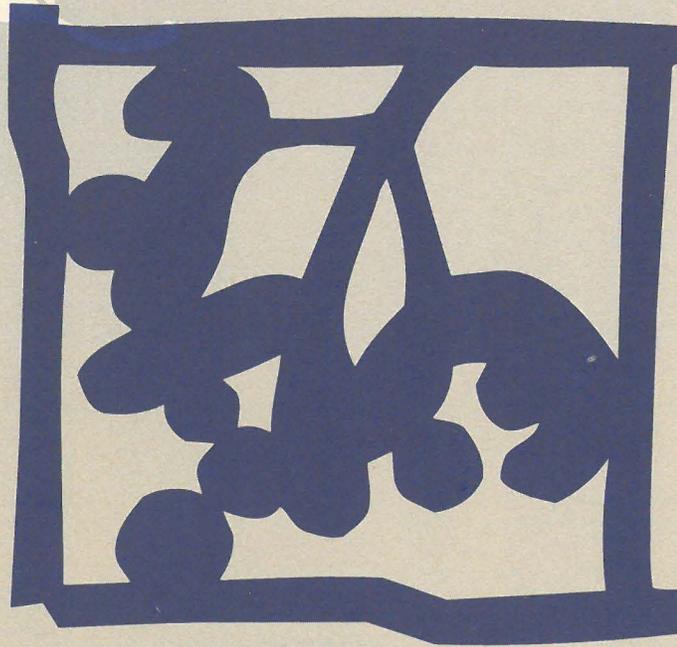




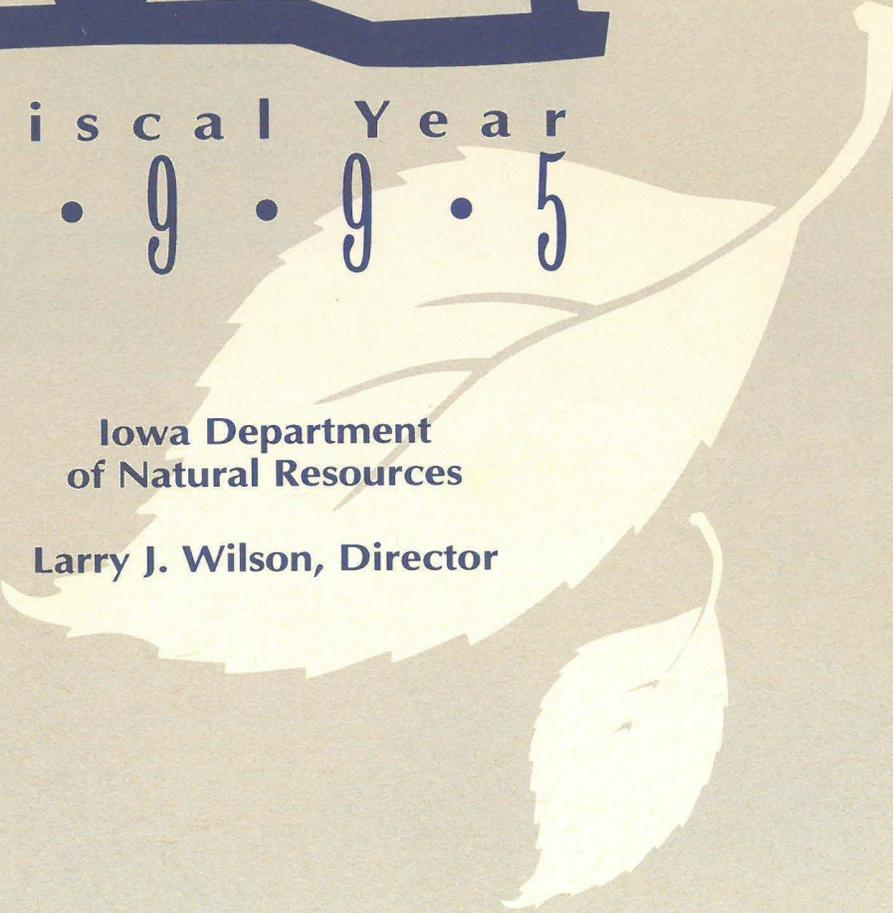
Annual Report



Fiscal Year
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Iowa Department
of Natural Resources

Larry J. Wilson, Director

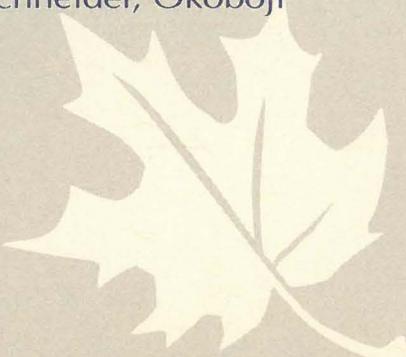


Natural Resource Commission



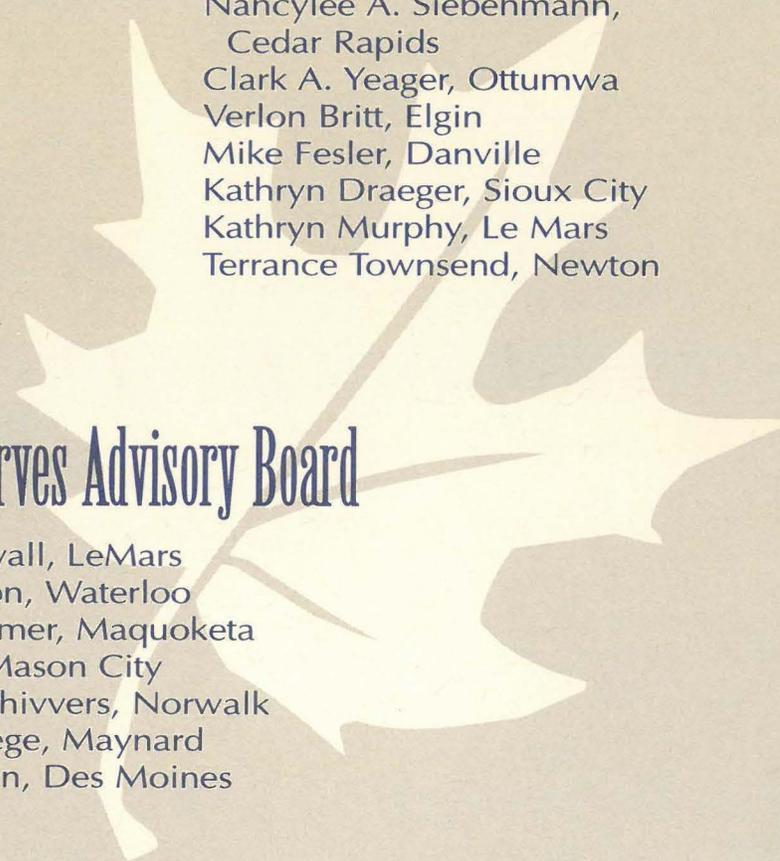
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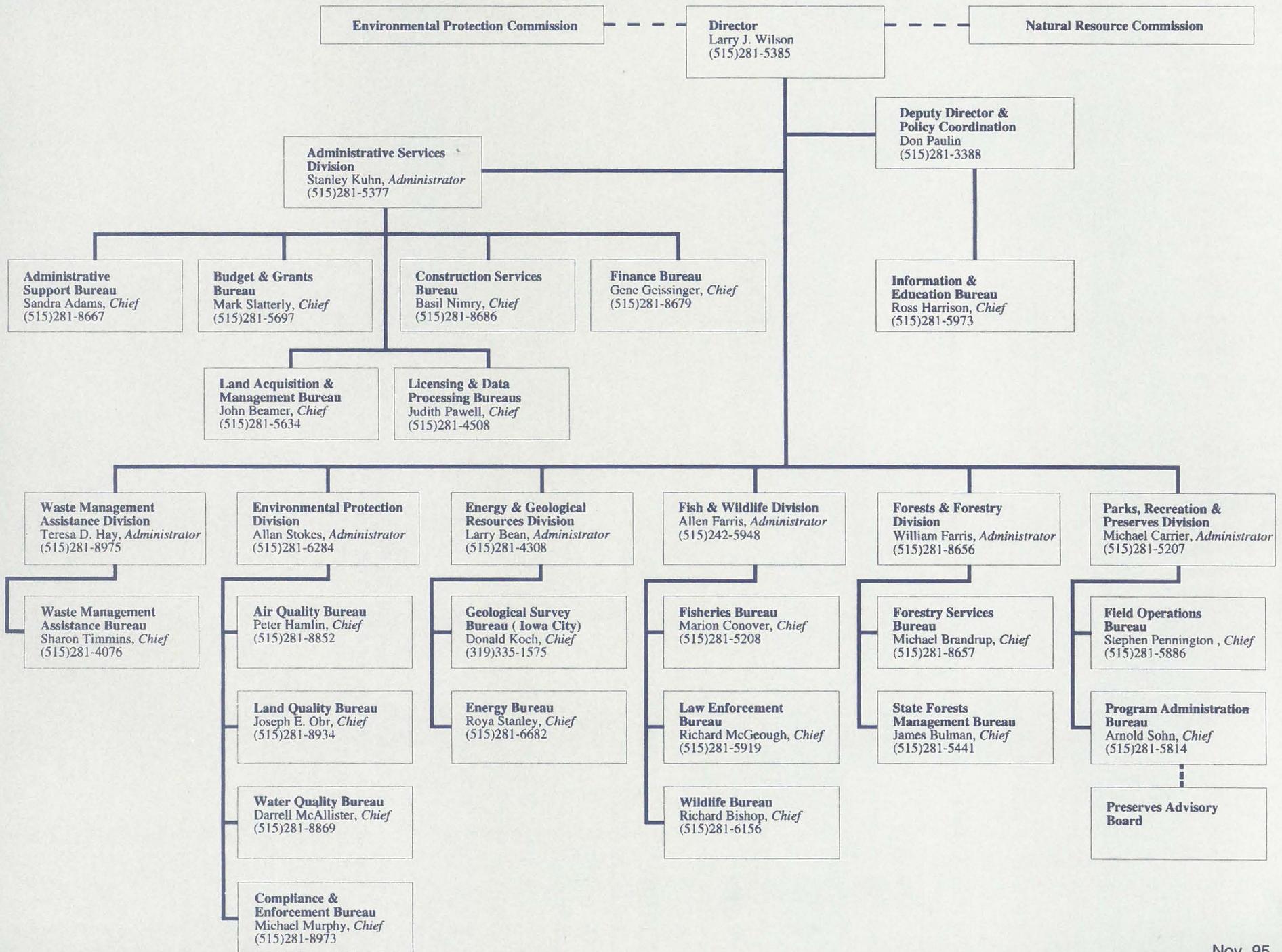
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Director's Message



A diverse year for the DNR, FY95 saw many new initiatives undertaken and quality work by a terrific staff on the routine of business of natural resource conservation.

The Iowa State Parks system celebrated its 75th anniversary during FY95, with special events, open houses, a symposium and a heightened sense of fanfare throughout the season. A major opinion poll of park users was conducted, and although results are not fully tabulated, it shows that Iowans do, indeed, treasure their state parks. Of particular note, park users overwhelmingly showed support of multi-use concepts which include deer and tree harvest where it fits into proper management of the total resource.

Generating a new source of income for parks, and all the other benefactors of the REAP program, January 1, 1995 marked the beginning of the new natural resources license plate. About 30,000 of the "state's most beautiful" license plates were sold in calendar year 1995. At \$35 each, (for the non-personalized plate, \$80 for personalized) that yielded more than \$1 million for the REAP program, 50 percent better than predicted.

Legislation was enacted in 1995 requiring DNR to establish new rules to regulate confined livestock operations. Modern hog operations continue to draw most of the attention with concerns over odor and water pollution. The rules will address issues such as manure management and distance separation from streams, public facilities and neighbors. I expect a continued lively debate on the issue for the next several years.

The DNR made its first appearance on the World Wide Web, due to the work of our Geological Survey Bureau. In the coming years, we expect that Iowans and the world will become ever more dependent on the Internet as an information source, and our presence there will be enhanced to meet their needs.

I invite your review of the DNR's year in more detail in the following pages.

Environment

Water Quality

Discharge Points. Iowa has more than 1600 facilities, such as municipal wastewater treatment plants and industries, that discharge wastes into streams and rivers. The DNR's discharge permit program limits the amount and concentration of pollutants discharged from a facility to insure the pollutants will not create conditions toxic to aquatic life or render Iowa's water unsuitable for drinking or swimming.

During 1995, DNR issued 223 discharge permits. In many cases, the permit review process required water quality modeling to determine permit limits. DNR staff also continued to work with cities and industries in the municipal pretreatment program. This program strives to limit the amount of toxic substances discharged to city wastewater treatment plants since conventional treatment processes are not always effective in removing industrial pollutants. By the end of 1995, 20 Iowa cities had pretreatment agreements with industries served by their wastewater treatment plants.

Water Quality Standards. The primary goal of the federal Clean Water Act is to protect the nation's waters by ensuring that the quality of those waters is good enough to protect existing and potential uses. While each state is charged with defining its own uses, in 1990 the Environmental Protection Commission established three basic categories as a guideline: Class A, primary body contact recreation; Class B, aquatic life; and Class C, drinking water. Class B uses are divided into sub-classifications.

Since 1990, DNR has been assessing all Iowa streams and lakes to determine their appropriate Class B use classification. This requires extensive field work to characterize the aquatic life which inhabits or could potentially inhabit a waterbody. As of 1995, the DNR completed the sixth round of aquatic uses and anticipates this effort will be completed in 1996.

The DNR also carried out the second year of a multi-year program to establish ecoregion-based biological criteria for Iowa waters. Ecoregions are areas where the ecological systems and the relationships between organisms and their environments are relatively uniform. Previous work divided the state into 10 ecoregions and subregions. Extensive sampling, using techniques such as seining, electrofishing and placing artificial substrates in the stream to collect invertebrates, is being conducted to obtain a detailed and comprehensive picture of the aquatic life in each of the 10 ecoregions and subregions. This project, when completed, will result in a better understanding of the aquatic life in Iowa and will provide the DNR with a valuable tool for measuring the environmental health of Iowa waters.

Water Quality Monitoring. A DNR study indicated that commonly used herbicides are often present in the water and sediment of reservoirs, although the levels of these herbicides in the treated drinking water are relatively low and are not thought to present a health threat. The most commonly detected herbicides were atrazine and cyanazine.

The DNR, in cooperation with the EPA, collected fish from Iowa waters and analyzed the fish tissue for toxic substances. The DNR's ongoing fish tissue analysis program provides information on whether Iowa fish are safe to eat and can yield valuable information about water quality. Some pollutants such as mercury are hard

to detect in water, but accumulate in fish tissue at much higher concentrations that can be detected and measured. Although a number of toxic substances such as chlordane, polychlorinated biphenyls (PCBs), dieldrin and mercury continue to be found in Iowa fish tissue, the levels found in 1995 and previous years were typically far below levels of concern. Fish consumption advisories for two locations, Cedar Lake in Cedar Rapids and the Mississippi River near Davenport, remained in effect for 1995 due to continued high levels of PCBs found in bottom-feeding fish in those locations.

Nonpoint Source Pollution (NPS). Nonpoint source pollution (NPS) is currently the leading problem in Iowa waters. The pollutants causing the most concern include sediment and plant nutrients from agricultural sources as well as urban. Modification of stream habitat (e.g., channel changes) has a significant impact on aquatic life. The DNR continued to work with the Division of Soil Conservation Service, Iowa State University and various state and local groups to sponsor nonpoint source pollution research and education, and to implement voluntary, watershed-based nonpoint source pollution control projects throughout Iowa.

In 1995, the DNR was successful in obtaining more than \$3 million in EPA Section 319 funds for NPS pollution control. Approximately \$2 million of those funds were targeted for specific NPS pollution control projects conducted by local organizations. Since 1990, the DNR has funded 35 NPS research and implementation projects, with the majority of these being watershed projects conducted by county Soil and Water Conservation Districts.

Animal Feeding Operations. The General Assembly passed HF519 during the 1995 legislative session in response to concerns over the growing number of large-scale confinement feeding operations. Although the DNR has regulated the larger confinement feeding operations for a number of years, HF519 strengthened the DNR's regulatory role. One of the more important water quality provisions of HF519 was the requirement that confinement feeding operations develop a manure management plan to ensure that adequate land will be available for the application of animal wastes. (Manure from confinement feeding operations must be land-applied and cannot be discharged directly into state waters.) DNR staff began drafting administrative rules to implement HF519, working with the Animal Agriculture Consulting Organization created by HF519.

The DNR continued to review permit applications for livestock confinement operations and open feedlots during 1995. One hundred forty permits were issued during 1995, with most of those being permits for swine confinement operations.

Floodplain Management. The DNR's floodplain management program dates back to 1949 when the General Assembly recognized the devastating impact of floods and enacted legislation creating a state floodplain management program to protect life and property from floods. In 1995, DNR continued to carry out activities which reduce the state's vulnerability to floods which includes regulating floodplain development; assisting cities in developing and carrying out local floodplain management programs; regulating and inspecting dam; and coordinating the National Flood Insurance Program.

During 1995, 385 floodplain permit applications were received, approximately 40% above the long-term average. The increased workload was due primarily to post 1993 flood projects.

As of the end of 1995, 133 Iowa cities and counties had adopted local floodplain management ordinances based on model ordinances developed by the DNR. Most floodplain development in cities and counties with DNR-approved floodplain management ordinances can be approved at the local level, eliminating the need for a DNR permit. DNR staff continued to provide assistance to those local governments in administering floodplain management ordinances, fielding numerous requests regarding the program.

Private Well Testing and Abandonment. The DNR awarded \$10,000 grants to 89 counties this year to assist private well owners in testing their drinking water quality. Grants of \$8,800 were also given to 93 counties to help private well owners to properly abandon wells. The General Assembly provides money to assist private well owners in the proper closure of water wells to protect the quality of Iowa's ground water and to eliminate safety hazards. Under the grant program, 3,674 abandoned wells were properly closed during SFY 1995, driving the total of wells being properly abandoned since the start of the program in 1989 to more than 18,420. In 1995, the General Assembly revised the law to also allow DNR to assist in the reconstruction of private drinking water wells. Grant funds committed to both these programs in SFY 1995 totaled \$1,708,400.

Water Supply. In 1995, the Iowa General Assembly revised the "fee bill," which allows the DNR to maintain program primacy for the drinking water program. The bill requires public water supplies to pay \$350,000 annually in fees. The money is a dedicated account that is used only for the drinking water program. The General Assembly passed the bill in 1994 at the urging of a coalition of water utilities and other affected organizations, and modified the bill in 1995 to limit the cost impact on smaller water systems. The fee bill allows the DNR to keep up with the rapidly expanding federal regulations.

Underground Tanks. The underground storage tank regulations continued to have an impact on the discovery of contamination and the closure of older tank systems. The number of reported leaking underground storage tank sites totaled 4,872. At the end of the fiscal year, 734 of these sites had received a low risk classification; 972 of the sites had been classified as high risk; and 943 of the sites have completed cleanup.

At the end of FY95, there were 11,262 active, regulated tanks on 4,573 sites. This is a decrease of 919 tanks over the past year. During the same period, approximately 1,076 tanks were removed. Overall, almost 22,918 tanks have been removed since 1988, the year the federal regulations went into effect.

As a result of legislative action, a technical advisory committee (TAC) was formed to develop administrative rules to implement a risk-based, corrective action (RBCA), decision-making process to evaluate petroleum contaminated sites. DNR staff assisted the TAC in rule development and administration.

Development of administrative rules to certify groundwater professionals conducting assessment and cleanup activities at petroleum contaminated sites was initiated. Groundwater professionals will be required to satisfy testing and continuing education requirements.

Air Quality

Iowa's air quality program has expanded in the last few years to implement portions of the 1990 Clean Air Act amendments. Most significant is the new operating permit program under Title V of the Act.

- Almost 300 large sources of industrial air pollutants applied for permits in 1995. An estimated number of 800 to 1,200 smaller sources is expected to apply in 1996.
- The DNR issued more than 1,242 construction permits in 1995, compared to 336 in 1993.

In general, Iowa's air quality is good. However, sulfur dioxide and particulates require attention:

- One or two days of unhealthy air quality include: Muscatine, with sulfur dioxide exceeding the national air quality health standards; and Mason City and Buffalo where excessive amounts of particulates were found. Muscatine continues to remain Iowa's only area in nonattainment status with the national air quality standards.

- Other areas in Iowa suspect of sulfur dioxide concerns include Iowa City, Cedar Rapids and Montpelier.

To better protect and monitor Iowa's air, the statewide monitoring network of roughly 71 monitoring instruments is being reviewed and updated with newer equipment and an evaluation of site locations. An updated monitoring network will give the DNR a more complete picture of air pollution in Iowa.

- In 1995, Iowa monitored for total suspended particulates, PM10 (microscopic particulates), sulfur dioxide, carbon monoxide, lead and ground-level ozone (smog).
- The number of tests of industrial smokestack emissions doubled since 1994, with over 200 tests observed by DNR staff in 1995.
- More than 100 inspections of renovation and demolition projects were conducted to help protect Iowans from airborne asbestos.

The DNR also funded the Air Emission Assistance Program at the University of Northern Iowa, a service that helps small businesses comply with air quality regulations. Local air control programs in Polk and Linn counties are funded by DNR, as is a small business ombudsman at the Iowa Citizen's Aide/Ombudsman Office to further assist small businesses.

Geological Survey

Public Access to Information. The Geological Survey Bureau began providing information about Iowa's geology and water resources through the World Wide Web, a user-oriented interface for the Internet. This exciting technology allows the electronic delivery of both popular and technical information to all interested parties: business, educational, research, government and the general public. It allows the delivery of popular articles, maps and images of Iowa to be distributed to teachers and students, technical publications to be delivered to researchers, and important databases to be delivered to geotechnical consultants. Currently, the DNR's World Wide Web site includes articles about Iowa's geology, lists of publications, Geographic Information System databases, abstracts of research projects, and various types of administrative information. In the future, digital geological and water resources databases may become directly accessible through the Web.

Rapid expansion of World Wide Web capabilities is evidence that its potential is very great for meeting the needs of people to find information. DNR expects to deliver many kinds of information to the public in the future.

Groundwater Resources. The relationship between agriculture and groundwater quality is an important long-term environmental and economic issue in Iowa. Specific groundwater contamination issues being addressed by DNR field studies include monitoring the closure of agricultural drainage wells to assess improvements in water quality. Earthen manure-storage structures used for livestock wastes constitute another potential pollution source. The DNR is sampling water quality by monitoring wells in the vicinity of these facilities in different geologic regions of the state, recognizing that vulnerability of groundwater aquifers varies with geologic materials. Addressing broader, nonpoint sources, the DNR continues long-term studies to evaluate water quality response to changes in farm management practices, such as rates of nitrogen and pesticide use and soil conservation measures. Characterizing groundwater resources across the state for a variety of individual, commercial and government agency users remains a major agency commitment.

Geological Mapping. Mapping geologic materials, partially supported by the U.S. Geological Survey through the National Geologic Mapping Act of 1992, continued in FY95 with the completion of the

first year of a 3-year Linn County project. These maps will be especially valuable to local government agencies to aid in land use planning decisions. The Cedar Rapids North and Marion 7.5 minute topographic quadrangles (at 1:24,000 scale), were mapped and two cross-sections (displaying the vertical distribution of the geologic materials) were produced for each map. Additionally, a new map of the bedrock geology of Linn County was produced. Since all maps are digital, they can be combined with existing coverages in the Natural Resources Geographic Information System to produce maps that will address specific needs. Work on two additional quadrangles is underway, and funding has been approved for the third and final year of the project.

Waste Management

The Waste Management Assistance Division co-sponsored (with the Iowa Recycling Association) the fourth annual Iowa Recycling Conference in October. The Department of General Services and WMAD worked together to expand recycling on the capitol complex. Approximately 600 tons of mixed office paper and 48 tons of cardboard were collected in FY95. There are more than 800 used oil collection sites in Iowa for do-it-yourself oil changers.

“Buy Recycled” Campaigns. In conjunction with the National Buy Recycled Business Alliance (BRBA), WMAD kicked off its own “Buy Recycled” campaign in October 1994. As part of the campaign, we published the “Buy Recycled, Iowa Recycled Product” directory, which provides businesses a information resource and encourages them to make purchasing recycled content products and materials part of their daily operations.

Pollution Prevention. The Waste Reduction Assistance Program (WRAP) assisted 31 organizations in FY95, and began a concerted effort to serve state and local institutions in addition to business and industry.

The WRAP program uses 12 senior industry professionals. Acting as consultants, they provide technical assistance. WRAP has assisted a total of 142 facilities since beginning in FY90, and has held 49 pollution prevention workshops for clients. To date, it is estimated that if clients implement only 20 percent of the ideas identified or confirmed by WRAP, the recurring annual cost savings will be from \$45 to \$50 million, and the waste reduced or recycled will total over one million tons each year. The program is funded by Iowa landfill surcharges and a U.S. EPA grant.

Solid Waste Planning. Every city, county and public or private agency operating a sanitary disposal project in Iowa must prepare a Solid Waste Comprehensive Plan. Part I of this plan must indicate how communities will meet Iowa’s waste reduction and recycling goals of 25 percent by 1994 and 50 percent by 2000, based on the amount of solid waste landfilled in 1988. These goals help protect Iowa’s groundwater and soil from leachate contamination, extend the life of Iowa’s landfills, and promote source reduction and recycling practices. During the year, 45 plans (10 new and 35 subsequent), were approved by the DNR. A total of 170 new plans have been received by the DNR since 1988; approved plans total 133. In addition, 76 subsequent plans have been received with 73 of these revisions to original plans having been approved.

Iowans have reduced the amount of solid waste being landfilled since 1988 by 28 percent through the practices of waste reduction at the source and recycling.

Household Hazardous Materials. Toxic Cleanup Days (TCD) were conducted in 13 counties to assist urban and rural households in the management and proper disposal of household hazardous waste. At these events 3,665 households brought 158,196 pounds of household hazardous materials for proper disposal at a cost of \$525,110.50. The cost to the state was \$438,033.

A project to increase awareness of the retailers consumer education program was conducted among several chapters of the League of Women Voters of Iowa. The project was intended to raise consumer awareness about HHMs. At the beginning of this project 284 retailers were surveyed, with only 17 retailers in full compliance with the education requirements of this program and 119 were in partial compliance. The results of the survey conducted after the public awareness meeting, showed no significant change. After the 284 stores were re-surveyed, 10 stores went from noncompliance to partial compliance and from partial compliance to full compliance. That was a 2 percent increase from the original results. These results conclude that many of the retailers in the state of Iowa are not in full compliance with the retailer's consumer education program.

Regional Collection Centers (RCCs). RCCs provide on-going collection of hazardous materials from households and small businesses, and education to the public on HHMs. The Metro Solid Waste Authority in Des Moines opened the first regional collection center (RCC) in the state in December, 1994. Clinton county's RCC will open in July 1996 and will serve Cedar and Jackson counties. Other RCCs that have received preliminary approval include the Landfill of North Iowa in Cerro Gordo County (six-county area), Scott and Muscatine Counties, Iowa Northland Council of Governments (in Waterloo, serving 6 counties) and the city of Dubuque (serving six counties.)

Financial Assistance. The Waste Management Assistance Division received and reviewed 73 Landfill Alternatives Financial Assistance Program applications requesting almost \$16 million in financial assistance for developing and implementing a variety of waste reduction and recycling projects. Approximately \$3.2 million in grants and zero interest loans were awarded to 20 applicants.

Grant and loan assistance was awarded for such landfill diversion projects as the elimination of styrofoam waste generation, recycling waste wood, electrical wire insulation, fly ash, food processing waste and scrap rubber, the addition of food waste in an existing yard waste composting operation, developing an alternative railroad tie with recycled content, waste reduction and recycling public education program development, etc.

Case summaries have been prepared on 13 previously funded projects and 17 additional case summaries were under development during the fiscal year.

A \$367,000 zero interest loan was awarded for recycling broken concrete and asphalt through the Iowa Business Loan Program For Waste Reduction and Recycling. Processed material is marketed as an alternative to virgin limestone aggregate for use in base and backfill material, pipe bedding material, site stabilization material, etc.

Waste Exchange for Business Industry. The By-product and Waste Search Service (BAWSS) is a proactive local waste exchange service for Iowa business and industry. The mission of BAWSS is to assist business and industry to reuse and recycle materials that otherwise would be landfilled. BAWSS representatives have helped divert \$47,773.40 of material from the landfill during a year of operation at a cost of \$265,000 or \$5.55 a ton. Companies saved \$1360,173 in landfill tipping fees.

New Video, Guide, Brochure. Every Iowa community is faced with the challenge of managing solid waste. The video, "Solid Waste Strategies: Unit-Based Pricing," and its accompanying Implementation Guide is intended to assist local decision makers in designing and implementing unit-based pricing in their communities.

Waste Oil and Filter Collections Sites. A waste oil and filter collection site directory was created for local distribution providing locations of 850 used oil collections sites in all Iowa counties, oil filter collections sites, waste oil and filter transporters and sources for questions on waste oil and filters.

Energy

The DNR's Energy Bureau focuses on the connections between energy, the economy, and the environment. By becoming more energy-efficient and developing home-grown, renewable energy, Iowans are moving the state toward an energy future that is economically and environmentally sustainable.

The Energy Bureau's primary approach to meeting these goals is to develop partnerships with private businesses, public agencies, utilities, trade allies, educators, researchers and funding sources. These partnerships grow into projects that are producing dynamic results for Iowa in the areas of building energy efficiency and alternative fuels. Some of those partnerships and projects are:

Building Energy Efficiency. Energy Bureau programs help public and nonprofit agencies across Iowa make better use of tax dollars by making sound investments in energy efficiency improvements. This is accomplished through the Building Energy Management Program which serves Iowa's state agencies, schools, hospitals, local governments and private colleges.

- At the end of the FY95, the Energy Bureau had identified \$131 million of cost-effective, energy management improvements in state facilities, local governments, schools, hospitals and private colleges. Of that, \$76 million were implemented, with an annual savings to taxpayers of \$13 million.
- With the assistance of the Energy Bureau, the Iowa Veterans Home in Marshalltown completed a major new energy efficiency initiative in FY95. The project was a result of a comprehensive engineering study commissioned to give the facility a blueprint to follow in the future. The project used new, more efficient boilers, a new chiller, more electrical generating capacity and an improved energy management system. Projections based on current performance indicate energy savings will be more than \$275,000 annually.
- The Glenwood State Hospital-School began a project in FY95 to update its inefficient lighting systems and to install a dehumidification system in the hydrotherapy facility. The results will include building safety, improved lighting conditions and energy savings of \$25,000.
- In FY95, the Energy Bureau continued to make it possible for Iowa schools, local governments, hospitals and private colleges to become energy efficient. Coe College in Cedar Rapids financed a \$1.3 million energy efficiency project through the Building Energy Management Program, which will save more than \$200,000 annually. In addition, the Energy Bureau continued to assist clients like the Des Moines Independent Community School District, the Walnut Community School District, the City of Waterloo, the Jasper County Care Facility, Coggon Municipal Utilities, and Drake University in the implementation of more than \$8 million of energy improvements which will save \$1.3 million annually.
- During FY95, the Energy Bureau reviewed 14 life-cycle cost analysis reports for public facilities. A life-cycle, cost analysis shows the true cost of a building's construction by taking into account the energy and maintenance costs for the life of the facility, as well as the initial cost of building it. The reports indicate that constructing the public buildings based on lowest life-cycle cost as opposed to lowest initial cost will result in \$1.44 million savings in taxpayer's money over the next 25 years.
- Program flexibility and customer service have been the watchwords for the Building Energy Management Program this year. In response to changing client needs, the Energy Bureau has revised its guidelines for Technical Engineering Analyses to give analysts and facility operators more flexibility in the type of analysis needed. These guidelines will also ensure that the facility receives only the amount of analysis needed; no more, no less.

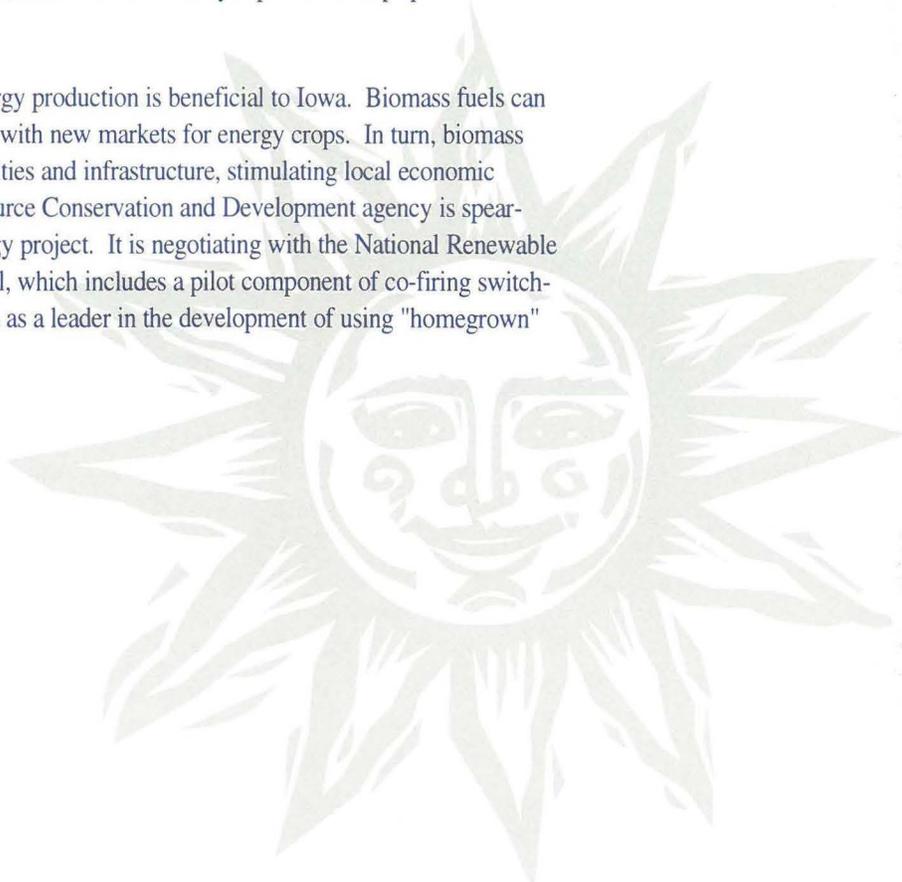
Iowa-Grown Fuels. The Energy Bureau is helping Iowans harness the potential of homegrown, renewable energy resources such as ethanol, biodiesel, wind and biomass. Developing these renewable fuels not only provides power to the state, but reduces dependence on imported energy, creates industries and jobs and protects the environment.

- Ethanol is a locally produced fuel that is renewable and cleaner for the environment. Iowa is a part of a national initiative to build an ethanol "superhighway" for 85% blended ethanol through the Midwest. The DNR is working with the Department of Agriculture and Land Stewardship, and the Iowa Corn Promotion Board to develop the high-blended ethanol refueling sites throughout the state. High-blend ethanol, or E-85, is a blend of 85% ethanol and 15% gasoline.

- The first public demonstration of the soybean oil-based biodiesel continued during FY95 in a joint project between the DNR and the WACO and Washington school districts in southeast Iowa. Four schools in one district use 30-70% blends of biodiesel. The other district's buses serve as a control to allow evaluation of fuel economy and other operating performance. Biodiesel is also being tested at the Iowa Department of Transportation's Boone Maintenance Facility and at Five Seasons Transportation and Parking. Five Seasons, Cedar Rapids' bus department, is using biodiesel along with ethanol injection in all its transit buses. The agency was the recipient of a 1995 Iowa Energy Leadership Award from the DNR.

- The momentum produced by the 1993 Spirit Lake wind turbine project has resulted in almost half a million dollars worth of private investment in wind energy in Iowa during FY95. Schafer Systems, Inc. of Adair, Iowa installed a turbine capable of generating 225 kW of electricity to help power the company's plastic manufacturing. The owners expect to save enough electricity costs to make the generator pay for itself in eight years. A third wind turbine began operating in Nevada, Iowa. The electricity it produces helps power the city's wastewater treatment facility.

- The development of biomass as a feedstock for energy production is beneficial to Iowa. Biomass fuels can create new opportunities for farmers, providing them with new markets for energy crops. In turn, biomass conversion has the potential to spur the need for facilities and infrastructure, stimulating local economic development and job creation. Chariton Valley Resource Conservation and Development agency is spearheading an effort to develop a switchgrass-to-energy project. It is negotiating with the National Renewable Energy Laboratory to take the project to the next level, which includes a pilot component of co-firing switchgrass with coal. This \$2 million effort positions Iowa as a leader in the development of using "homegrown" resources for fuel.



Natural Resources

Forests

The State Forest Nursery at Ames and the satellite nursery at Montrose grew and distributed approximately 3 million, bareroot conservation tree and shrub seedlings to private landowners and government agencies in Iowa. The nursery cooperated with the Iowa Department of Corrections to provide work opportunities for residents and inmates at Newton and Fort Madison institutions. Nursery facilities were also made available to Iowa State University Forestry Department researchers for research in more efficient use of irrigation and fertilizers.

Managers of Iowa's four larger state forests are using a geologic information system to do a better job of protecting sensitive areas, and applying and tracking forestry practices. The system is called "ArcInfo," and is designed to integrate maps and data so that managers can quickly retrieve information. Global positioning technology is also being employed.

Iowa's state forest system is comprised of four large state forests, ranging in size from 7,815 to 11,478 acres and 6 smaller areas of 34 to 314 acres.

Forestry assistance was provided to 9,025 individuals by 12 district foresters, resulting in an additional 36,102 acres being brought under improved forest management, and 6,245 acres of new tree plantings. Training and educational sessions for 563 Iowa woodland owners and business were conducted. District foresters promoted the division's forest stewardship program through management planning, promotion and cost-share assistance with a focus on conversion of CRP lands into permanent forest cover.

Urban Forestry. The division's Urban Forestry Program, in cooperation with the Iowa Urban & Community Forestry Council, provides technical assistance, education training and financial assistance to municipalities and volunteer organizations. During 1995, a total of 272 Iowa communities received direct technical assistance, including completion of 41 comprehensive community tree inventories and management recommendations. Seventy-six Iowa communities were honored by the National Arbor Day Foundation as "Tree City USA" in 1995. An estimated 610,718 trees were planted in Iowa's communities during 1995. The division provided \$25,000 of matching federal funds to 14 local governments to develop sustained community tree management programs. Under contract with the division, Iowa State University Extension Forestry/Horticulture provided up-to-date publications on tree care and expanded the "Community Tree Steward" program into northern and eastern Iowa. Also under contract, Trees Forever, a nonprofit organization, provided community volunteer coordination to 384 citizens groups across the state.

Education. The "Trees for Kids" program, a cooperative tree education and planting program for elementary and secondary schools, completed its sixth year. Working in partnership with the Iowa Nursery & Landscape Association, Iowa Bankers Association, Peoples Natural Gas, MidAmerican Energy, Telephone Pioneers, Trees Forever and the Iowa Wood Industry Association, the division provides free educational materials on trees, and gives the opportunity for a class to receive a free landscape tree for planting during Earth Week. A total 3,824 teachers participated in "Trees for Kids" and its companion, "Trees for Teens" programs, resulting in the establishment of 83,136 seedlings and saplings during 1995. An Arbor Day poster contest for

5th graders was initiated in cooperation with the Telephone Pioneers. Five hundred schools participated in the contest.

Forest Health. The division's forest health program continued monitoring the flood impacts on Iowa trees and forests during 1995. Through the use of aerial sketch mapping over 225,000 acres of forest in Iowa, it was determined that 11,000 acres of Iowa woodlands were killed during the floods of 1993. These aerial flights and ground checking for flood damage were done in conjunction with the division's annual insect and disease monitoring efforts on state and private forest resources. An additional project involved the study of potential disease problems of one of Iowa's most widely planted urban tree, the green ash, in cooperation with Iowa State University Extension Plant Pathology. The DNR maintains a "forest health task force" of agency, university and volunteers advisors.

Fire Protection. In cooperation with Iowa State University fire service, \$116,300 was provided in grant funds to rural fire districts across the state. In addition, the division assisted in acquisition and distribution of excess federal military vehicles and equipment for rural fire protection.

Rural Development. In cooperation with the nine Resource Conservation and Development (RCD) areas, the fourth year of the "Rural Development Through Forestry" (RDTF) program was completed. This program distributed \$700,000 in matching federal funds, to encourage economic development in rural Iowa by promoting the use of our forest resources.

Parks, Recreation and Preserves Division

Seventy-fifth Anniversary of Iowa State Parks.

Iowa's state park system began in 1920 with the dedication of Backbone State Park in Delaware County. In the 75 years since that time the

DNR and its predecessor agencies have acquired and developed 83 areas that are managed by DNR, cities and counties and recognized as either state parks or recreation areas. The anniversary theme was carried throughout the year with special events, banners at each park, a rededication of Backbone, a special symposium held at Wartburg College on Iowa's state parks, and a state fair exhibit that focused on the anniversary. Of all the efforts, the symposium seemed to strike the best response by bringing park staff, researchers and interested citizens together to explore the history and future of parks. Special efforts were also made in 1995 to improve the appearance of the most highly used park areas so that visitor experiences would be more enjoyable.

Four park-to-park bike routes were also established to commemorate the 75th anniversary. Brochures and maps depicting the routes are available from the DNR.

The 75th anniversary drew special attention from the Iowa Legislature. Both houses passed resolutions of support for the anniversary celebration and the Governor signed a special proclamation early in the year proclaiming 1995 the anniversary year. This was followed with a \$500,000 appropriation by the legislature for capital improvements at Backbone State Park. The funds will be used for lake improvements, repairs to the stone and log picnic shelters, and remodeling eight of the sixteen summer cabins in the park. With a nearly \$16,000,000 backlog of capital improvement needs in the state parks, this appropriation was especially welcome.

Renovation and New Construction Continue. Major renovations at Maquoketa Caves State Park continued in 1995. Emphasis was placed this year on rebuilding overused trails to make them safe, permanent and accessible to persons with varying ability. The Sagers Museum building was remodeled making it ready to house an exhibit devoted to the natural history and Native American cultures of Jackson County.

Construction of the Brushy Creek dam and spillway continued with the project nearly 50% complete by year's

end. Other construction at Brushy included roadways in two new campgrounds, a shower building and electrical improvements in the northern campground. Using a crew of inmates from the North Central Correctional Facility in Rockwell City, DNR staff constructed nearly eight miles of multiple use trails in the southern unit at Brushy Creek. Most new development as well as park renovations continue to be funded almost exclusively from the Resource Enhancement and Protection Fund (REAP).

Clean-up of Ledges State Park is Completed. Severely damaged by the flood of 1993, many believed the famous and scenic Leges canyon was damaged beyond repair. A contract for silt removal in the canyon took several months to complete. However, it was well worth the wait. With final grading, seeding and tree planting, the canyon has been restored to its pre-flood beauty.

Another well-known facility damaged by the flood was the Walnut Woods lodge. In 1995, this picturesque building was repaired and remodeled. Its kitchen and restroom facilities have been modernized, making it more usable than before.

DNR Authorized to Participate in Wastewater Treatment Revolving Loan Fund. Much of the \$16,000,000 backlog in park repair needs consists of sewer line, septic systems and waste treatment lagoons that need upgrading. At the request of the DNR, the legislature enacted authorization for the DNR to participate in the SRLF program which provides low interest loans to municipalities for wastewater treatment system needs. The DNR will borrow from the fund to address its highest priority projects and repay the loans with a portion of camping and cabin rental receipts.

Raccoon River Regional Park Opens. Working cooperatively, the city of West Des Moines and the DNR opened the new 700 acre Raccoon River Regional Park. Tucked within the corporate limits of West Des Moines, the area is being jointly developed by the DNR, the city and private organizations to provide a wide variety of outdoor recreation experiences. By the end of 1995, construction had begun or was completed on a boat ramp providing access to a 300-acre lake, a youth soccer complex, a beach, an adult softball complex, road, and parking lots. The city has agreed to assume long-term management of the facility and recently received a Resource Enhancement and Protection Fund (REAP) grant to purchase additional land around the area. Future improvements will include areas of wildlife habitat, trails, concessions and picnic spots.

Completion of Statewide Comprehensive Outdoor Recreation Plan (SCORP) and Park Visitor Survey. Every five years, the DNR revises and updates its statewide comprehensive outdoor recreation plan, SCORP. Originally required as a condition of federal grants for park acquisition and improvements, SCORP has become an important inventory of all recreation facilities in Iowa, an analysis of recreation supply and demand, and an identifier of recreation issues in Iowa considered to be critical from a public policy perspective. SCORP is widely used by park, recreation and conservation officials at all levels of government.

In addition, every five years the DNR conducts a survey of state park visitors to determine their level of satisfaction with the development, care and management of state parks. The survey was conducted in 1995 and results again show high levels of satisfaction among park visitors with Iowa state parks.

Expansion of Parks. Three state parks were expanded in 1995. Lake Anita saw the addition of 80 acres which will provide for wildlife habitat, upland game hunting and protection of the lake's watershed. Springbrook State Recreation Area also was increased by 80 acres. This land will be managed for wildlife and public hunting. Echo Valley State Park saw a very small addition which resolved long-standing confusion over access into the park.

Court Challenge to DNR's Forest Management in Parks. The District Court heard a request for damages against the DNR for removal of trees in state parks and recreation areas. The court ruled that the law cited in the case was intended to apply to trespass and the illegal harvest of trees, and did not apply to a state agency managing its land. The plaintiffs have appealed to the State Supreme Court.

Iowa state parks and recreation areas encompass over 56,000 acres of land and water. A large percentage of that land was cleared by early settlers and is now covered with second growth timber that ranges from young stands of trees in the early stages of plant succession to more mature forests nearing a climax state.

The DNR manages forests on its parks and recreation areas for multiple benefits and to maintain a mosaic of forest types. Management of parks and their forests are guided by the DNR's Forest Ecosystem Management Guide as well as an ecosystem management plan for each park. The goals of forest management in parks and recreation areas include aesthetics, natural area protection, outdoor recreation, wildlife, demonstration and forest products. Generating forest products on parks and recreation areas includes the use of high value black walnut trees.

Iowa-grown black walnut trees have exceptional value and are recognized internationally for their quality. Iowa's state parks contain thousands of walnut trees. Each year, a number of trees die or begin to rapidly decline due to age, disease, stress or storm damage. A relatively small number of them are commercially harvested. The income, which averages \$30,000 per year, helps defray the general fund appropriations used to maintain parks. Society benefits from the furniture and other wood products possessing the endurance and natural beauty of genuine wood. More importantly, each dollar received from these trees contributes to Iowa's forest economy by at least a multiplier of seven. Thus, the \$30,000 average easily generates an additional \$210,000 for Iowa's forest economy.

Fish

Vegetation control, shoreline riprap, placement of stake beds, pallet structures, broken concrete and brush piles were methods used to complete aquatic habitat improvement projects at 26 lakes during FY95. They were Lake Ahquabi, Littlefield Lake, Morman Trail Lake, Orient Lake, Barge Lake, Middle Sabula Lake, Lower Sabula Lake, George Wyth Lake, Lake Keomah, Indian Lake, Hickory Grove Lake, Lake Darling, Lake MacBride, DeSoto Bend, Lake Wapello, Centerville Reservoir, Coralville Reservoir, Lake Iowa, East Lake, South Hartman Pond, Koutney Pond, Big Creek Lake, Spring Lake, Crystal Lake, Deer Creek Lake and Crawford Creek Lake. Nontraditional habitat; "Bio-Reef" fish attractors were placed in Heron Pond (Pool 12, Mississippi River backwater lake) and Berkley Fish Hab modules were placed in Black Hawk lake. The Lansing Big Lake (Pool 10) Habitat Rehabilitation and Enhancement Project was completed to protect the ecosystem from sedimentation by effecting closures of three major channels leading into the lake. Habitat planning included the planting of 6,000 poplar, green ash and silver maple seedlings in the future basin of the Lost Grove Lake site.

Bank stabilization, half-log structures, bankhides, "lunker hides" and woody vegetation removal along streams were habitat activities conducted at the following 14 trout streams: Little Mill Creek, Spring Branch Creek, Brush Creek, Big Mill Creek, South Bear Creek, Mestad Springs, Trout Run Creek, Coldwater Creek, Coon Creek, French Creek, Middle Bear Creek, North Bear Creek, North Cedar Creek and Sny Magill Creek.

The fish culture facilities reared and stocked more than 129 million fish into public waters of Iowa. This total included 350,000 trout, 111 million walleye, 2.3 million northern pike and 1.2 million channel catfish.

Fish population renovation projects were completed at Big Marsh Pond (Butler County); two ponds in the

Deer Creek Lake watershed, one pond in Lake Darling State Park; six pits on the Nishna Recreation Area (Shelby County) and eight ponds in the Lake Ahquabi watershed. 300 flathead catfish were stocked in DeSoto Bend Lake to control a stunted bullhead and carp fishery.

One-hundred ninety fishing clinics/outdoor classrooms were sponsored or co-sponsored by fisheries personnel. Staff made presentations at 115 meetings or organized groups. The bureau provided information for 341 newspapers articles and 48 magazine articles. A total of 188 radio programs and 27 television interviews were presented during the year.

Twenty-three acres were purchased on the Lost Grove Lake site (Scott County.) Sixty acres were purchased on the Lake Shawtee site (Fremont County.)

The commercial harvest of food-fish on the Mississippi River by 24 license owners totaled 2,637,000 pounds. Four licensed owners reported harvesting about 4,000 pounds of fish from the Missouri River. The economic value of commercial food-fish harvested from both border rivers was estimated at approximately \$697,000. Contracted commercial anglers harvested more than 894,000 pounds of fish, valued in excess of \$121,000. Forty-three Iowa licensees reported a freshwater mussel harvest of 220,000 pounds of live and dead shells for little change since last year. The estimated value of this fishery was \$217,000.

A handicap-accessible fishing pier was constructed on Volga Lake (Fayette County.) Angler use facilities (pier and jetties) and fish habitat were constructed at Three Mile Lake (Union County.) A fish culture research facility was constructed at Rathbun Fish Hatchery.

Wildlife

The Iowa River Corridor Project was launched as a cooperative venture between the Natural Resource Conservation Service (NRCS), U.S. Fish and Wildlife Service (FWS), and Iowa DNR. The goal of the program is to provide floodplain management alternatives to agricultural producers who no longer wish to maintain marginal farmland susceptible to flooding. Through the Wetland Reserve Program, producers can now choose to quit farming their land and convert it to native habitats such as wetland and forest. In return, the NRCS pays producers a one-time payment based on the appraised value of the land. Producers can also sell their remaining interest in these lands to the FWS or the DNR. Landowner interest in the program is high with the potential for creating up to 30,000 acres of new wetland habitat. The FWS, NRCS, and DNR are expected to spend more than \$2 million over the next three years implementing this program.

The Prairie Pothole Joint Venture continues to be one of this states most successful programs for restoring wetland and upland habitat to north-central Iowa. Once again, the DNR was able to attract \$2 million of FWS money to acquire 2,013 acres of land. These public lands termed waterfowl production areas, will be managed by the DNR as wildlife production and harvest areas. To date, FWS funding has been used to purchase over 8,500 acres of land at a cost of just over \$9.5 million.

Funding provided by Pheasants Forever, Ducks Unlimited, Iowa Natural Heritage Foundation and the Wild Turkey Federation is valued at over \$1 million annually and is used to acquire public lands and develop wildlife habitat on private lands.

Four North American Waterfowl Conservation Act projects are currently being implemented by the Wildlife Bureau. These projects match federal money with the state and private money to purchase and restore wetlands within specified watersheds in Iowa. The Iowa Great Lakes (Dickinson county) project is nearing completion and has resulted in the acquisition and protection of 769 acres of wetland and adjacent upland at a total cost of \$990,000. Approximately 70% of the funding for this project was provided by federal and pri-

vate conservation group funding sources. The remaining three projects; Lost Island-Trumbull Lake (Clay and Palo Alto counties), Eagle Lake (Winnebago and Hancock counties) and Cedar River Ecosystem (Linn and Benton counties) were approved for funding this year. Efforts are currently underway to identify suitable lands for wetland protection and acquisition within each of these project boundaries. Total federal funding committed to these three projects over the next two years amounts to \$1.3 million.

Iowa's productive lands continue to provide excellent wildlife populations which attract resident and nonresident hunters. Approximately 390,000 residents and 44,000 nonresident hunting licenses were purchased to pursue deer, wild turkey, pheasants and other game birds and animals. The pheasant harvest totaled about 1.25 million birds; making Iowa the second highest harvest state in the nation behind South Dakota. Hunters took 87,000 deer during the fall season and 11,900 wild turkeys during the spring and fall seasons. Hunter success rates for these two species remain among the highest in the nation.

The Wildlife Diversity Program initiated major efforts within the state on behalf of nonhunted wildlife species. The reintroduction of trumpeter swans was started with the release of 14 birds at the Kettleston-Hogsback Wildlife Area near Spirit Lake. The goal of this program is to establish 15 nesting pairs in Iowa by the year 2003. Sharp-tailed grouse were released in western Iowa with the goals of establishing a breeding population in the Loess Hills. Former releases of river otters and peregrine falcons are being monitored and appear to be adapting to their new environment. The number of prairie chicken booming grounds increased from three to seven indicating that reintroduction efforts are beginning to pay off.

Wildlife Bureau field personnel manage 340 public wildlife areas, totaling 270,600 acres. Private land habitat work accomplishments include the restoration of 55 wetlands totaling 813 acres, and the preparation of 198 wildlife affecting 11,153 acres. Ducks Unlimited funding was used to develop a 44-acre wetland at the Black Hawk Wildlife Area.

Law Enforcement

Through Iowa's Turn-In Poachers (TIP) program, a total of 353 TIP calls were processed during the

year. These calls from private citizens, resulted in 38 successful cases and 67 citations were issued. A total of \$6,000 was approved for reward payment by the private TIP group, TIP of Iowa, Inc.

Educational and Recreational Classes

	Hunter Education	Snowmobile Safety	Boating Safety	Fur Harvester	ATV	Bow
Instructors certified	111	7	0	3	0	10
Classes conducted	444	30	15	3	10	15
Students trained	14,055	852*	534*	36	30	398

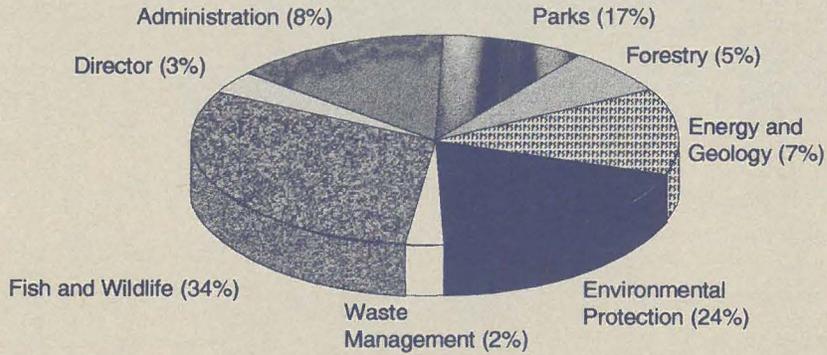
*includes some home-study courses

Liquidate Damages \$96,662 Collected

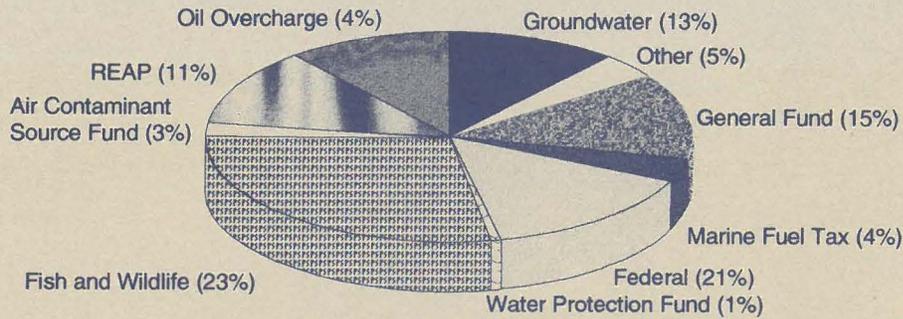
Species	Number
Deer	66
Fish	162
Furbearer	30
Rabbit	5
Raccoon	42
Squirrel	37
Turkey	16
Upland Game	47
Waterfowl	94
Other	4
Total	503

FY95 BUDGET

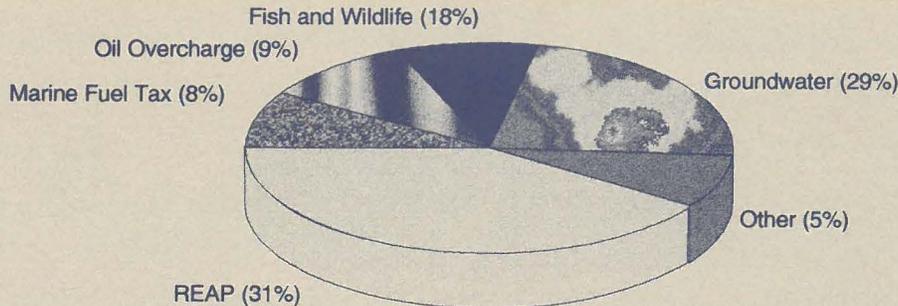
OPERATIONAL EXPENDITURES by Division \$56,275,268



Sources of Funds For TOTAL EXPENDITURES \$87,901,295



Sources of Funds For CAPITAL AND SPECIAL PURPOSE EXPENDITURES \$31,626,027



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