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Annual Report

Fiscal Year

1991

**IOWA DEPARTMENT
OF NATURAL RESOURCES**

Larry J. Wilson, Director



Iowa Department of Natural Resources
Wallace State Office Building
Des Moines, Iowa 50319-0034

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Natural Resource Commission

Mark Doll, Council Bluffs (Starting
May 1991)

John D. Field, Hamburg (Through
April 1991)

Thurman Gaskill, Corwith

Marian Kieffer, Bellevue

Barbara Nelson, Ruthven

(Mrs.) Marion J. Patterson, Cedar Rapids

Richard C. Young, Waterloo

Environmental Protection Commission

Mike Earley, Waterloo

William Ehm, Creston

Richard Hartsuck, Des Moines

Rozanne King, Mondamin

Charlotte Mohr, Eldridge

Margaret M. Prahl, Sioux City

Gary C. Priebe, Algona

Nancylee A. Siebenmann, Cedar Rapids

Clark A. Yeager, Ottumwa

State Preserves Advisory Board

(Mrs.) Dorothy Baringer, Woodburn

Paul A. Christiansen, Mt. Vernon

Robert Kindwall, LeMars

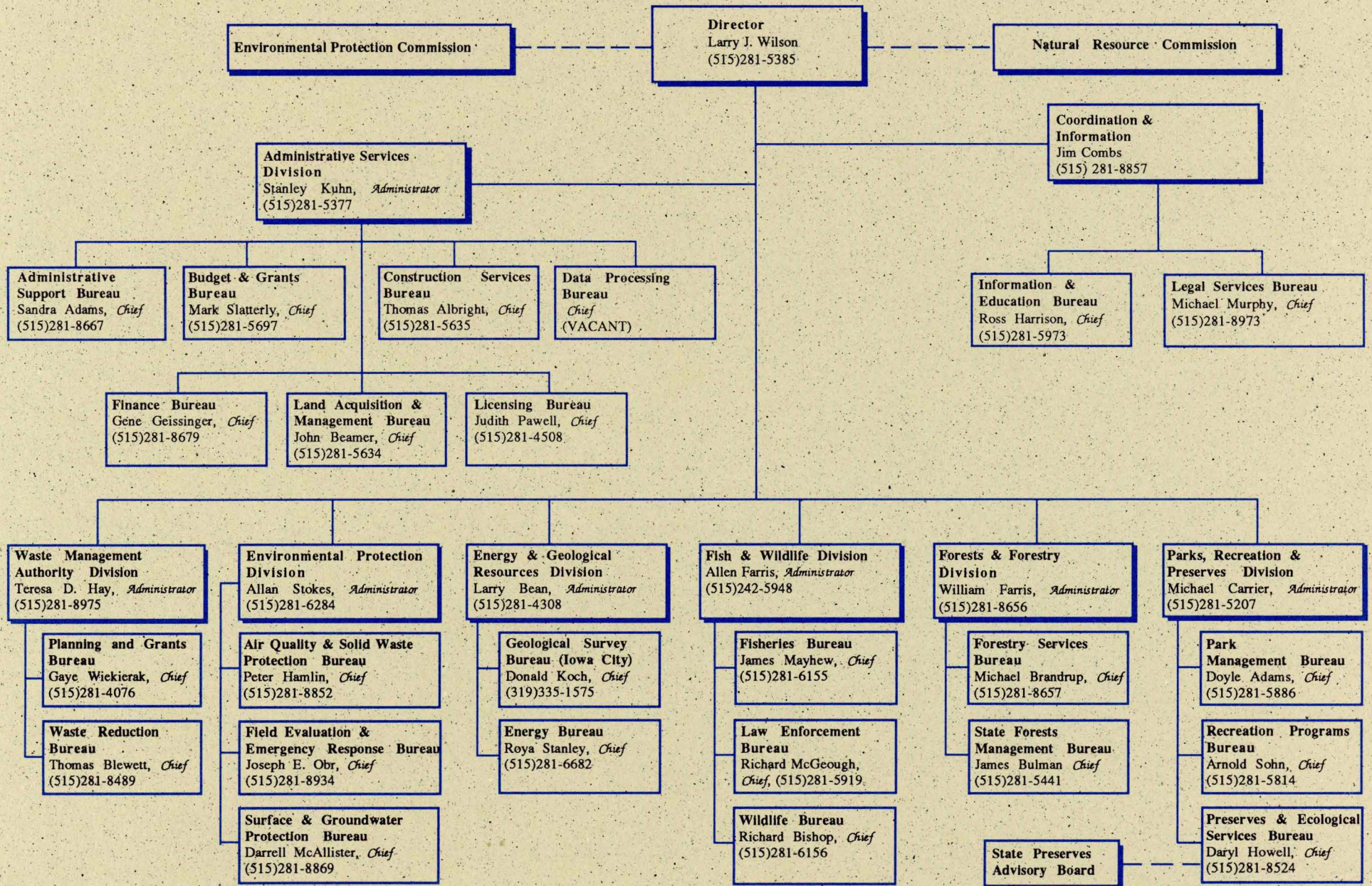
Ronald Kuntz, Des Moines

Martha Maxon, Waterloo

Shirley Schermer, Iowa City (Starting March 1991)

Larry J. Wilson, Des Moines





DIRECTOR'S MESSAGE

During this year the Resource Enhancement and Protection (REAP) program accomplished several projects in all of its elements. REAP Committees in all 99 counties were organized and began to work on their respective 5-year plans. The 17 regional assemblies and the first Congress confirmed that REAP is a well-designed program and operating well in its first year.

The department began a quarterly newsletter directed towards owners and operators of underground storage tanks (USTs). The publication is designed to help its readers understand and meet the regulatory requirements of underground storage tanks as well as to answer general questions and explain terms relating to USTs.

In 1991 the conflict in the Persian Gulf underscored Iowa's dependence on imported energy. Iowa is making progress towards reducing its dependence by increasing production of energy in the state and by increasing the efficiency with which energy is used. Ethanol production capability is on the upswing in Iowa, increasing from 271 million gallons per year in 1990 to 340 million gallons per year in 1992. Iowa public buildings progressed toward becoming energy efficient. Through 1991, \$97 million out of an estimated \$300 million of needed energy improvements have been identified. About 10 percent of those improvements or \$32 million worth have been installed.

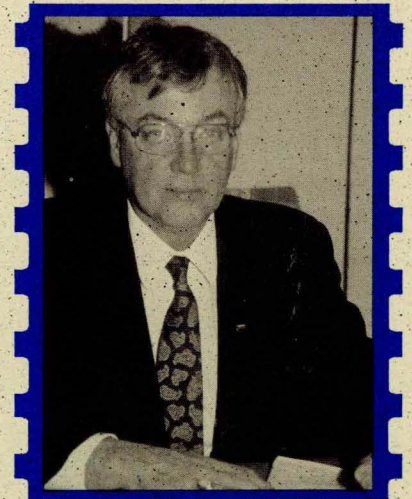
The 21st anniversary of Earth Day occurred this year and the *Trees for Kids* program was continued. In cooperation with the Iowa Bankers Association, the Iowa Nurserymen's Association, Iowa Telephone Pioneers and the DNR, schools were provided with educational packets for classroom use and were given trees, free of charge, to plant. This again resulted in students and teachers participating in the planting of trees and shrubs across Iowa. The state gained the benefits of the plantings and students and teachers gained an increased awareness of the value of trees in our environment and the important role each individual can play in making the state a better place to live.

Residents and nonresidents continued to take advantage of Iowa's hunting and fishing opportunities. Approximately 646,000 licensed resident anglers engaged in 13.3 million fishing days and 125,00 licensed nonresidents counted 1.2 million days of fishing activity. More than 258,00 resident hunters enjoyed 4.8 million days of hunting activity, while 58,600 nonresident hunters tallied 318,00 hunting days. For the second year nonresidents were allowed to hunt deer and turkey in Iowa. The Nongame Program continued its efforts to enhance enjoyment of wildlife for all Iowans and approximately 1.9 million residents enjoyed nonconsumptive wildlife activities.

New year-round cabins were constructed and opened at Backbone State Park and the grand reopening of Pikes Peak State Park and the beautiful overlook, highlighted the enhancement of many of the park's best features through the use of REAP funds.

The Waste Reduction Assistance Program (WRAP) continued to address the needs of Iowa's larger businesses and industries to reduce the amount of waste they generate through reducing, reusing and recycling the wastes. WRAP assisted more than 30 businesses and industries in its first year. The Waste Management Authority Division also produced a *Local Government Recycling Guide* and a *Local Government Composting Guide* as well as making available an updated version of the *Iowa Recycling Directory*.

The work begun in the first year of this decade continues as we move further into the 90s. The challenge issued last year to join us throughout this decade as we each strive to change our lifestyles in favor of the Earth continues to be met by each of us on a daily basis. The way we choose to live each day of our everyday existence can positively impact the quality of Iowa's environment. Together our individual decisions and the actions that stem from those decisions, have a very positive effect on the future of our state.

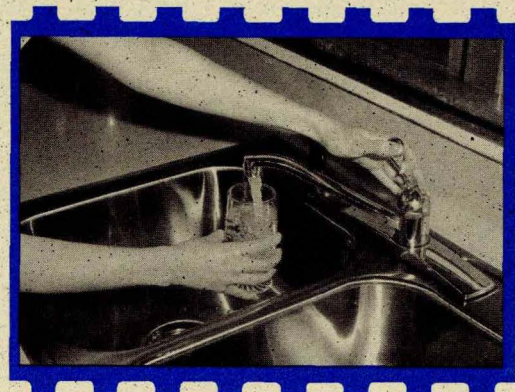
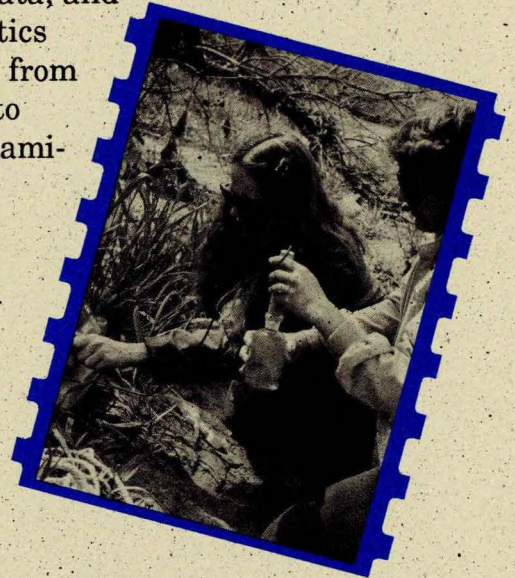


ENVIRONMENTAL ISSUES

GROUNDWATER: As mandated by the 1987 Groundwater Protection Act, the DNR completed groundwater hazard mapping of the State. The resultant publication, Groundwater Vulnerability Regions of Iowa, is based upon an unprecedented compilation of hydrogeologic data, and identifies regions which have similar hydrogeologic characteristics affecting the relative vulnerability of aquifers to contamination from surface and near-surface sources and activities. It is designed to help Iowans understand the complex issue of groundwater contamination and provide a general framework for understanding the distribution of known contamination.

Major efforts continued in FY 1991 in coordinated inter-agency programs focusing on improving the environmental performance of agriculture in Iowa. The Big Spring Basin Demonstration Project, and the statewide efforts of the Integrated Farm Management Demonstration Project and Model Farms Project have all been acknowledged with various awards. These projects are recording impressive progress in finding ways to promote efficiencies in farm management that improve environmental and economic concerns for farmers. Progress reviews in the Big Spring Basin show that area farmers have reduced their use of nitrogen fertilizer by about 20 percent since 1981. This has resulted in a reduction of nitrate loading in the "Basin" of more than one million pounds of nitrogen per year. Over this same period, corn yields have actually increased, demonstrating that we can reduce impacts on the environment, and do so profitably. Reductions in nutrient loading and pesticide loading are even beginning to be evident in statewide statistics and use patterns. These changes will be reflected in improved water quality over the coming years, and will result in millions of dollars in savings for Iowa farmers.

Data from a previous statewide, rural well-water survey showed that about 18 percent of rural, private drinking water wells in Iowa were contaminated with nitrate in excess of the recommended health advisory level of 10 mg/L, and that about 44 percent of the wells and/or their distribution systems were contaminated with coliform bacteria. Also, nearly 14 percent of the wells tested showed low levels of one or more pesticides. A 10 percent subset of the 686 sampling sites was resampled in the fall of 1990 and in June of 1991. The results have not been fully analyzed and compared against the original survey, but this subset of sampling sites will continue to provide valuable data for long-term monitoring to characterize trends in the quality of rural water supplies.

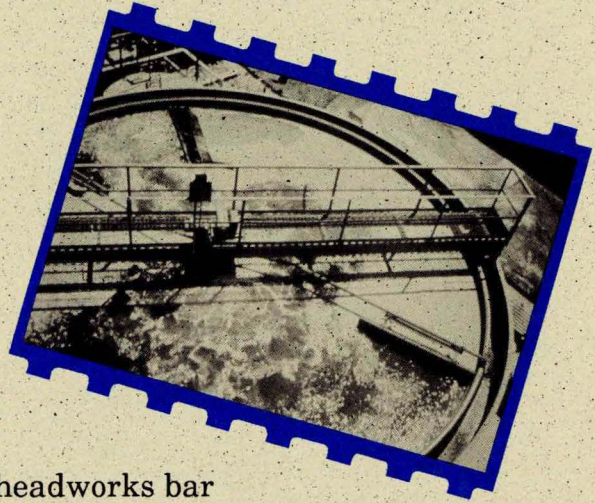


WASTEWATER TREATMENT: During the year, 1484 out of 1597 facilities with National Pollution Discharge Elimination System (NPDES) permits, or 92.9 percent of wastewater facilities were in compliance with their effluent limits.

Fiscal year 1990 was the last year of the federal construction grants program. The construction grants program assisted communities in constructing wastewater treatment facilities. To replace the construction grants program, the DNR implemented the State Revolving Fund (SRF), a low-interest loan program.

In FY91 there were a 8 loans for a total of \$12,052,000. The following is a list of the communities and the loan amounts.

Community	Loan Amount
Camanche	\$336,000
Des Moines	\$9,190,000
Dows	\$310,000
Independence	\$964,000
Martensdale	\$210,000
Oskaloosa	\$189,000
Stanwood	\$294,000
Van Meter	\$559,000
Total	\$12,052,000



The loans were used on work which included a headworks bar addition, aeration equipment and basin, construction of numerous sewers, an aerated lagoon with wetland polishing, lift stations, two controlled discharge lagoons, digester work and conversion of a controlled discharge lagoon to an aerated system.

Since the beginning of the program there have been 13 loans awarded to 11 communities for a total amount of \$26,236,000. It is estimated that on the average, five miles of a receiving stream could be improved by the construction of each wastewater treatment facility. This calculates to date to approximately 55 miles of Iowa waters benefited by the SRF program.

UNDERGROUND STORAGE TANKS: The number of reported leaking underground storage tanks greatly increased due to the deadline to apply for funding and state insurance. To date, a total of 4,428 leaking sites have been reported.

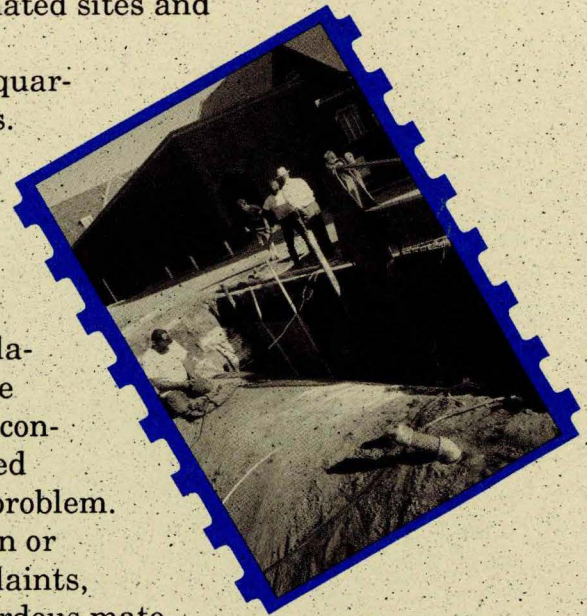
At the end of the year, there were approximately 16,031 active regulated tanks, and about 4,169 farm and residential tanks under 1,100 gallons that had been registered.

The underground storage tank regulations are having an impact on the discovery of contamination and the closure of older tank systems. Many tank owners are permanently closing their older tanks rather than upgrading them.

Major changes in the UST program are occurring due to legislation signed into law May 10, 1991. Rules are being adopted that will change

requirements for site cleanup reports, corrective action of contamination, secondary containment for new USTs installed at contaminated sites and the registration of groundwater professionals.

In June of 1991 the department began publishing a quarterly newsletter directed toward tank owners and operators. The purpose of the newsletter is to answer questions, explain terms and help the owner/operator understand and meet regulatory requirements.



PUBLIC REPORTS: The number of complaints from Iowa citizens regarding environmental hazards or violations totaled 2,254, up 53 percent in the last two years. The increase is possibly due to increased public awareness and concern about Iowa's environment. Complaints are investigated and, if found to be valid, result in actions to eliminate the problem. The complaints received most often involved water pollution or improper solid waste disposal, but also included dust complaints, tainted water supplies, odors, toxic air pollutants and hazardous materials.

WASTE: During this year the Waste Reduction Assistance Program (WRAP) continued to address the needs of Iowa's larger businesses and industries to reduce the amount of waste they generate. It addresses all forms of waste reduction opportunities including solid waste, hazardous waste and air emissions. WRAP completed its first year using the expertise of twelve retired industry professionals and a project manager to assist more than 30 companies. WRAP also initiated a program to provide on-site, pollution-prevention, training workshops for client companies.

Iowa facilities that are permitted to process solid waste are required to prepare a solid waste comprehensive plan that addresses the feasibility of alternatives to conventional land disposal, such as source reduction, recycling and incineration for energy recovery. During the year, 27 solid waste comprehensive plans received approval from the DNR.

Twenty-one grants, totaling approximately \$2.5 million, were awarded under Iowa's landfill alternatives grant program to promote innovative demonstration projects as alternatives to landfilling. Grants were awarded for a variety of projects including waste reduction education programs, community and commercial recycling projects and composting and mulching projects. Funding for these grants came from the fees paid by landfills on a per-tonnage basis for disposal of waste.

Three toxic cleanup days were conducted in the state to collect household hazardous waste from homes and farms for recycling and proper disposal. A statewide survey of Iowa's households was conducted to determine household hazardous product use. Results of the survey underscored the need for proper household hazardous waste education and collection.



With a grant from the U.S. Environmental Protection Agency, the department has contracted with Iowa State University to develop a computer bulletin board for recycling, known as the Mid-America Recycling and Transportation Network (MARTIN). The system will provide recycling market information to 25 midwestern states. It will be available to anyone in the United States via a toll-free phone number. The caller may use either a touch tone phone or a computer modem to access the information.

Waste Management Authority Division provided technical assistance throughout the year to communities by sponsoring regional recycling, composting and comprehensive planning workshops. In addition, a *Local Government Recycling Guide* and a *Local Government Composting Guide* were produced and an updated version of the *Iowa Recycling Directory* was made available.

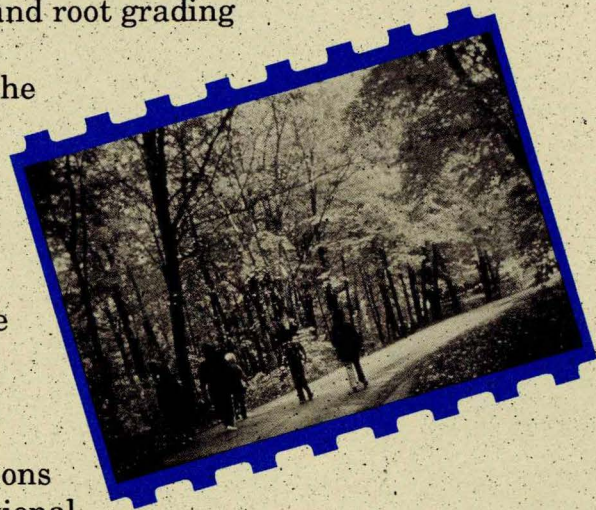
NATURAL RESOURCE LANDS

FORESTS: The State Forest Nursery at Ames and the satellite growing area at Montrose grew and distributed more than five million tree and shrub seedlings. The nursery cooperated with Iowa State University in the continuation of walnut improvement and root grading projects to increase survival and tree quality.

Planning and land acquisition continued for the Loess Hills Pioneer State Forest. This planned 17,000-acre forest is located in Monona and Harrison counties. During the year, an additional 1,051 acres were acquired at a cost of \$641,750; total acreage purchased to date is 5,699 acres. Funding for these recent acquisitions came from the Resource Enhancement and Protection (REAP) fund.

Forestry assistance was provided directly to 6,676 individuals by forestry division personnel. In addition 401 forestry related programs, demonstrations and tours were conducted during the year. An additional 36,704 acres of forestland were brought under improved management by private landowners and 8,028 acres of trees were planted. State cost-share funding for tree planting and timber stand improvement was made available to Iowa landowners from the REAP program. These cost-share monies made it possible to increase the level of tree planting and timber stand improvement.

The Iowa Urban and Community Forest Council was established to assist in the implementation of President Bush's "America the Beautiful" urban tree planting initiative. This urban forestry program offers volunteer coordination, educational training and technical assistance to Iowa communities. Utilizing the talents of the Forests and Forestry division, Iowa State University Extension and others, more than 283 communities received urban forestry assistance. An estimated 93,000 trees were planted in Iowa's urban areas.



The forestry division cooperated with the Iowa Department of Economic Development (DED) to initiate the U. S. Small Business Administration tree planting program within the state. Programs in 16 community, county and state projects received awards totaling \$161,700 in 50-50 matching grants. As a result there are 14,800 more trees in Iowa purchased from and then planted by small Iowa businesses.

In another inter-departmental program the DNR's forestry division worked with the Department of Transportation (DOT) in implementing a tree planting program along the state's major highways. Iowa gained more than 250,00 trees and shrubs on 285 acres along its interstate and primary highways as a result of this collaboration.

The "Trees For Kids" program, a cooperative tree education and planting program for elementary schools successfully completed its second year. The Iowa Nurserymen's Association, Iowa Banker's Association and the Iowa Telephone Pioneers joined the DNR in providing educational packets for classroom use and landscape trees to plant, free of charge. More than 138,000 students and teachers participated and planted 20,00 landscape trees.



PARKS: Revitalization and renovation, recycling and the protection of natural areas as well as the preservation of historical information all played a part in the activities of the Parks, Recreation and Preserves division. The recreation programs bureau was formed at the end of the fiscal year by combining existing staff from the former Coordination and Information's planning bureau, trails and waterway access unit and the park management bureau. Major responsibilities for the bureau include coordination of park master planning, and the water access, snowmobile, ATV, public contact training and "barrier-free" programs as well as DNR's trail construction projects and a variety of recreation/resource planning and development efforts.

This year saw the grand "reopening" of Pikes Peak State park with new trails that include boardwalks, observation platforms and redesigned trail steps and railings. A portion of the board walk is accessible to the mobility-impaired. Overlooks, walkways, rest room and lodge renovation, playground equipment, a shower building and new utility system renovation are also part of the park's enhanced features.

Other new construction included a new entrance road at Mines of Spain state recreation area. REAP funding made possible a variety of renovation/repair projects within the state park system. REAP funding enhanced park use by conserving and maintaining existing park features as well as maintaining facilities.

A history of the conservation movement in Iowa prior to World War II, sponsored by the State Historical Society



and the DNR was completed during this year. Much of the facility inventory was completed by department staff.

Waste reduction efforts began on a pilot basis at selected state parks. These projects include the recycling of glass, metal and plastic and a "carry-in and carry-out" trash program. The program is expected to expand to all parks in coming years.

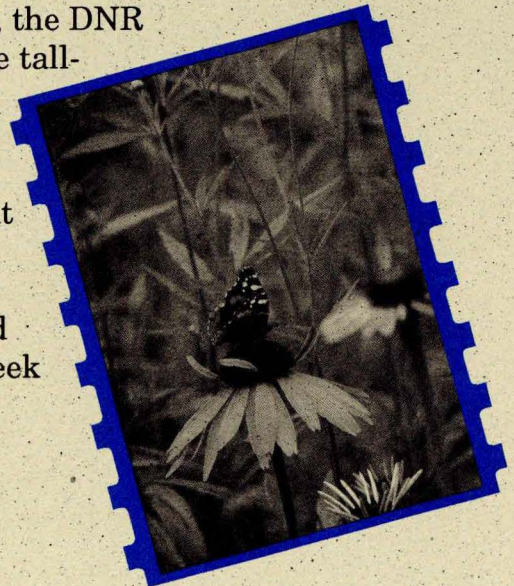
PRESERVES: At the end of FY 91 there were 83 state preserves which included about 8,000 acres. During the year six preserve management plans were completed. The Preserves Advisory Board placed a high priority on the completion of management plans for all preserves.

Roberts Creek Preserve in Clayton County is the most recent addition to the system. It is a 13-acre woodland which contains a number of rare plants, including the largest known population of Northern Wild Monkshood. This species falls under the listing of "threatened" as defined by state and federal regulations.

One potential state preserve and two tracts of buffer land were acquired during the year. The potential preserve is a 43 acre area in Jones County that contains about 1,200 feet of the north fork of the Maquoketa River and a 565 foot cave with several large rooms. The cave entrance, interior rooms and passageways are smoothly contoured. There are numerous interior areas which have actively forming flowstone and small stalactites. The cave is a good example of karst topography with features that result from the dissolution by groundwater of shallow, fractured and creviced carbonate rock.

Two additional tracts of land adjacent to White Pine Hollow were purchased. These areas will serve as buffer areas to the preserve by protecting the preserve from runoff from agricultural fields and the invasion of weedy plant species. One tract of 100 acres is located along the northeast corner of the preserve. The other is a 72 acre tract along the south entrance to the preserve.

In response to a recommendation from the REAP Congress to place more emphasis on the acquisition of natural prairies in Iowa, the DNR initiated an effort to protect a large, contiguous area of native tall-grass prairie. Staff worked closely with the DNR Wildlife bureau to identify and evaluate several large tracts. The selection criteria included a broad range of ecological and recreational benefits but focused most strongly on the amount and quality of existing natural prairie. From the three final candidate areas in northwest Iowa, a 4,700-acre area was selected. The site is centered on extensive hill-prairies situated by the confluence of the Little Sioux river with Waterman creek in southeastern O'Brien county.

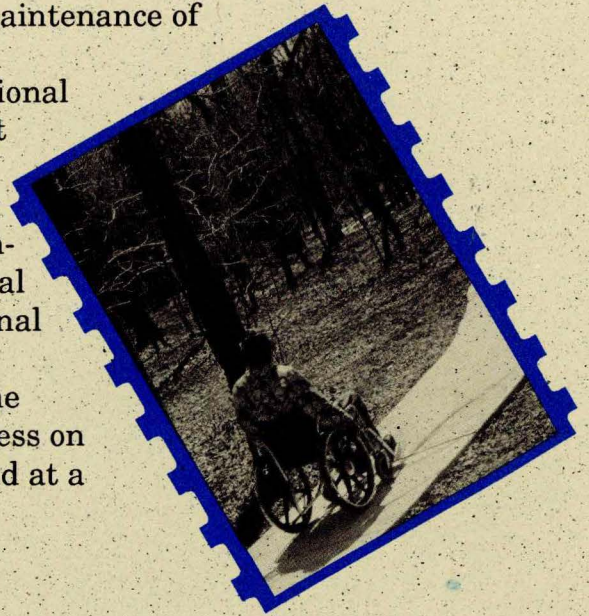


TRAILS AND WATERWAYS: Changes in all terrain vehicle (ATV) registration requirements led to an increase in registrations and a grant program was initiated for the establishment and maintenance of ATV parks and trails.

A major publication, the Mississippi River Recreational Boating Guide was completed and distributed throughout the state.

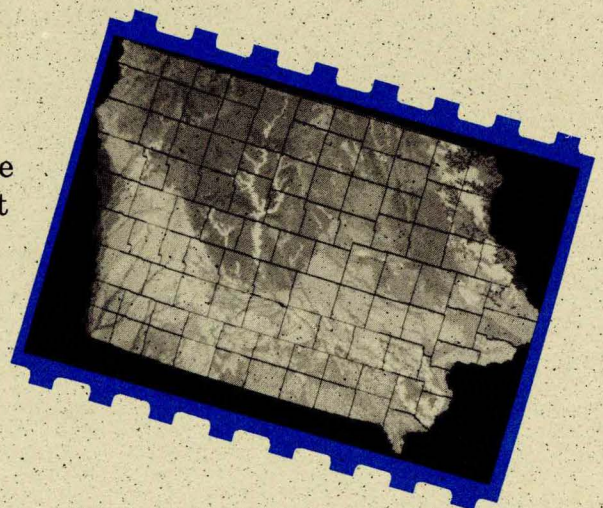
The Water Access grant program provided funding for boating access developments by eleven cities and counties across Iowa. The DNR also received a \$500,000 federal grant that provided for partial funding for eleven additional projects across the state.

Major boating access projects were completed by the DNR at Lake Sugema in Van Buren county, Le Clair Access on the Mississippi River, on Spirit Lake and Storm Lake and at a number of the state's smaller lakes and rivers.



GEOLOGY: The DNR implemented a cooperative agreement with the U. S. Geological Survey (USGS) to drill a series of core holes across the Manson Meteorite Impact Structure. The geology of this 22-mile diameter crater, with its center near the town of Manson, is extremely complex. This drilling project is part of the USGS Continental Scientific Drilling Program, and is one of only a few selected for funding from the large number of proposals that were submitted nationally. Core recovered during FY 1991 has stimulated increased interest in the project, and the USGS already have indicated their desire to fund additional drilling during FY 1993. Our joint goals are to improve understanding of this site and what is classified as a "large impact-cratering event" and its effect on the terrestrial environment. Possible outcomes include the discovery of previously undetected water resources and zones of mineralization.

The DNR continued work on a computerized natural resource geographic information system. With this system, a library of geographically referenced data layers is being developed on streams, lakes, wetlands, forests, land cover and use, geology, aquifers, transportation networks and other resource-related items that will be integrated into mapping assistance for all department programs. Emphasis during FY 1991 has been on completion of land cover and use, utilizing satellite imagery. As other data layers are compiled, the geographic information system will aid the DNR in development, management and protection of Iowa's natural resources.



ENERGY

ENERGY: Energy was once more in the forefront of Iowa's thinking with the Persian Gulf conflict last fall and winter. Gasoline prices shot up to highs above \$1.40 per gallon, and shortages were feared. The DNR's energy bureau was involved throughout the situation:

- in monitoring gasoline prices and supplies,
- in informing the public on ways to use fuel wisely,
- in readying for potential energy emergencies and
- in advising the governor and other policymakers.

Fortunately, actions taken both by individual consumers to conserve fuel and by the federal government to stabilize supplies helped prevent a crisis.

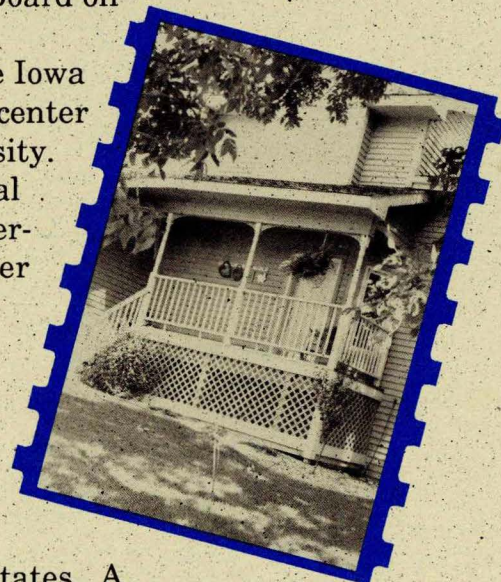
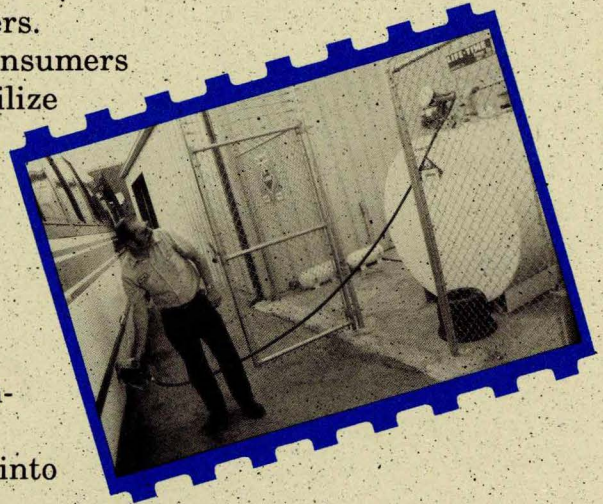
Putting Ideas into Action - The Persian Gulf situation underscored Iowa's dependence on imported sources of energy and on the need to become a more efficient state. This was recognized in the landmark Energy Efficiency Act of 1990, passed by the Iowa General Assembly. The energy bureau worked during FY 1991 on putting the ideas proposed in that legislation into action.

First, Iowa's utility customers will become more efficient energy users through programs required by the legislation. The energy bureau, because of its long experience in helping Iowans use energy efficiently, was able to advise both utilities and the Iowa Utilities Board on how to implement these efforts.

Second, the energy bureau helped launch the Iowa Energy Center, a new research and demonstration center established by the legislation at Iowa State University. The Energy Center, along with the Center for Global and Regional Environmental Research at the University of Iowa and the Energy and Environment Center at the University of Northern Iowa, will contribute significantly to Iowa's ability to solve its energy problems.

Third, two required reports on energy and environmental policy were completed. The energy bureau's report on tailpipe emissions standards concluded that Iowa would not benefit by having higher standards for vehicle emissions than other states. A report on energy efficiency standards for appliances outlined the arguments for establishing state standards for appliances not covered by national laws, such as lighting.

Alternative Energy for Iowa - Because Iowa currently imports 97% of the energy we use, it is crucial to develop indigenous, "home-grown" resources. The energy bureau explored that on several fronts. The staff con-



tinued to assess the availability and viability of energy sources such as wood and wood waste, agricultural energy crops and crop residues, municipal solid waste, wind, solar and hydropower.

The DNR operated two vehicles on 85 percent ethanol over the last year, with excellent results. One car was a factory-built, flex-fuel vehicle, and the other was fitted with a special valve to allow the use of the high-blend ethanol.

Progress on Efficiency - The energy bureau programs for public buildings made progress in the last year. A new program for cities and counties signed up its first participants and began helping them make cost-saving energy improvements. The Iowa Local Government Energy Bank Program is co-sponsored by city, county and municipal utility associations.

The programs for state agencies, schools and hospitals continued to save energy and money for these tax-supported institutions.

At the end of the fiscal year, out of an estimated \$300 million worth of needed improvements throughout Iowa's public sector, about \$30 million worth have been installed and another \$70 million worth have been identified and are ready to be installed. These improvements will not only pay for themselves in energy savings, but will continue to save money after they are paid for.



FISHERIES AND WILDLIFE

FISHERIES : Commercial harvest of food-fish on the Mississippi River by 145 licensed owners totalled 2,900,000 pounds. Fourteen licensed owners reported harvesting about 37,000 pounds of fish. Economic value of commercial food-fish harvested from both border rivers was estimated at approximately \$600,000. Contracted commercial fishermen harvested over 960,000 pounds of fish from 25 interior lake areas, which was valued in excess of \$120,000.

The reported harvest of freshwater mussels by 469 Iowa licensees totalled 2,388,000 pounds of live and dead shells for a 28 percent increase in harvest over the previous year. The estimated value was this fishery was \$2,170,000, more than double the value of last year.

The fisheries bureau culture facilities reared and stocked into public waters of Iowa nearly 146,000,000 fish. This total included 438,000 trout, 112,000,000 walleye, 24,000,000 northern pike and 2,700,000 catfish.

Fish population restoration projects were complete at Blue Lake in Monona County, Tug Fork silt retention ponds at Lake Sugema in Van Buren County, Pammel Park Pond in Winnebago County, and Willow Creek Pond in Montgomery County. More than 400 largemouth bass were salvaged from Lower Pine Lake and stocked into Upper Pine lake in Hardin County prior to drainage for spillway repair.

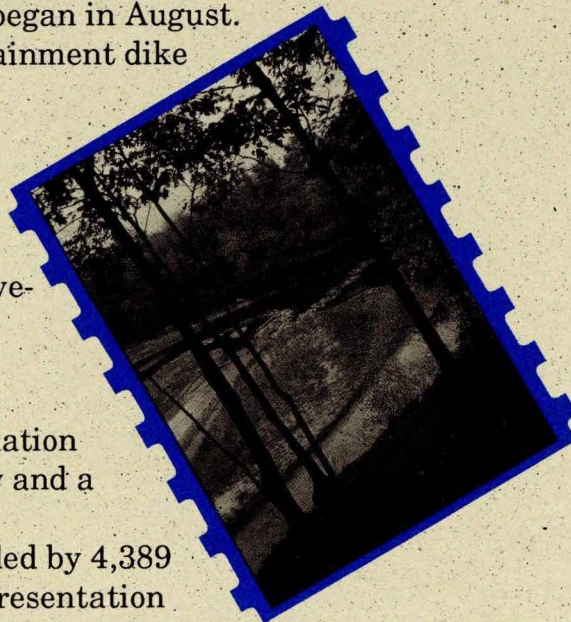
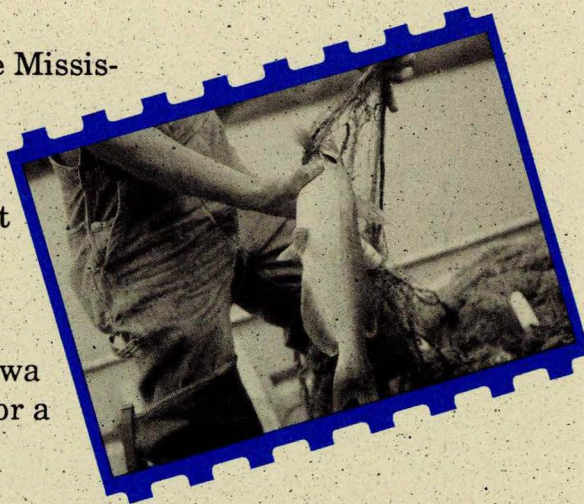
Aquatic habitat improvement projects occurred at 11 lakes. They are: Beed's Lake, Upper Pine Lake, Smith Lake, Lake Catherine, Coralville Lake, Pleasant Creek Lake, Lake Macbride, Worth County Lake, Central Lake, Lake Iowa, Lake Darling, Diamond Lake, Littlefield Lake, Lake Anita, Cold Spring Lake, Mormon Trail Lake, Orient Lake, Dicksissel Lake, Don Williams Lake, George Wyth Lake and Clear Lake.

Construction on the Big Timber (Pool 17, Mississippi River) Habitat Rehabilitation and Enhancement Project (HREP) began in August. The initial phase of mechanical dredging and containment dike construction was completed.

Springbrook Lake in Guthrie County was drained for spillway repair. Deepening of the lake, using earth moving equipment, was accomplished during the cold weather months. Three fishing jetties were constructed and in-lake habitat improvement work was completed.

A major Mississippi River HREP backwater habitat improvement project was completed in the Brown's Lake complex (Pool 13). Post-project evaluation demonstrated significantly improved water quality and a substantial increase in use by anglers.

Sixty-one Youth Fishing Clinics were attended by 4,389 young participants and 771 adults in 1990. Staff presentation were made at 116 meetings of organized groups. Information was provided for 469 newspaper articles and 38 outdoor magazine



stories. A total of 290 radio programs and 17 television interviews were presented during the year.

Three coldwater stream properties containing 405 acres were purchased on Pine Creek and Clear Creek in Allamakee County and Hewitt's Creek in Clayton County. Approximately 160 of land was acquired near the inlet area of Black Hawk Lake in Sac County for development of a containment area for dredge spoil.

WILDLIFE: More than 2,700 acres of wetland and upland habitat were purchased and placed into public ownership as part of the Prairie Pothole Joint Venture (PPJV). This cooperative program included funding of over \$1 million from the U.S. Fish and Wildlife Service (USFWS), \$275,000 from Iowa waterfowl and habitat stamp funds, \$825,000 from Resource Enhancement and Protection (REAP), \$26,000 from county programs, \$300,000 from private conservation organizations and \$230,000 from various donations.

An additional 400 acres of wetlands were restored on private land as part of DNR and USFWS programs. This involved 125 wetland basins, most of which were located on land enrolled in the Conservation Reserve Program (CRP). Another 140 acres of wetlands were restored on existing public land.

REAP monies also provided the funding for the completion of the development project at Green Island Wildlife Area in Jackson County. Construction projects included dikes, water control structures and a water pumping station.

Other development programs included two subimpoundments completed at Red Rock Wildlife Area in Warren county. Plans are being generated for a water pump station to fill the wetland areas.

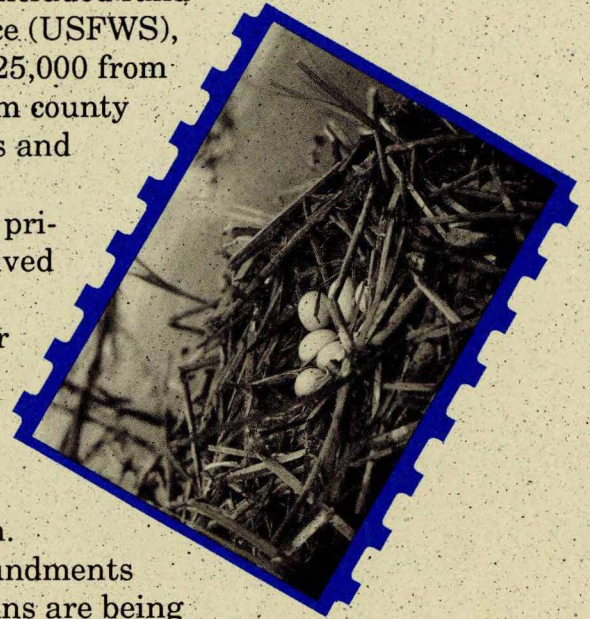
Wildlife management biologists maintained 350 state-owned public wildlife areas totalling more than 300,000 acres. Wildlife research biologists continued research activities on pheasants, deer, turkeys, waterfowl and nongame wildlife during the year.

Hunting season totals showed continued steady activity. Deer harvest was about the same as last year with 98,000 animals harvested. The number of deer licenses issued declined slightly to 192,551 bow, shotgun and special muzzleloader licenses.

Game bird seasons were busy and approximately 4,600 turkeys were harvested in the fall season by 13,727 licensed hunters. During the spring season, 8,200 turkeys were harvested by more than 30,000 licensed hunters. An estimated 210,845 resident and nonresident pheasant hunters harvested 1.4 million pheasants which is about the same as the previous year.

The duck breeding population remained relatively stable for most species in Iowa. Many of Iowa's wetlands experienced better water conditions this year due to increased rainfall across the state.

Nongame programs also continued to fulfil their long-range plans. A total of 19 peregrine falcons, 8 females and 11 males, were released in Des Moines in an on-going attempt to restore this species to Iowa. Most of



the birds survived and it is hoped that they will return to nest in Iowa when they are mature.

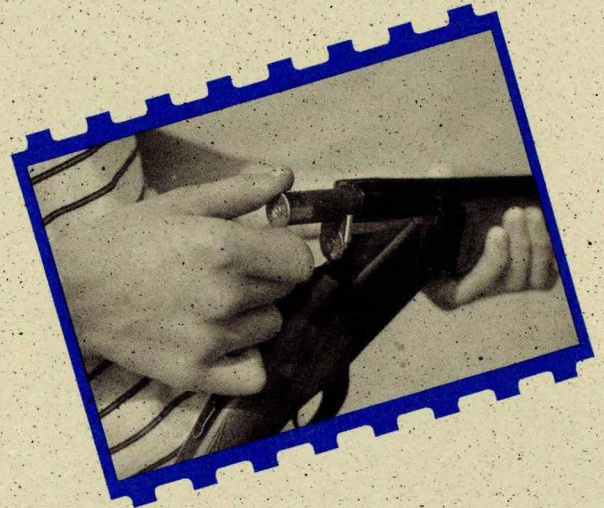
Prairie chickens from previous introductions were again found on booming grounds this spring in Ringgold county and production of young was verified by the observation of several broods.

LAW ENFORCEMENT: Through Iowa's Turn-In-Poachers (TIP) program, a total of 536 calls were processed during the year. These calls resulted in 53 cases and 128 citations were issued as a result. The citations were issued for illegal taking and possession of deer; falsifying deer license; shooting shotgun slugs from roadway; illegal sale of deer meat; and use of citizen-band radios and vehicles to pursue deer. Other citations issued included shooting of hen pheasants; hunting after hours; illegal possession of furbearers; taking of fish under minimum length limits; and exceeding possession limits for fish. A total of \$5,125 was approved for reward payment.

Conservation officers investigated 61 hunting accidents, seven of which were fatal. The majority — 28 — occurred during the pheasant hunting season.

Liquidated Damages — \$44,200 Collected

Species	Number of Violations
Deer	61
Fish/Mussels	1,406
Upland Game	67
Raccoon	15
Waterfowl	14
Furbearer	2
Turkey	8
Rabbit	0
Squirrel	46
Other	23
TOTAL	1,602



Education and Recreation Classes

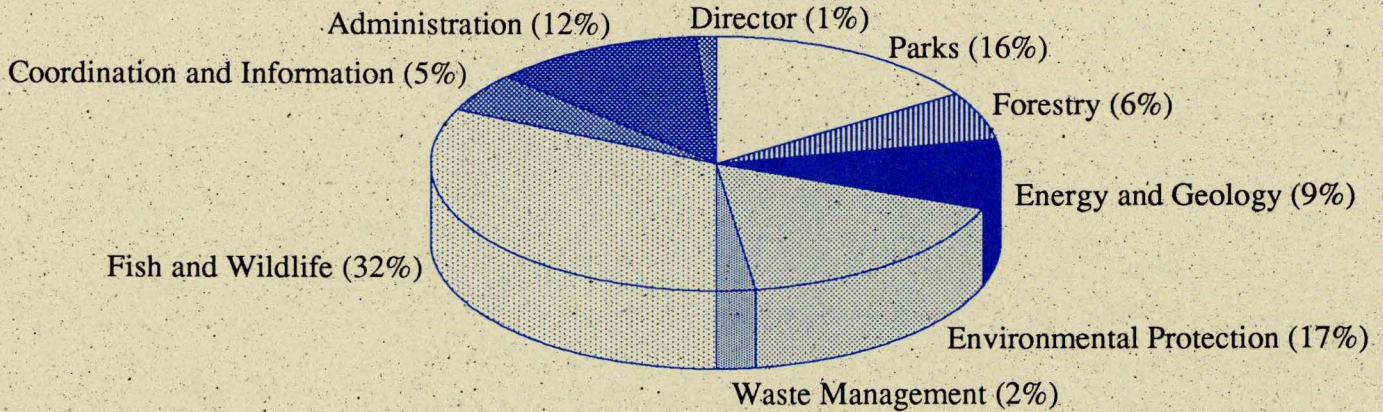
	Hunter Education	Snowmobile Safety	Boating Safety	Fur Harvester	ATV
Instructors Certified	11	13	5	7	24
Classes Conducted	397	41	10	6	13
Students Trained	10,351	514	750*	29	228

*Home-study course

BUDGET

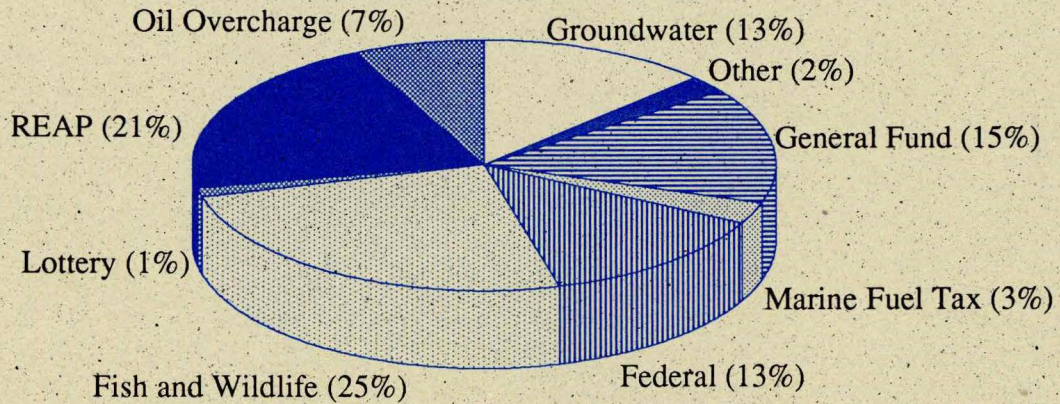
OPERATIONAL EXPENDITURES

by Division
\$45,378,036



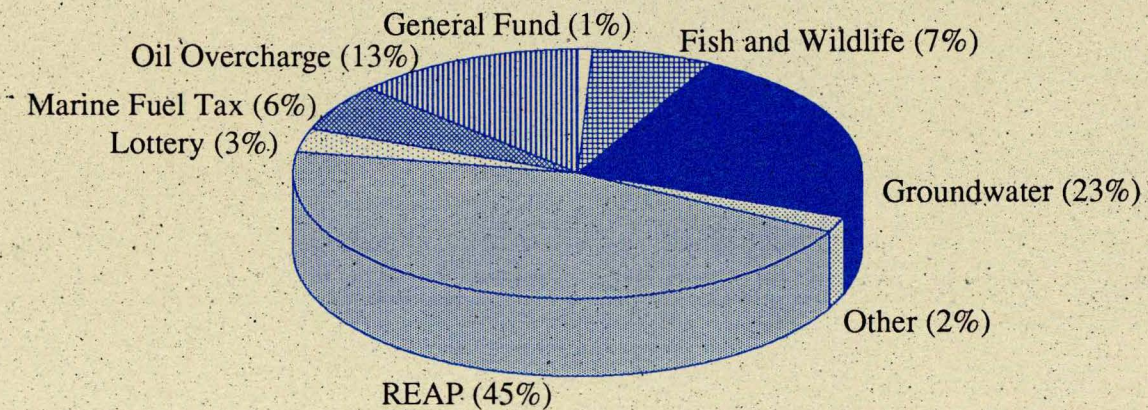
Sources of Funds For TOTAL EXPENDITURES

\$83,051,225



Sources of Funds For CAPITAL AND SPECIAL PURPOSE EXPENDITURES

\$37,673,189



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