 34,737.83	$ 34,737.83

FOREST NURSERY

Unexpended balance	$ 1,923.20	
Appropriation	27,500.00	
Disbursements		$ 14,631.32
Unexpended balance		14,791.88
	$ 29,423.20	$ 29,423.20

ROUGH FISH—WINNEBAGO WATERS

Unexpended balance	$ 20,331.68	
Appropriation	20,000.00	
Receipts	3,339.82	
Disbursements		$ 8,942.07
Unexpended balance		34,729.43
	$ 43,671.50	$ 43,671.50

HORICON RIVER DAM

Unexpended balance	$ 10,000.00	
Disbursements		$ 1,339.95
Unexpended balance		8,660.05
	$ 10,000.00	$ 10,000.00

HORICON MARSH REFUGE

Unexpended balance	$ 50,000.00	
Appropriation	25,000.00	
Unexpended balance		$ 75,000.00
	$ 75,000.00	$ 75,000.00

PARK ROADS

Unexpended balance	$ 32,882.40	
Appropriation	50,000.00	
Disbursements		$ 65,202.59
Unexpended balance		17,679.81
	$ 82,882.40	$ 82,882.40

FIRE LOSS

Insurance	$ 25.43	
Disbursements		$ 25.43
	$ 25.43	$ 25.43

RECEIPTS

Non-resident fishing licenses	$ 215,756.38
Fish shipping coupons	7,941.45
Non-resident hunting licenses	5,725.00
Resident hunting licenses	148,250.80
Settlers' hunting licenses	149.00
Duplicate licenses	341.00
Deer tags	337.85
Trapping licenses	25,128.45
Trap tags	26,329.06
Confiscations	17,609.84
Warden fees	4,204.33
Clamming licenses	1,655.00
Set line licenses	2,299.50
Guide licenses	565.00
Fish dealer licenses	1,425.00
Great Lakes fishing licenses	9,390.58
Mississippi river fishing licenses	2,394.50
Rough fish	31,366.91
Decoy bands	1,639.54
Nursery	3,822.45
Fur farm licenses	12,666.13
Deer farm licenses	126.00
Game farm licenses	191.75
Park leases and rentals	6,072.39
Park recreation	6,535.00
Fire control (Clark McNary fund)	40,135.04
Boat Fund receipts	1,640.65
Removal of rough fish—Winnebago	3,339.82
Interest	7,153.96
Refunds	553.54
Insurance receipt	25.43
Miscellaneous	17,799.06
Forestry mill tax	298,797.62
	$ 901,368.03

CONSERVATION FUND

Unexpended balance	$ 296,331.02	
Receipts	594,837.48	
Forestry Mill Tax	298,797.62	
Interest on fund	7,153.96	
Refunds on disbursements	553.54	
Insurance receipts	25.43	
Disbursements		$ 868,298.57
Bounties		1,140.00
Refunds of receipts		7,844.30
Unexpended balance		320,416.18
	$ 1,197,699.05	$ 1,197,699.05

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