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ANNUAL REPORT

MINNESOTA DEPARTMENT
OF NATURAL RESOURCES

January 1, 1971 - December 31, 1971

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1971

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

COMMISSIONER OF NATURAL RESOURCES - Robert L. Herbst

DEPUTY COMMISSIONER - Clarence B. Buckman

ASSISTANT COMMISSIONER (Administration) - Joseph N. Alexander

ASSISTANT COMMISSIONER (Planning) - Archie D. Chelseth (1972)

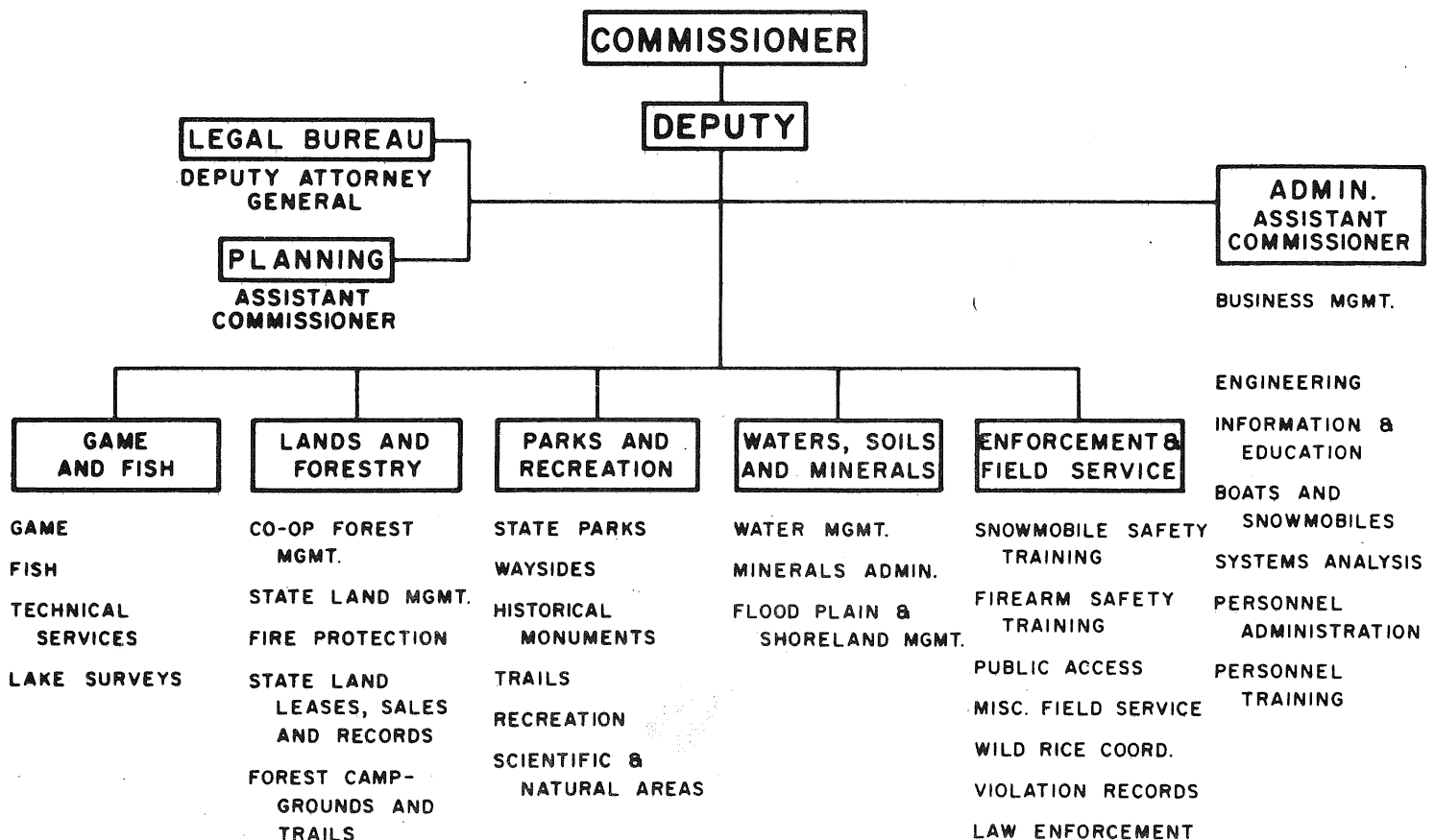
ENFORCEMENT & FIELD SERVICE - Donald E. Fultz, Chief Natural Resources Officer

DIVISION OF GAME & FISH - Milo Casey, Director

DIVISION OF LANDS & FORESTRY - William Aultfather, Director

DIVISION OF PARKS & RECREATION - U. W. Hella, Director

DIVISION OF WATERS, SOILS & MINERALS - Eugene R. Gere, Director



(Reorganization Chart Effective January, 1971)



STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES
CENTENNIAL OFFICE BUILDING • ST. PAUL, MINNESOTA • 55101

The Honorable Wendell R. Anderson
Governor
State of Minnesota

Dear Governor Anderson:

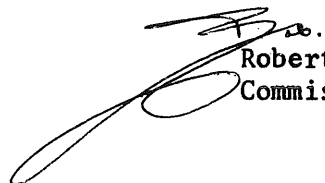
We are pleased to present this report highlighting the accomplishments of the Department of Natural Resources during calendar year 1971.

I believe it has been a year of accomplishment for the Department in terms of progress in planning, coordinating and carrying out meaningful programs and policies designed to protect our environment, providing the ultimate in outdoor recreation activities to our citizens and visitors, and carrying the conservation message to the public.

We have been aided tremendously by the outstanding legislation passed by the last session; by you and your staff with your leadership and assistance, and by the whole-hearted cooperation and hard work of our Department employees.

It is my sincere hope that our efforts have contributed significantly to the overall accomplishments of the Administration during the year 1971.

Respectfully submitted,


Robert L. Herbst
Commissioner of Natural Resources

ADMINISTRATIVE DIVISION

Bureau of Business Management

The following were among the accomplishments of the Bureau of Business Management in 1971.

- * Established common administrative regional boundaries for the Department.

- * Established first regional headquarters in rented facilities in Brainerd and employed regional office manager to handle all fiscal work.

- * Established imprest cash bank system at Brainerd for paying local bills.

- * Preliminary work completed to establish imprest cash bank system for the Bemidji Regional headquarters. (Effective February 23, 1972, regional office manager hired and imprest cash system started).

- * Conducted comprehensive study of sites for location of a regional headquarters in southwestern Minnesota and prepared report of findings.

- * Continued programs study of computerization of license activities. There were 81,024 snowmobiles registered during 1971 to bring total to 232,030 by the end of the year.

- * Fishing licenses sold during 1971: resident individual fishing 294,684; resident combination fishing (husband & wife) --368,125; non-resident combination fishing -- 98,812; non-resident short term fishing --89,103.

- * Hunting Licenses sold during 1971: Resident small game -- 288,218; non-resident small game -- 1,970; resident deer (bow & arrow) -- 17,360; non-resident deer (bow & arrow) 111; resident moose--400.

- * In conjunction with Department of Administration and Civil Service, completed the first phase of the organization and management study in Division of Game and Fish.

- * Completed study of present Fiscal Organization and formulated recommended changes to speed invoice processing and reduce record keeping.

Bureau of Engineering

In addition to completing the Department's routine acquisition and development projects several new activities were undertaken by Engineering in 1971.

These included the design and construction of a fish and wildlife pool at the Department's Minnesota State Fair exhibit building.

A new Department emblem and letterhead was designed to compliment the name change.

Nine recreational maps of Minnesota State Forests were prepared.

The Bureau was active in selection of a location and the mapping of the site for the proposed Northwest Regional Headquarters. Plans and specifications are presently being prepared for the building construction.

Work on preparation of the departmental management plan for the Upper St. Croix River Valley, being developed in conjunction with the St. Croix Scenic River Program.

Bureau of Information and Education

Environmental Education -- Great progress was recorded in 1971 in development and implementation of a K-12 Environmental Education Curriculum in Minnesota schools, first mandated by the Legislature in 1969.

The Bureau's environmental education consultant and other staff members helped to implement an experimental curriculum in 12 pilot school districts. Working jointly with the Department of Education, the Bureau monitored the project and conducted several unique teacher-student workshops during the year, with more than 200 teachers trained. An evaluation conference was held in May, 1971 to determine the success of the project and allow teachers to make appropriate recommendations for modification and revisions. The Bureau also was instrumental in setting up an Advisory Task Force comprised of representatives from statewide environmental and conservation-oriented groups. Established in 1970, this task force evolved into an ad hoc environmental planning group in 1971, eventually leading to formation of the Governor's Environmental Education Council on which the Bureau is represented by its consultant.

The Legislature late in 1971 appropriated to the DNR \$125,000 for the biennium. These funds now are being used to rewrite and publish the pilot materials based on teacher evaluation and to develop mini-units of instruction to be integrated with present materials.

While greater emphasis was being placed on Education, the Bureau was also bolstering its information program in several key areas.

Electronics Media Service -- Placed in service the last week in August, the Bureau's Electronics Media Service (Anasaphone) met with great success during its first four months of operation. This made spot news and vital information readily available to every station (85) in the state on a daily (24 hour) basis. More than 100 two-minute tapes were prepared by Department personnel and placed in service on the ansaphone for 24-hour periods, five days a week. An average of 13 radio stations per day recorded the programs for re-broadcast to the public; and numerous tapes were used by as many as 28 stations on a given day. All facets of the DNR program were covered -- most

popular tapes were those on snowmobile safety, and a weekly report on snowmobile trail conditions in State forests and State Parks and snow depths throughout Minnesota; and those on hunting and winter fishing. The snowmobile trails tapes were carried regularly by WCCO every Friday night and used by an average of 27 other stations. The two wire services, AP and UPI, cooperated by sending daily advisory messages to radio stations on tape content, and the phone number to call.

The radio effort will be augmented in 1972 by preparation of one five-minute feature tape weekly to be mailed to all radio stations for more in-depth coverage.

Stature of Department Magazine Continues to Grow-- As of January 1, 1971, in accordance with the Department's name change, The Conservation Volunteer became The Minnesota Volunteer. The mailing list was expanded from 50,000 to 65,000 copies as directed by the 1969 Legislature which mandated that 10,000 copies go to Minnesota public and parochial schools and an additional 5,000 to the general public. Despite this generous increase, a backlog grew steadily through the waning months of 1971 and by the end of the year, more than 2,000 new names crowded the waiting list. Public response to the circulation increase from school systems and citizens alike was most appreciative and rewarding. Correspondence relating the Volunteer alone averaged 600 pieces per month.

News Service: -- The Bureau reached radio and television stations, newspapers and magazines throughout the state via a wealth of interesting and informative news and photo releases and features. A total of 51 Weekly Newsletters containing more than 350 stories related to Department activities and programs reached all media. Additionally, 100 special releases, many complemented by photographs, were sent to the press.

In an increasing educational effort, a total of 61,726 publications were mailed on request to Minnesota residents in 1971, an increase of more than 15,000 from the years previous distributed to the State Fair.

State Fair Exhibit -- Bureau personnel again supervised the state fair exhibit which in 1971 featured the "Quality of Life" theme. Two new wildlife pools were constructed adjacent to the Natural Resources Building and met with tremendous public acceptance. The Department's exhibits have always been one of the top Fair attractions, drawing more than 800,000 visitors throughout the exposition.

Film Loan Library -- The Bureau's Film Library was again deluged with requests. Over the year, 2,304 films (68 different titles are available) were loaned out with 4,184 total showings to an estimated combined audience of more than 180,400 persons. (These totals probably ran 25 per cent higher since attendance figures were missing on many return cards.)

Audio-Visual Service -- Another new program of the Bureau was production of film-strips and slides series on natural resources topics. This program was initiated in late 1971 and has since grown to a library of 11 different titles with more than 40 filmstrips available to the public on a loan basis. The Bureau significantly bolstered its

slide collection in 1971. This program was met with near-fantastic success as educators, sportsmen's clubs and Department employees borrowed nearly 2,500 individual slides during the year. Many of these color slides were reproduced in magazines throughout the state and nationwide.

Photo Service -- The Bureau also provided a comprehensive Photo Service for the Department. Its staff photographer took countless photographs, many of which were aerial shots used as evidence in courtroom litigations or to provide dramatic proof of the success of many department projects and activities.

Photographs were also taken and processed for the ten publications produced by the Bureau in 1971. These publications varied from small pamphlets made available to the general public, such as the "Snowmobile Trails Guide," to the more refined "Learning to Live" publication distributed to Minnesota teachers as a beginner's manual for environmental education activities.

The Bureau also helped the various Divisions of the Department to produce brochures dealing with such matters as shoreland management, new trail systems and wildlife habitat improvement programs.

Outdoor Safety -- The Bureau's outdoor safety program was also strengthened considerably in 1971. A boating safety promotion was launched with more than 20,000 Minnesota residents responding to the Bureau's "safety test". A safety decal was issued to those who passed the test.

A series of outdoor safety cartoons was also devised and sent to newspapers throughout the state. In addition, the Bureau's outdoor safety specialist appeared on live television and radio programs and before numerous organizations to explain the Department's outdoor safety campaign and its programs.

Bureau of Planning

Recreation Sites Inventory -- During 1971 the Bureau of Planning completed 25 per cent of the new inventory of the state's 6,000 to 8,000 recreation sites; in connection with updating begun in 1971 to the state's Comprehensive Outdoor Recreation Plan (CORP) scheduled for publication 1974. Work also progressed in the drafting of narrative sections of the Plan. CORP combines an inventory of Minnesota's recreational resources with a plan for meeting present and future outdoor recreation needs.

Project 80 Report Completed -- "Minnesota Resource Potentials in Outdoor Recreation" (Project 80) was completed in 1971, presenting many innovative suggestions and recommendations aimed at meeting future needs in the state's outdoor recreation system. Project 80 included an inventory of natural and historic sites more complete than any previously assembled presented in a separate Appendix "Natural and Historic Areas of Minnesota". Primary objective of Project 80 was to provide the Legislature and the managing agencies a means of evaluating needs to insure the protection of outstanding natural

resources while providing for ample recreational opportunities for Minnesota citizens. The study was a joint effort of the Department of Natural Resources and the State Planning Agency.

Federal and State Grants -- The Bureau's Grants Section processed 62 applications for funds, from state and local agencies, bringing the number of active projects to 292. Federal funds totaling \$4.4 million were made available to Minnesota for the current fiscal year, to be used on a matching basis for acquisition of recreation lands and open space, and development of outdoor recreation facilities. A total of \$13.4 million in federal funds has been made available on 275 separate projects under this program since its beginning in 1965.

Environmental Impact Reviews -- A new responsibility undertaken by the Bureau of Planning in 1971 involved review of environmental impact statements submitted by other agencies for projects involving Federal funds, as well as permit applications and notifications of intent to apply for Federal funds. More than 300 such documents were processed and passed on to the appropriate Divisions in DNR for review as to the effect the projects might have on the state's natural resources.

Upper St. Croix Scenic Riverway -- The Bureau was involved in development of a resource management plan for the Riverway project-- a cooperative effort with several other DNR divisions and bureaus and the National Park Service. To be completed by December, 1972, the plan will encompass not only the river corridor but the adjacent lands in St. Croix State Park and the Chengwatana and St. Croix State forests.

Other Planning Activities -- Technical assistance provided to two major power companies in Minnesota to help in protecting their lands while providing maximum public opportunities for outdoor recreation.

A Memorandum of Understanding between DNR and the Highway Department was adopted, setting procedures for DNR review of proposed highway construction projects.

A Memorandum of Understanding between DNR and the University of Minnesota regarding use of Itasca State Park for research and educational purposes is under way.

The Bureau of Planning participated in the planning efforts of other organizations, including the Great Lakes Basin Commission; Souris-Red-Rainy River Basins Commission; Water Resources Coordinating Committee; Lower St. Croix River Task Force; Upper Mississippi National Recreation Area Task Force; the Minnesota Resources Commission (on its study relating to the Voyageurs National Park); and the Superior National Forest (on BWCA matters).

ENFORCEMENT AND FIELD SERVICE

Sport Fishing -- A total of 2,951 people were arrested during 1971 in violation of sport fishing laws and regulations. To maintain the high level of sport fishing activity and insure the Department income from license sales, conservation officers were active checking licenses and fish take; assuring compliance with laws during the fishing season. This activity is designed to provide license holders with equal opportunity to fish; and to protect brood stock during the closed seasons.

Hunting -- A total of 1,745 people were arrested during 1971 for violation of hunting laws and regulations. Program geared to protect game animals during the closed seasons and to insure adequate brood stock by concentrated enforcement efforts in areas of concentrated populations.

Commercial Activities -- These include trapping, fishing, minnow dealers, wild rice, shooting preserves and game farms; enforcement of laws and regulations dealing with the licensing, taking, buying and selling of wild animals and parts thereof. A total of 468,144 people bought licenses during 1971 to participate in these activities.

Water and Watercraft Safety -- A total of 296 people were arrested in 1971 for violation of boat and water safety laws and regulations. Enforcement officers concentrate efforts on making the waters of the state safer and more enjoyable by apprehending and prosecuting violators.

Snowmobiles -- Conservation officers apprehended 1,236 violators of snowmobile laws and regulations during patrol in 1971. With the number of registered snowmobiles exceeding the 250,000 mark it became necessary to increase patrols to accommodate public complaints of violations and to assist other law enforcement agencies, upon their requests, because of the increased disregard for the laws and regulations.

Waters, Soils and Minerals Regulations -- Conservation enforcement officers were active during the year to assure compliance with laws relating to public waters regarding removal of vegetation, alteration of cross section of lakes and streams, and obstruction of waters. A total of 594 permits were investigated by conservation officers.

Snowmobile Safety Training -- The Division of Enforcement and Field Service plans, directs and supervises the Snowmobile Training Program, training and educating youngsters in safe operation and issuing certificates to operators who successfully complete the safety education course. Training was given during the year by more than 3,600 volunteer instructors throughout the state, who serve without compensation, with 893 groups cooperating in the program. More than 20,900 youngsters were trained during the year, bringing the total trained since the program's inception to 40,808. The Division of Enforcement is grateful to those individual volunteers and sponsoring agencies who gave of their time and talents to assure the success of this vital training program.

Firearm Safety Training -- The Division's highly successful Firearm Safety Training program which trains youngsters from 12 to 16 years of age in the safe and proper use of firearms at home, in the field and on the range, and develops sportsmanlike attitudes in youngsters to eliminate firearms accidents among trained hunters, continued to progress. A total of 26,229 were trained during 1971, with the total trained to date exceeding 320,000. Again, the Division is indebted to the volunteer instructors and sponsoring groups for their contributions to the success of this safety effort.

Predator Control Program -- Management of the predator control program involves controlling predatory wild animals doing damage on public and private property by investigating and opening all areas where damage is determined. A total of 1,568 predators were taken in 1971.

Damage complaints investigated by conservation officers include controlling waterfowl, big and small game and beaver predation on private land, assisting offended land owners in remedial action to alleviate damage to unharvested or other private areas. Conservation officers fly pollution patrols and check on cases of pollution. A total of 165 arrests for violation of pollution laws were recorded in 1971.

Public Access Program -- The Division of Enforcement and Field Service is responsible for obtaining good quality public accesses on lakes of 150 acres or more in size; developing each access to provide a serviceable launching ramp and parking area; and maintaining each access in good condition at all times. A total of 49 public access sites were developed in the current year.

Wild Rice Management -- Minnesota's wild rice crop is a vital factor to the well-being of the Indian and white harvesters of the northern half of the state. They are in danger of becoming relief charges of the state and counties, many of which are already overburdened with relief loads. We have the moral obligation to these people to strictly regulate the wild rice harvesting on all public waters of the state and to provide research, development and management programs.

Surveys and Censuses -- Assisted other Department divisions in census and surveys of wild animal population to determine length of seasons in order to properly manage the various species.

Cooperation -- Other Agencies -- Assisted other Department divisions with field service activities as assigned by the Commissioner of Natural Resources.

Administration -- Provided supervision and in-service training planning for field force, to maintain records and inventory of equipment and activities; and to maintain departmental public relations.

GAME AND FISH

Section of Game

Acquisition

Wetlands -- A total of 125 tracts of wildlife wetlands comprising 14,827 acres was acquired including eight easements. The total cost of this acquisition was \$703,687,40.

Development

Waterfowl Impoundments-- A total of 29 waterfowl impoundments (2,851 acres) were constructed during the year. Larger impoundments included an 80-acre impoundment on the Sigler Wildlife Management Area in Sibley County; 560-acres on the Moose-Wallow WMA; a 50-acre area on the Ben Draper WMA and a 380-acre area on the Daggett Brook WMA all in Cass County. A 90-acre area on the Ereaux WMA in Morrison County was also completed. On the Eckvoll WMA in Marshall County construction has been completed on 14,520 feet of dike that will impound approximately 300 acres.

During this period 364 potholes were blasted and dug to provide additional waterfowl breeding habitat throughout the state.

Wildlife Management Operations -- Management work included construction of 33 miles of roads and seven miles of trails to provide hunter walking access to new projects, and hunter walking trails. Eighteen new parking lots also were built.

In addition 7,500 rods (23.4 miles) of fence was constructed along wildlife management area boundaries to prevent cattle or agricultural intrusion. About 1,860 wildlife management area and game refuge signs were posted including various informational types.

Control of noxious vegetation was performed on 300 different sites totaling 8,780 acres.

Grassland Management -- A total of 2,075 acres was seeded to legume or other permanent cover crops to provide ground nesting habitat for pheasants, waterfowl and, in some cases, food for ruffed grouse. In relation to lands planted to cover crops, 416 sharecrop leases were arranged with adjoining landowners to provide food plots and nesting cover in return for food plots and nesting cover on state lands.

Ninety-nine cover planting sites were established on state wildlife management areas throughout the south and western portions of the state. These were composed of 60,600 trees and 73,500 shrubs. A planting consists of a group of conifers surrounded by shrubs to provide future winter cover for pheasants and other wildlife.

Woodland Management -- Under the Deer Habitat Improvement Program, 298 sites totaling 19,500 acres were improved to provide better habitat. Treatments included shearing, crushing and burning to create young forest cover types or openings.

Cooperative Management

Waterfowl Lake Designation -- Hearings were held on five lakes and these lakes were designated for wildlife management. The lakes are Perch, Cottonwood and Eagle in Blue Earth County; Buffalo in Waseca County; and Rice in Faribault County. These lakes are presently drawn down to improve habitat for waterfowl and furbearers and will be returned to normal water levels in the near future.

Private Land Development -- Progress continued on private land habitat improvement projects during 1971 with completion of about 300 projects. These included the establishment of woody cover, nesting cover, food plots and development and restoration of wetlands on private lands.

Guidance of wildlife habitat improvement projects carried out by Future Farmer of America (FFA) Chapters and 4-H Clubs continued in 1971. Section of Game personnel have also taken part in the annual FFA Leadership Camp, 4-H Conservation Camp, chapter and club meetings and presented information on wildlife conservation. An annual 4-H conservation field day was established through cooperative efforts of the Section of Game and the University of Minnesota Extension Service. These field days are held to reward 4-H Club members who have done an outstanding job on wildlife habitat improvement projects. The 1971 field day was held at the Lac Qui Parle Wildlife Management Area.

The National FFA Association added a Wildlife Habitat Proficiency Contest in 1971. The Private Land Coordinator assisted in judging this contest in Kansas City, Kansas.

Many sportsmens clubs have encouraged habitat projects on private and club lands.

Pheasant Chick Program -- A total of 52,293 day-old pheasant chicks were hatched at the Carlos Avery Game Farm and distributed to cooperating sportsmens clubs, FFA Chapters, and 4-H Clubs. These birds were reared as club projects and released into the wild.

Cooperation with Agricultural Agencies -- Close cooperation was maintained with the Agricultural Stabilization and Conservation Service (ASCS) of the U.S. Department of Agriculture. Section of Game personnel served as members of the advisory group which develops cost-sharing practices beneficial to wildlife under this farm program. Recommendations were made regarding land use measures under the Set-Aside acres and Water Bank Programs.

Technical assistance was provided in the area of wildlife and recreation by section personnel at state and local meetings of the Minnesota Association of Soil and Water Conservation Districts.

One man from the Section of Game has been assigned full time to give direction to Resources Conservation Development projects in west-central Minnesota under programs authorized by the U.S. Department of Agriculture.

State Fair -- A new pond was constructed at the state fairgrounds in 1971. Many hours were spent by section personnel developing the south portion of the pond as a waterfowl marsh. In addition informational displays were set up and live animals exhibited. These displays were very popular during the 1971 State Fair.

New Concepts

During 1971 several new changes occurred in the management of game species.

A 32-day pheasant season was authorized for portions of southern and southwestern Minnesota with new shooting hours from sunrise to sunset. Traditionally the shooting hours started at 10 A.M., but the earlier hours provided more recreation.

Minnesota's first moose hunt in 49 years took place in October and December for a total of 32 days. Two separate areas were set up -- one in the northwestern and the other in the northeastern portion of the state. Of 400 permits issued to 1,600 hunters, 374 moose were taken for a 93.5 percent success rate. This limited season provided a great variety of recreation; however, only 1,600 people out of 37,000 applying for permits were able to benefit from this new hunt.

The black bear was given the status of a game animal and the first season held in the fall of 1971.

The 1971 Legislature provided the Department of Natural Resources with new tools to manage Minnesota's deer population. The Department now has authority to limit hunters, set up a more flexible season to increase recreational opportunity and improve hunting quality.

The "Save the Wetlands" program received a boost with an additional one dollar surcharge on the small game license. An increase in funds was required due to increases in land cost and the need for an expanded program.

Research and Investigation

Opening weekend bag checks were conducted by Section of Game personnel on various state-owned wildlife management areas, and other specific locations, for deer, ruffed and sharp-tailed grouse, pheasants, geese and ducks. Extensive game censuses were conducted on the ground and by air for grouse, waterfowl, deer, pheasants, moose and beaver.

A system for monitoring deer wintering conditions was in operation during the winter months, in cooperation with other Department personnel.

Wildlife Research

Big Game -- Work on big game research continued to be directed toward the effects of winter weather on the survival and reproduction of deer and effects of forestry practices on deer numbers. Research was continued to determine the numbers and habits of coyotes in north central Minnesota. In addition, a timber wolf management plan was prepared.

Upland Game -- Research on pheasants showed that winter losses have severely reduced the number of birds available to hunters. Improved winter cover is a critical need. Research during the past six years on sharp-tailed grouse has shown that hunters take but a small percentage of the total birds. Experiments with an open and closed area show that bird numbers in both areas continue at about the same level.

Additional wild turkey stocking efforts were made in southeastern Minnesota. Hardy stock of the Eastern strain will be introduced during the next three years.

Waterfowl -- Research personnel continued to analyze the effects of hunting on resident duck populations and the advantages, if any, of protecting local breeders by setting aside scattered small wetlands as refuges.

Misc. Activities -- Game research emphasized census and survey projects for deer, pheasants, ducks and other wildlife. Increased hunting pressure and diminishing habitat necessitate greater emphasis on designing regulations and programs which maximize the recreational values of our wildlife.

"Operation Pheasant" completed its third year. It is designed to show the public the methods, cost and benefits of habitat improvement for pheasants on private land. Coordination of "Operation Pheasant" with the U.S. Department of Agriculture programs should tell us what the future holds for this important game bird.

Future Plans -- Emphasis will be on finding ways to increase the duck breeding population in Minnesota; expanding the deer habitat program; and raising more pheasants. In addition we will continue to look for new ways to expand the hunting base in Minnesota.

Harvest regulations will be continually modified to improve the quality of our various hunting seasons like we have done with the deer season.

We will become involved in the new Water Bank Program by giving technical assistance and general support at the field level.

Game census and surveys will be expanded to give us better information to set seasons and monitor the effects of our habitat programs.

We hope to expand our habitat programs for upland game, waterfowl and big game to meet the increasing demands of the public.

Section of Fisheries

Fish Production

From the hatcheries, rearing stations, rearing ponds, and rescue sites there was a total of 204,608,721 fish produced for stocking purposes. These were composed of species and sizes as follows:

<u>Species</u>	<u>Adults</u>	<u>Yearlings</u>	<u>Fingerlings</u>	<u>Fry</u>
Rainbow Trout	997	72,485	292,241	
Brown Trout	990	186,763	16,000	
Brook Trout	1,097	76,585	379,100	
Lake Trout	4,196	160,456	204,836	
Coho Salmon		162,000	46,000	
Muskellunge		19,262	1,050	40,000
Northern Pike	30,424	258,000	2,814,000	293,000
Walleye	10,707	66,532	5,472,000	194,000,000

Fish Stocking

Fish from the state production facilities with some augmentation from Federal facilities were stocked in 1395 lakes including 177 trout lakes. In addition 293 trout streams were stocked. A total of 206,013,108 fish were stocked by species and sizes as listed below.

<u>Species</u>	<u>Adults</u>	<u>Yearlings</u>	<u>Fingerlings</u>	<u>Fry</u>
Bluegill	3,525	3,805	116,000	
Catfish			127,000	
Crappie	58,000	244,000		
Largemouth Bass	2,380	580	382,000	21,000
Muskellunge		19,262	1,050	40,000
Northern Pike	30,424	258,000	2,814,000	293,000
Sunfish	27,517	125,000		
Walleye	10,707	66,532	5,472,000	194,000,000
Rainbow Trout	81	72,485	367,763	

Fish Stocking Con't

<u>Species</u>	<u>Adults</u>	<u>Yearlings</u>	<u>Fingerlings</u>	<u>Fry</u>
Brown Trout	95	186,763	16,000	
Brook Trout	162	76,585	379,100	
Lake Trout		385,456	204,836	
Coho Salmon		162,000	46,000	

Rough Fish Removal -- The rough fish control effort included seining operations on 358 lakes; the operation of 67 trapping sites; and the temporary installation of 34 shut-offs. The latter are intended to deny access of rough fish to spawning grounds and uninfected waters. The total production from these efforts amounted to more than 7 million pounds of fish, most of which were carp, bullheads, buffalo and sheepshead. Sucker removal for the benefit of walleyes continued on ten lakes in the northeastern counties -- 106,659 pounds of fish were removed on 4,839 acres of lake.

Habitat Improvement -- Fish barriers were completed at two sites which protect two lakes (with a combined area of 462 acres) from immigration of carp.

* Trout stream improvement was completed on 23 streams comprising 53 miles of trout water.

* A walleye spawning reef was completed on 6,800-acre Lake Osakis.

* Lake rehabilitation through chemical eradication of unwanted species and restocking with the desired game fish was completed on seven lakes with a total area of 454.4 acres. Six of these are stream trout lakes, and the remaining is Lake Rebecca in the Hennepin County park system.

* A rough fish trapping facility was completed in the channel between Mina and Brophy lakes in Douglas County.

* Two controlled northern pike spawning areas, including water control structures and pumps, were completed. One is a 50-acre site on Whiskey Creek, Crow Wing County, and the other a two-acre site on Turtle Lake, Becker County.

Capital Improvements

* Completed during 1971 were a new walleye hatchery at Tower; new Regional Headquarters at Hutchinson; and relocation of Area Headquarters building from Hutchinson to Montrose.

Surveys

* Stream surveys were completed on 36 trout streams totaling 305 miles.

* Lake surveys were completed on 251 lakes. Of these, 146 were initial surveys; 99 were resurveys to update information; six were confined to population checks.

* Prepared a report on the results of a pilot watershed project (Hawk Creek) by SCS on wildlife habitat (Spec. Pub. 90)

* A total of 222 permits were issued for bird banding, retention of hawks, taking of animals for scientific study; planting of aquatic plants; and miscellaneous permits.

* A total of 75 permits were issued for scientific collecting.

* The Section prepared and published 12 issues (169 pages) of the Game and Fish house organ: "The Latest Word".

* Fifteen administrative, technical and educational reports and reviews were prepared.

* About 500 letters and many informational items were mailed; especially on wild rice, water chemistry, pollution, permits, and eutrophication of waters.

Plans for new projects or activities in 1972 include:

* Water quality monitoring program on 20 to 30 representative fish lakes.

* Upon termination (June 30, 1972) of St. Croix Fish Study, periodic monitoring of fish populations below constructed and planned power plants (electro-fishing and netting).

* In cooperation with appropriate federal and other state agencies establish a program of monitoring fish and wildlife populations for chlorinated hydrocarbons, mercury and other toxic substances.

* Follow-up study of Silver Creek, Carlton County, to determine effect of effluents from the oil refinery at Wrenshall on trout habitat and trout populations.

SECTION OF TECHNICAL SERVICES

Accomplishments

Following are some of the accomplishments of the Section of Technical Services in 1971:

- * A total of 155 lakes were sounded and mapped.
- * More than 12000 anglers were interviewed in a statewide creel census on 80 lakes and 36 streams.
- * Annual progress report prepared on effect of NSP's Allen S. King power plant on fish and fishing in the St. Croix River.
- * Report summarizing number and acreage of various types of fish and game lakes in the St. Croix River was prepared.
- * Conducted field investigations on and reviewed 243 proposals from the Corps of Engineers, Soil Conservation Service, Highway Department, watershed districts, river basin commissions and other public agencies to determine the effects of their projects on fish and wildlife.
- * Reviewed 130 applications for Corps of Engineers, MPCA and other regulatory agency permits from individuals, corporations and municipalities, to alter beds of navigable waters and discharge sewage effluents into public waters; to determine their effects on fish and wildlife.
- * A total of 24 metropolitan area lakes were examined for water quality (especially chloride levels), following years of salting streets and highways.
- * Processed 674 applications for aquatic nuisance control permits. Issued 661 such permits.
- * Investigated 25 pollutional spills, and 20 fish kills.
- * Prepared annual aquatic nuisance control summary report.
- * The biology laboratory processed 666 animals and tissue samples on which some 1,600 pathological and other tests and examinations were performed.
- * Paper on fish pathology delivered at 18th Congress of International Limnological Society held in Leningrad, Russia.
- * The chemistry laboratory analyzed; 273 water samples for water quality and fertility (29 of these were pollution cases); 80 fish and wildlife tissue samples for chlorinated hydrocarbon (pesticide) residues; 260 fish and wildlife tissue samples for mercury residues.
- * Prepared a report on the probable effects on fish and wildlife of a proposed Corps of Engineers high dam on the Minnesota River at New Ulm (Special Publication 84).

Research

There were 19 active research projects dealing with fish management problems. The following studies were included:

- * To devise techniques for managing otherwise unproductive small lakes as walleye fishing lakes.

- * Develop guidelines for most effective use of yearling northern pike taken in winter rescue operations.

- * Assess current status of walleye populations in Cass-Andrusia-Wolf Lake complex.

- * Determine the effects of bullhead removal on populations of bullheads and associated species.

- * Develop electro-fishing gear for rapid assessment of young-of-year fishes.

- * Devise methods for more effective and efficient operation of walleye rearing ponds.

- * Develop brood stock selection techniques to maintain a superior, faster growing strain of rainbow trout brood stock.

- * Devise biological filter system to permit reuse of water in trout hatcheries.

Two studies were completed; one dealing with the evaluation of walleye fingerling stocking in northeastern Minnesota lakes; the other with development of electro-fishing gear and operational techniques for rapid assessment of young-of-year populations.

Three studies were administered, dealing with fisheries problems on Lake Superior and Lake of the Woods performed under contract by the University of Minnesota. Six investigational Reports on research findings were completed and published.

DIVISION OF LANDS & FORESTRY

Tree Nursery Production -- The Division of Lands & Forestry operates three forest tree nurseries to provide and make available tree planting stock for distribution to citizens of our state and to public agencies who desire to plant their lands for conservation purposes. These include reforestation and afforestation, establishment of windbreaks, woodlots, shelter belts, erosion control, soil conservation, water conservation and the provision of permanent food and cover for wildlife. In 1971 a total of 14,426,000 seedling trees produced at the nurseries were ordered and distributed throughout the state. Applications totaled 4,026. Since 1933, when the first trees were shipped out of the nurseries, 479,771,000 seedling trees have been produced and distributed. It is estimated that since distribution of planting stock from the nurseries was started, about 500,000 acres have been reforested or planted with State produced stock. Acreage planted 1971 totaled 14,500.

Seed Source -- One of the key factors influencing continued availability of planting stock on an annual basis is the availability of tree seed, especially of those species in the greatest demand. Since most seed is not produced annually, but rather at intervals of three to five years, it is necessary to gather seed in good years to tide the nurseries over during the lean years. In addition, seed quality is most important in order to produce planting stock of the highest quality. Genetic characteristics of trees are transmitted through their seed. It is important that we produce only such trees that will possess those characteristics deemed most important and highly desirable. The nurseries have undertaken the development of seed production areas wherein desirable species are being developed solely for the production of seed.

Norway pine, which is our State tree, and comprises 55 per cent of the total nursery production was one of the first species with which we started developing seed production areas. The two areas presently being developed contain trees of superior quality and form. Therefore, seed obtained should develop into quality trees. Additional areas are being established to produce seed for production of those species suitable for game cover and food. Plans are under way to develop seed production areas of black walnut, which in Minnesota's highly valued fine hardwood.

In addition to the development of seed production areas, work is underway to produce and develop rapid growing quality poplars. Out plantings of 20 separate hybrid poplars of genetically superior strains are being planted in the Memorial Hardwood Forest in cooperation with the University of Minnesota. Should these hybrids prove superior to out native poplar, they will be the strains of poplar produced and distributed from the State nurseries.

Forest Fires -- The 1971 fire season started out with a surge of fires, with 399 in the month of April and 570 in May. This was 90 per cent of the 1,073 fires for 1971. The comparatively dry spring resulted in 18 large (over 300 acres) fires. A fall fire season never really materialized due to the wet weather. The months of September, October, and November had the fewest total number of fires (24) on record for these fall months.

Railroad fire occurrence dropped again in 1971 as it did in 1970. We had 93 railroad fires which burned 989 acres and did \$3,840 damage. The 1971 railroad fires were responsible for 8 per cent of the total. The 20-year average is less than 10 per cent.

Small fire sizes (under ten acres) were below normal. They accounted for 68 per cent of the total. The average is more than 75 per cent.

The area protected in the past year remained the same as for previous years. All detection was by lookout towers. The use of aircraft, which was very little, was to supplement tower detection and assist in the apprehension of individuals setting fires. Our request to the State Legislature for funds to finance an aerial detection study was rejected.

The three major fire causes were the same as for the last few years: incendiary, debris burning, and machine use. Thirty-four per cent of the fires in 1971 were attributed to incendiary origin. Wild fires originating from debris burning accounted for 32 per cent of the fires.

More than 400 miles of fire line was constructed with Division equipment and fire fighters to control the 1,073 fires we had in 1971. Division personnel spent 4,484 man hours in direct action on wildfires. Of the 28,704 acres burned in 1971, only 6,076 acres was state land.

Damage attributed to wildfire totaled \$51,095. Of this total destroyed, \$16,136 was timber reproduction and \$5,419 was merchantable timber (119,000 board feet and 2,000 cords). Damage by forest fire to all physical improvements; including houses, barns, buildings, power lines, etc; amounted to \$11,930 in 1971. Personal property destroyed by forest fire, including vehicles, livestock, crops, machinery, and the like amounted to \$14,570 in 1971.

Division of Lands and Forestry employees and specialized fire fighters' equipment assisted the United States Forest Service in suppression of the "Little Sioux" fire in the Superior National Forest in May, 1971.

Environmental Protection Program -- Last fall the Division of Lands and Forestry placed additional emphasis on devising programs to protect the aesthetics, watershed, wildlife and recreational values found within Minnesota's forests.

Steps are being set up to insure that all Division programs, including prescribed burning, reforestation, timber sales, and recreational developments are being thoroughly analyzed for their environmental impact prior to their implementation. Environmental review of proposed projects involving natural resources is being accomplished through correspondence and direct contact with the public and private agencies and within the Department through formal group meetings and meetings such as P.E.R.T. (Planning and Environmental Review Team). These steps insure that projects do not adversely affect our environment, and help to coordinate the planning of various groups and agencies.

dealing with our natural resources. Seventy-eight projects were reviewed for their environmental impact within the first three months of 1972.

The Division began drafting formal environmental guidelines to be used on planned site disturbances including: timber harvest, site preparation and planting, timber stand improvement, construction, fire, special use permits, flooding and water impoundments, and game habitat improvement projects.

The purpose of these guidelines is to present considerations and specific suggestions which will lead to the improved management of our natural resources and help to prevent any detrimental environmental effects of planned site disturbances.

A new policy was scheduled to go into effect in late January, 1972, providing for an environmental impact statement on all Division activities in which the natural resources may be disturbed. The impact statements will accompany each timber sale, project proposal, new and renewed lease, prescribed burn proposal, site preparation, reforestation, and release projects. These statements are approved by a forest supervisor along with the proposed sale, lease, project, or other activity.

Forest pests; Insect & Disease Detection, Control -- The Division cooperates with the Minnesota Department of Agriculture, Division of Plant Industry, in detecting the presence of forest pests, in appraising their magnitude and trends and in applying control measures where economically and biologically desirable.

A total of 2,115 man-hours was expended by Division personnel in 1971 on insect and disease detection and control. A total of 1,275 man-hours were spent advising private land owners on insect or disease problems.

In 1971, a total of 390 reports of insect or disease problems and 316 samples were collected and referred to the Division of Plant Industry for interpretation and recommendations.

Control procedures, if warranted, are recommended to private land owners and investigated on State levels and in the State tree nurseries.

Forest Recreation -- More than 500 miles of marked snowmobile trails were added to the State Forest system during 1971, bringing the total of such trails to more than 1,500 miles. The Division developed and published individual maps for 48 trails; and developed and published brochures on nine State Forests.

The recreational use of Division of Lands and Forestry facilities for camping, picnicking, canoeing, hiking, and snowmobiling has been increasing. In 1961 a total of 47,700 visitor days were spent on these activities. In 1965 the figure had risen to 59,500. In 1971, a total of 473,000 visitor days was recorded, an increase of 127,000 over 1970.

Of the 473,000 visitor days recorded in 1971, a total of 150,000 involved snowmobile recreation; 4,000 canoeing; 3,000 hiking; and

3,100 miscellaneous activity. Camping areas recorded 222,830 camper days; and day-use areas had 90,070 visitor days.

Marketing & Utilization -- In order to promote better, more complete utilization of Minnesota's forest resources, the Division of Lands and Forestry disseminated forest resource information and technical advice to 2,900 forest products operators and 107 wood-using industries. Marketing advice and information about wood products was given to 3,800 individuals. This information included harvesting of timber, treating posts and lumber, location of forest products markets, maple syrup production, and many other related activities. Summarizations of wood resources available to various industries and proposed industries were furnished to six in-state concerns and one to Canada.

Private Land Forest Management -- Forest management assistance was provided to 3,750 landowners with 85,000 acres of forest land. In addition, under the Rural Environmental Assistance Program forestry assistance was given to 800 landowners. This included tree planting and timber stand improvement practices where the federal government cost-shared the practice with the landowner.

We now have 1,384 established tree farms comprising 801,000 acres in Minnesota. Forestry personnel have examined and prepared plans for the major portion of these woodlands.

School Forests -- The Division established three new school forests in 1971. They are the Inver Grove, Roseau and Sebeka school forests. The forests provide additional classrooms for outdoor environmental education.

Three other school forests were initiated in 1971 for establishment in 1972. Included are the Askov, Hill City and Mounds View School forests. It is encouraging that the large urban school districts are establishing these environmental education centers. There are now 51 school forests well distributed throughout Minnesota.

Demonstration Woodlands -- The Trout Valley Demonstration Woodland, comprising 560 acres of woodland in Wabasha and Winona counties was developed in 1971. The purpose is to show private landowners and others how to manage their woodland resources.

There are now ten demonstration woodlands developed for public education. Annual field days are held in the demonstration woodlands in cooperation with the Extension Service. Two were held in 1971.

Land Use Classification Phase II -- The Department of Natural Resources, through the Division of Lands and Forestry, activated a program of determining permanent natural resource management areas. The determination of these areas is based upon the classification of more than 8 million acres of state and county lands and the projected needs of the future.

Leasing of State Owned Lakeshore -- To alert and enlighten the public on the adversities and benefits of leasing of state owned lakeshore for cabin sites -- a series of ten public meetings were held. More than 1,000 citizens attended. Many proposed changes.

Public Land Use -- The Division sold more than 900 acres of Trust Fund Lands and classified and approved the sale of 1,840 acres of Consolidated Conservation Area Land for private wild rice paddy development.

The Division leases 920 acres of state land for the development of private wild rice paddies.

Hibbing Wildlife Habitat Project -- A pilot project was initiated in the Hibbing administrative area to provide total forest resource management. The technique identifies key resources in a series of transparent overlays, which enables the DNR to visualize critical resource distribution and prepare a complete and coordinated management plan.

Local Auction Sale -- The Local Auction Sale was added to the Department timber harvesting program. The purpose was to provide a service to timber operators who have expanded beyond the scope of the present informal sale. The terms of the sale are similar to the established auction sale. However, it is a short term sale with a limited stumpage value. In 1971 the value of timber sold under this type of sale exceeded \$70,000.

Leases to Individuals & Corporations -- The Division has more than 5,000 leases to private individuals and corporations. These leases are, in many cases, an assist to the local economy. Included are 1,950 for lakeshore cabin sites; 1,500 pipeline and polelines; 400 commercial; 300 agriculture; 200 hunting cabin sites; 100 gravel pits. One of the newest types of leases is for wild rice growing.

DIVISION OF PARKS AND RECREATION

State Park Activity - 1971

In the 36-year period since its establishment, the Minnesota State Park system has grown from the original 32 major parks comprising 39,368 acres and an estimated 600,000 visitors annually to the present 61 major parks and 33 waysides and monuments with attendance in 1971 of 6,918,023. The 1971 attendance figure represented an increase of 948,465 over 1970.

Split Rock Lighthouse State Park -- The historic Split Rock Lighthouse on the North Shore of Lake Superior, constructed and put into operation in 1910 and closed down by the U. S. Coast Guard in 1969 was dedicated as a State Park on May 2, 1971 when the deed was accepted by the State. The park comprises 147.5 acres of the 996 authorized by the Statutory Boundary. Visitor attendance during the summer of 1971 averaged 2,400 daily, with total attendance of 269,833 for the year. Visitors came from all 50 states and 60 foreign countries.

Forestville Store -- For the first time in 61 years, the old Meighan General Store at Forestville was open to the public--during the summer of 1971 as a historic feature of the Forestville State Park west of Preston. Much of the stock in the store remained intact after the 61-year lapse.

Nine Additional Parks for Winter Recreation -- The 1971 Legislature authorized full time control of nine state parks that had previously been manned only during the summer season. This enabled us to provide for snowmobile use and other winter activity at the Big Stone Lake, Upper Sioux Agency, Lac qui Parle, Forestville, Hayes Lake, Sakatah, Maplewood, Crow Wing, and Split Rock Lighthouse state parks.

Chief of Visitor Services -- The 1971 Legislature also authorized a position of Chief of Visitor Services for the Division of Parks and Recreation. This will make possible development of interpretive programs with the University of Minnesota Museum of Natural History in the field of biology; with the Minnesota Historical Society in the field of recorded history; and with the State Geologist and Archeologist in those fields.

State Park Land Acquisition Program

The State Park System as of January 1, 1971 was comprised of 86 park units of all designations, with a total statutory area of 196,948.70 acres. At this same date, the State of Minnesota owned or had a vested interest in 154,714.64 acres in all of the established parks but one.

Of particular significance in calendar 1971 was a gift of 140 acres from the Federal Government including the old parade grounds and polo field within Fort Snelling. (Mrs. Richard Nixon and Mrs. Wendell R. Anderson participated in the ceremonies at which this land was turned over to the State.)

In 1971 there were 1,871.14 acres acquired for the purposes of the state parks at a cost of \$572,515.00.

As of January 1, 1971, there were also established two long distance recreational trails: Casey Jones Trail, and the Minnesota Valley Trail. The Casey Jones Trail had been completed for a distance of approximately 12 miles, or one-third of the total length, at a cost of \$9,000. In 1971 an additional 1½ miles of trail was acquired at a cost of \$24,000. This project had about 24½ miles, primarily in the Beaver Creek segment, yet to be worked out. As of January 1, 1972 there were two additional tracts under option to purchase.

The Minnesota Valley Trail was established in the 1969 Legislature session and involved acquisition of 78 miles of land right-of-way and six sizable waysides, accesses and control and rest areas.

Estimated trail right-of-way land to be acquired: 760 acres in 1971

Estimated wayside areas to be acquired: 5446 acres in 1971

Land acquired for trailway prior to 1971: None

Land acquired for trailway during 1971: 1.9 acres, \$2,000

Land acquired for wayside prior to 1971: 424 acres, \$65,850

Land acquired for wayside during 1971: 324 acres, \$98,010

As of December 31, 1971 there were, in addition to complete land transactions in the Minnesota Valley Trail project, negotiations underway to complete trail purchase of 28.67 acres of wayside land at a price of \$25,800, and 200 acres of trail lands at a price of \$72,600.

The Scientific and Natural Areas Preservation Program for unique features on lands outside of the Department's jurisdiction was implemented during 1971. The first land acquired was the Rush Lake Heron Rookery in Chisago County. This 20-acre island was in imminent danger of destruction for modern lake cabin development; the cost of this land was \$7,100. Negotiations for a second area known as the Purvis Lake natural area in St. Louis County were virtually completed and The Nature Conservancy furnished a grant of \$11,714 to consummate the purchase.

A third unique natural feature area known as Salt Lake in Lac Qui Parle County was negotiated and option obtained for 391 acres at a cost of \$55,850. This is the only salt water lake in Minnesota and harbors wildlife not found elsewhere in the State.

New Park and Recreation Areas:

* Moose Lake State Recreation Area established by the 1971 Legislature and in operation the same year for trail use on a preliminary basis.

* O. L. Kipp - redesignated from another area - approximately 1,000 acres in ownership. Long range development planning underway.

* Scientific and Natural Areas - reorganization of the Commissioner's Advisory Committee on Scientific and Natural Areas to functional sub-committees. 1) Evaluation and criteria; 2) Management; and 3) Land and Acquisition.

* Acquisition of Rush Lake Heron Rookery.

* Additional activity on a number of other proposed areas.

Completion of the 1969-1971 development program including three significant visitor's centers at Big Stone, Mille Lacs Kathio and Upper Sioux Agency.

Continued coordination with: The two national forests and the National Park Service with particular reference to Voyageurs National Park; The Minnesota State Historical Society; The Minnesota State Highway Department and county highway departments with particular reference to entrance roads into state parks.

Snowmobiling in State Parks -- With snowmobile registrations passing the 232,000 mark (81,000 during the calendar year) usage of state parks trails in 1971 rose to 287,000 visitor days, a 48 per cent increase over 1970. To accomodate the soaring numbers of snowmobilers, the following accomplishments were recorded during 1971: A total of 380 miles of trails were added to the state parks system of 600 miles of marked snowmobile trails.

Eight new trail areas were opened; 8 new trails shelters and 6 parking areas provided; 8,000 trail signs were acquired for installation.

New Land Trails in State Parks -- Five new trails were authorized by the 1971 Legislature:

* Glacial Lakes Trail, 54 miles; working with local group on establishment of initial snowmobile trail.

* Douglas Trail, 15 miles; work underway with Railroad on acquisition.

* Sakatah Singing Hills Trail, 42 miles; work underway on acquisition and with Highways on trails and freeway bridging and intersections.

* Root River Trail, 50 miles; contingent on Railroad abandonment.

* Countryview Bicycle Trail, 19 miles; working with local groups on alignment planning and preparations for ordering signs and materials.

* Also working with highway Department on design concepts of New Highway Department Bicycle Trail (I-94).

Continued Trail Work -- General -- Design work with Highways on bridge crossings and trail alignments; continued snowmobile trail work, improvement of nature trails and five Naturalist Programs; opened George Crosby-Manitou State Park, completely backpack in area, and continued trail development; established a new trail center in Sibley State Park; continued cooperative planning on Federal North Country Trail, 280 miles.

Minnesota Valley Trail -- Land acquisition included in general park program. Appointed a ranger to the valley, housed in Lawrence Wayside. Completed 10 miles of trail for snowmobile use. Boundaries of all land owned were signed.

St. Croix River -- Working with Interim Management Commission on design and policy objectives.

Working Capital Fund

The Working Capital Fund, comprised of income from special privileges and services available to state park guests, produced a 1971 gross of \$1,058,148 versus \$932,085 in 1970, an increase of 13.5 per cent. This gross income, in excess of \$50,000, reverts to General Revenue at the close of the fiscal year.

The major portion of the income to the Working Capital Fund results from seven park services, a comparative breakdown of which follows:

<u>Service</u>	<u>1971 Income</u>	<u>1970 Income</u>	<u>Increase or Decrease</u>	<u>Percentage Change</u>
Camping	\$375,466	\$340,058	+ \$35,408	+ 10.4%
Refectory	\$464,718	\$401,974	+ \$62,744	+ 15.6%
Boats	\$ 24,384	\$ 20,201	+ \$ 4,183	+ 20.7%
Group Camps	\$ 35,848	\$ 21,162	+ \$14,685	+ 70. %
Cabins	\$ 58,192	\$ 53,957	+ \$ 4,235	+ 8 %
Woods	\$ 22,039	\$ 17,556	+ \$ 4,483	+ 26 %
Ice	\$ 7,952	\$ 9,922	- \$ 1,970	- 19.9%

Camping -- Family camping in 53 State Parks produced the above income. The 1971 income figure converts to 187,733 over-night camping parties or an estimated 807,251 campers.

Refectories -- The refectory income is derived from the food services and the sale of gifts and souvenirs in 26 areas. The 1971 increases in sales resulted in part from the addition of the Split Rock Lighthouse operation which added an income of \$30,964; the balance represents increased sales.

Boats -- Boats and canoes are available for rental in 14 State Parks.

Group Camps -- Eight of our State Parks have group camps which are used primarily by publicly supported youth groups. These camps consist of barrack sleeping accommodations, mess hall, craft building, infirmary, sanitation buildings and a private recreation area. During 1971 these camps were used by 55 organizations.

Cabins -- The income reported under cabins is primarily from room and cabin rentals at Douglas Lodge in Itasca State Park, Whitewater State Park has 3 rental cabins which produced an income of \$2,275 in 1971.

Wood and Ice -- Wood was sold in 47 parks during 1971 and 12 parks were serviced by an ice concessionaire.

Engineered Development Projects

During the calendar year of 1971 the Division of Parks and Recreation initiated 136 development projects requiring engineering services. Six of these were study projects by consultants and 88 of the projects included construction. These construction projects were budgeted for \$1,480,000.

At the end of the year 26 projects initiated prior to 1971 were underway. One was a consultant study and 16 included construction budgeted for \$1,130,000. Total construction including projects initiated in 1971 is \$2,610,000.

The emphasis was on sewage disposal system. We initiated, and have underway engineering design, or construction work on sewer projects totalling \$1,175,000, and sanitation buildings totalling \$ 550,000.

Following is a tabulation showing current construction projects requiring engineering services and the amount budgeted for each:

a. Sewer projects	\$ 1,175,000
b. Sanitation buildings	550,000
c. Roads & parking	170,000
d. Water, elec., & other utilities.	65,000
e. Office, shop warehouse, Interpretive Center, & other buildings	450,000
f. Swimming beaches	110,000
g. Misc.	90,000
	<hr/>
	\$2,610,000
h. Consultants studies	40,000
	<hr/>
	\$2,650,000

WATERS, SOILS AND MINERALS

Section of Waters

Studies Initiated or Completed

Flood Plain Management -- To define flood plains in order to provide base for local Flood Plain Ordinances, the following studies were initiated or completed during 1971:

- * Sixteen studies were initiated involving 35 communities and six counties, six studies to be performed primarily by the U.S. Corps of Engineers; four to be done by the United States Geological Survey (USGS) with assistance from the Minnesota and Wisconsin Departments of Natural Resources on one study; one study to be accomplished by the U. S. Soil Conservation Service (SCS); four to be entirely performed by the Department of Natural Resources (DNR).

- * Seven studies were completed involving four municipalities and seven counties; one study was completed by the U.S. Corps of Engineers; one done by the SCS; two by the USGS; and three studies were completed by DNR, one in cooperation with the North Dakota Water Commission.

- * There were three requests for technical assistance in defining flood plain areas involving three communities and one county. No action has yet been taken on these requests.

- * Land use control measures: Sixteen communities and three counties adopted some form of land use controls for flood plain areas after prior review and approval by Section personnel.

- * Information and assistance: Five reports pertaining to Flood Plain Management; two flood analysis reports for major rivers, and a sample ordinance were prepared.

- * Meetings were held with officials of 46 localities (communities and counties) to discuss Flood Plain Management programs and to provide assistance.

- * An additional 16 communities and three counties became eligible to participate in National Flood Insurance through assistance from Section personnel.

Shoreland Management

To classify lakes and review local land use control ordinances, the following were among accomplishments in 1971.

- * Meetings were held with officials of 87 counties to discuss shoreland management programs and to provide assistance.

- * The Department classifications of shorelands of lakes and streams in 53 counties were reviewed, revised or adopted after discussion with the counties.

- * Fifty counties prepared shoreland management ordinances which

were reviewed during 1971. Twenty of the ordinances were approved as to compliances with the state shoreland management rules and regulations.

* Waters Section personnel participated in 14 seminars on Shoreland Management involving the University of Minnesota Agricultural Extension Service.

Other Divisions; State Agencies Investigations and Studies

* Twenty-five studies involving availability of groundwater for parks, forest campgrounds, game refuges or highway rest areas were completed during 1971.

* Three informational studies initiated but not completed during the year, involved a comprehensive report on underground gas storage in Minnesota and a report on surface water-ground water relationships for several problem lakes.

Status of Permit Processing

Permit Applications -- A total 568 permits were issued during 1971 for changes in the course, current or cross-section of public waters, utility crossings or appropriation and use of water. In addition, there were 367 pending applications from 1970 which required further action making a total of 1,846 permit applications requiring action during the year.

* A total of 568 permits were issued during 1971 for changes in the course, current or cross-section of public waters. At the end of 1971 an additional 423 permit applications still required further processing.

* A total 534 permits were issued during 1971 for the appropriation and use of surface and underground waters. At the end of the year an additional 49 permits still required processing.

* A total of 107 permits for utility crossings over or under public waters were issued and at the end of the year 48 permit applications still required further processing.

* In addition to the aforementioned permit actions, a total of 117 permit applications were either not required, denied or withdrawn during 1971.

Major Public Hearings Conducted

* Application of U. S. Steel Corp, for permit to remove water from Little Lake Mesaba for mining purposes. Work in beds of public waters.

* Pickands Mather: water supply for taconite plant near Hibbing. Water appropriation.

* Northwestern Public Service Company, Montana-Dakota Utilities and Ottertail Power Company. Power Plant-Big Stone Lake-Water appropriation.

* Paul Beckman: Sugar Lake, Work in beds of public waters.

* M.S. 1969, Chap. 105.44: A.J. Bradshaw, Eng. Judicial Ditch No.11, Blue Earth and Waseca Counties. Work in beds of public waters.

* N.S.P. Prairie Island, Water appropriation and work in beds of Mississippi River.

Projects Initiated or Completed

* The Lake Level Ground Water Observation Well program initiated by the Waters Section several years ago was expanded and present data indicates this will provide valuable assistance in evaluating future lake level problems.

* Underground Natural Gas. A contract was negotiated with a renowned underground gas storage expert to provide a new method of accurately evaluating the position of natural gas stored in underground formations. This information will assure the most careful possible protection of the public in these types of projects.

Follow Up on Legislature Matters

New Legislation prepared by the Waters Section included bills for new regulations on dam abandonment; water users fees; a revised drainage law; surface water use management; additions to shoreland management laws to provide for extension into incorporated areas; revising portions of Chapter 105; incorporating the Soil and Water Conservation Commission and Water Resources Board as part of the DNR; and Stream channel Improvement.

In addition to legislation, a series of special reports was prepared for legislators including reports on: county surface and ground water hydrologic conditions; pollution problems of a lake in a proposed landfill area; and ground water potential for irrigation in several counties.

New Procedures Adopted

Regulation of Work in Beds of Public Waters-New policies were developed for integrating the Department's program for work in beds of public waters, and shoreland management. Discussions were held with Highway Department personnel regarding increased emphasis of environmental protection and preservation of natural areas.

Development Projects: Drainage of Agricultural Lands: A program was initiated for new emphasis on environmental factors involved in drainage matters and the Director's Reports on Drainage Projects have changed to reflect the need for better conservation of water and other environmental concerns.

Guidelines--Water Surface Use Management: Preparatory work started on outline of guidelines and criteria for implementation of a water surface use management program enacted by the 1971 Legislature. The program involves establishment of controls over the uses of the water surface of lakes and streams by watercraft.

Publications

The following publications were completed or in preparation during 1971:

- * Three shoreland management technical informational reports on the state shoreland management program.

- * A popular, general information report: "A Guide to Buying Lakeshore".

- * Five technical reports on specific hydrologic aspects of flood plain studies.

- * Three publications on sample local ordinances concerning specific aspects of land use controls.

- * Two technical reports on regional flood analysis of a major river in Minnesota.

The Section also prepared many other short, unpublished reports on local water problems involving ground water and surface water availability, distribution, use and quality.

Anticipated New Projects; Programs; 1972

The following are anticipated new projects or programs during calendar year 1972.

- * Promulgation of Guidelines for Rules and Regulations of Water Surface Use Management.

- * Promulgation of Guidelines for Rules and Regulations for work in beds of public waters and appropriation and use of water.

- * Completion of a proposed statewide water resources management plan and program.

- * Implementation of water surface use management for several lakes.

- * Development of Guidelines for evaluating environmental effects of development projects.

- * Integration of Waters Section regulatory programs including permits, shoreland, flood plain and water surface use to obtain maximum correlation of objectives

- * Establishment of procedural guidelines and training programs for Regional Hydrologists.

Section of Minerals

State-Owned Mineral and Royalty Income Production

* A total of 10,846,000 tons of royalty iron ore was produced from seven state-owned properties during 1971. Of this tonnage, a total of 9,874,000 was crude taconite, and 972,000 tons comprised natural iron ores.

* Rental and royalty income in 1971 from state-owned mineral properties amounted to \$2,579,822. Of this amount \$2,356,229 was derived from iron ore and taconite properties and \$223,593 from rental on copper-nickel exploration leases.

Of the \$2,579,822 total, \$703,900 was credited to the Permanent School Trust Fund; and \$583,444 was returned to the counties involved for distribution to the local taxing districts.

Copper-Nickel Exploration

* Three state copper-nickel leases were negotiated by the Department and approved by the State Executive Council in 1971. These three leases covered 800 acres in Roseau and Lake of the Woods counties.

* As the result of a public lease sale in December, 1971, a total of 71 state copper-nickel leases, covering approximately 35,000 acres, were awarded by the State Executive Council to five exploration companies.

* In addition to airborne and group geophysical exploration, more than 47,000 feet of exploration drilling was conducted on state leases during 1971.

Environmental Impact Studies -- Base Metal Mining

Minnesota is on the threshold of a new mining industry -- that of copper, nickel, and other associated metal. Such an industry could have a substantial impact on the economy and on the natural environment of the state, depending upon the mining and processing methods utilized, and the individual circumstances associated with a specific operation.

In order to meet this challenge the Department completed the preliminary draft of a report entitled "Possible Environmental Impact of Base Metal Mining in Minnesota". The purpose of this report is to review and summarize available information on the mining and processing of base metals, such as copper and nickel, in order to provide a guide for planning and evaluating the impact of future mining operations in Minnesota. The report emphasizes advantages, disadvantages, and possible utilization of particular systems and contains information on probable major environmental factors to be considered in base metal operations. Background information is included in the appendices, and a bibliography is provided to assist those wishing to study the subject further. The preliminary draft completed the latter part of 1971 has been widely circulated for comments and will be published by mid-1972.

It is hoped that this study will be the first of a series of reports that will enable the public and the various governmental agencies to better evaluate the consequences of future proposed mining operations within the state.

Pilot Study on Mineral Reservations

A pilot study was started by the Department in conjunction with the Land Exchange Review Board and the University of Minnesota to assess the feasibility of producing a Mineral Resource sub-program to the State Land Use Mapping program. Its goal is to produce computer-oriented maps and tabulations showing available geologic data; mineral ownership characteristics; and the patterns of mineral resources development for selected townships.

The major effort under the program during 1971 involved a pilot study of determining mineral ownerships. The study showed extremely complex mineral ownerships with undivided factors commonly in the 10,000's and in a few cases with denominators as large as 64,800,000.

The Department continued to make a major effort in seeking a solution to the problem of severed mineral interests in Minnesota.

NEW LEGISLATION

The following is a check list of natural resources legislation passed during the 1971 Legislative Session and signed into law by Governor Wendell Anderson.

- Chapter 3 Extra Session--Appropriation Act
- Chapter 10 Prohibiting Trespass on Institutional Grounds.
- Chapter 48 Relating to Archaeology.
- Chapter 76 Fishing Privileges for Inmates of Mental or Correctional Institutions.
- Chapter 113 Two Assistant Commissioners for the Department of Natural Resources.
- Chapter 119 Deficiency Appropriation Act, Fiscal Year Ending June 30, 1971
- Chapter 121 Toilet Facilities Along North Shore of Lake Superior During Smelt Season.
- Chapter 139 Sale of Otter Tail County Lands.
- Chapter 156 Veterans Fishing License.
- Chapter 159 McCarthy Beach State Park.
- Chapter 175 Abolishes North Dakota, South Dakota and Minnesota Tri-state Waters Commission.
- Chapter 216 Acquisition of Land for Spawning purposes.
- Chapter 242 Taking of Fish in Streams Flowing Into Lake Superior.
- Chapter 273 Authorizes Disposal of Land in Hennepin County.
- Chapter 273 Authorizes Commissioner to Transfer Land and Certain Dam Rights.
- Chapter 277 Relating to State Parks (No permits--Open House Day).
- Chapter 279 Conveyance of a Certain Easement Over Lands in Carver County.
- Chapter 280 Establishment of Moose Lake State Recreation Area.
- Chapter 299 Conveyance of Easement to the City of Mankato.
- Chapter 301 Transfer of Land in Nicollet County to Independent School District No. 508.
- Chapter 337 Reinstatement of Certain Certificates of Sale.
- Chapter 354 Removing Bears From the Unprotected List.

- Chapter 355 Creation of a Lake Conservation District for White Bear Lake.
- Chapter 368 Conveyance of Land to Rice County Day Activity Center.
- Chapter 376 Relating to Taxation. (Reimbursement of Taxes on Property Acquired by the State or a Political Subdivision.)
- Chapter 380 Great Lakes Basin Compact.
- Chapter 411 Authorizes Conveyance of Certain Lands in Wabasha County.
- Chapter 413 Withdrawal and Sale of Land from Paul Bunyan State Forest.
- Chapter 427 Provides for Licensing of Well Drillers.
- Chapter 449 Pesticides.
- Chapter 453 Use of Handguns for Taking Wild Animals.
- Chapter 460 Ditch Liens.
- Chapter 478 Creation of Sanitary Sewer Board for the Lower St. Louis River Basin.
- Chapter 501 Conveyance of Lands to the United States for the Big Stone Lake-Whetstone River Project.
- Chapter 562 Payments to Counties in Lieu of Taxes.
- Chapter 577 Snowmobile Registration Act.
- Chapter 577 Amends Language in Laws 1971, Chapter 577, Sect.2 Relative to Snowmobile Registration.
- Chapter 586 Drainage Systems.
- Chapter 587 Relating to Public Access to Lakes.
- Chapter 595 Eminent Domain Proceedings.
- Chapter 596 Computation of Unrefunded Tax Paid on Gasoline for Motorboat Purposes.
- Chapter 603 Relating to State Parks and Monuments.
- Chapter 607 Authorizes Moose Hunting.
- Chapter 612 Deer Hunter Limitations.
- Chapter 613 Regulating Taking of Deer.
- Chapter 629 Drainage Systems.
- Chapter 636 Watercraft Safety Act.

- Chapter 654 Relates to Lower St. Louis Basin Sanitary District.
- Chapter 658 Limits Tax Judgement Sales Under a State Assignment Certificate
- Chapter 662 Related to Watersheds.
- Chapter 698 Authorizes the Sale of Certain Lands in St. Louis County.
- Chapter 705 Establishment of the Southern Minnesota Rivers Basin Commission.
- Chapter 708 Relating to Fish Houses.
- Chapter 709 Relating to Historic Sites.
- Chapter 728 Related to Public Drainage Systems.
- Chapter 732 Land Exchange Review Board.
- Chapter 734 Disposal and Reuse of Abandoned Vehicles.
- Chapter 785 Relating to Public Drainage Systems.
- Chapter 786 Predator Control Program.
- Chapter 815 Providing for Approval of Land Conveyancy Instruments by Carver County Zoning and Platting Officer.
- Chapter 822 Relating to Appropriations (To Historical Society).
- Chapter 825 Protection of Endangered Species.
- Chapter 828 Relating to Water Supply Systems and Wastewater Treatment Facilities.
- Chapter 835 Minnesota State Deed Tax.
- Chapter 840 Taking of Game With Snowmobiles or All Terrain Vehicles.
- Chapter 852 Voyageurs National Park.
- Chapter 857 Authorizing Reconstruction of Willow River Dam.
- Chapter 859 State Parks, Trails and Natural Areas.
- Chapter 861 Regulating the Use of Marine Toilets.
- Chapter 864 Environmental Information Section in the Minneapolis Library.
- Chapter 867 Surcharge on Small Game Licenses.
- Chapter 884 Requires that Any Corporation, Person or Association Engaged in Transporting Crude Petroleum, Oil or Related Products As A Common Carrier May Not Exercise the Power of Eminent Domain Unless the Plans of the Project Shall

Have First Been Submitted To And Approved by the
Commissioner of Natural Resources.

- Chapter 896 Relating to Pollution Control.
- Chapter 912 Contingent Appropriation for the Game and Fish Fund.
- Chapter 912 Authorizes \$5000,000 As a Contingent Appropriation to be
Also Used Directly for Habitat Development for Fish and
wildlife.
- Chapter 916 Relating to Public Water and Sewer Improvements.
- Chapter 929 Maintenance Services for Recreation Areas.
- Chapter 939 Relating to Modification of Water Control Structures
in Kanabec County.
- Chapter 945 Game & Fish Licenses
- Chapter 946 Limiting Liability for Public Use of Private Lands for
Recreational Purposes.
- Chapter 952 Minnesota Environmental Rights Act.
- Chapter 953 Water Pollution Control.

