

68-676

HC
107
.18
A66
1987/88

IOWA'S ENVIRONMENT

ITS CONDITION, ISSUES AND FUTURE

FY 1988 Annual Report

STATE LIBRARY OF IOWA
DES MOINES, IOWA 50319



Iowa Department of Natural Resources
Larry J. Wilson, Director

TABLE OF CONTENTS

DIRECTOR'S MESSAGE	3	FORESTS	6
COMMISSIONS AND MEMBERS	3	OPEN SPACES	7
ENVIRONMENTAL ISSUES	4	PARKS	7
GROUNDWATER	4	PRESERVES	8
UNDERGROUND STORAGE TANKS	5	WILDLIFE AND FISHERIES	9
SURFACE WATER	5	WILDLIFE	9
AIR	5	FISHERIES	9
WASTE	6	ENERGY	10
NATURAL RESOURCE LANDS	6	ORGANIZATIONAL CHART	11
GEOLOGY	6	BUDGET	12





DIRECTOR'S MESSAGE

Between July 1, 1987, and June 30, 1988, the Department of Natural Resources met many new challenges with a great amount of success, due to the enthusiasm and professionalism of its staff.

First among our successes is the continuing effort in groundwater protection. Last year, the DNR provided the Legislature with "The Iowa Groundwater Protection Strategy -- 1987," the blueprint from which the Groundwater Protection Act was built. This year, the first year of implementing the act, major initiatives were begun in groundwater protection research and demonstration, underground tank regulation and waste management. Next year, I look forward to the DNR taking on more responsibility in the area of nonpoint contamination of groundwater, and implementing new education programs on groundwater in our school systems.

During the past year, we took a hard look at the status and future of Iowa's "open spaces" and made a recommendation to the Legislature that Iowa should set some practical goals for

significant increases in the amount of open spaces available to the public. And in the area of wetlands protection, we made the commitment to acquire 30,000 acres of additional wetlands by the year 2000 as our contribution in turning around the alarming decline of waterfowl populations in North America.

The two-year-old park user fee program underwent a major change in that free permits were eliminated and cost of the annual permit reduced from \$10 to \$5.50. As we expected, revenues remained virtually the same, a little more than \$1 million, but the responsibility for fee payment was more evenly distributed among those who used the resource.

Through DNR energy management programs for schools, hospitals and state-operated buildings, Iowa taxpayers have saved more than \$2 million this year.

In 1988, environmental issues began to emerge as a public policy priority. I expect the momentum of interest to continue as we all examine the possible regional impacts and local policy responses to issues such as global climate change, acid rain and ozone layer depletion.

Please take the time to review this report for the many other activities undertaken by the DNR, all of which were aimed at protecting and conserving our environment and improving the quality of life in Iowa.

Natural Resource Commission

Sam Kennedy, *Chairperson*, Clear Lake
Douglas R. Smalley, *Vice-Chairperson*, Des Moines
(Mrs.) Marion J. Patterson, *Secretary*, Cedar Rapids
Thomas E. Spahn, Dubuque
John D. Field, Hamburg
William B. Ridout, Estherville
Richard C. Young, Waterloo

Environmental Protection Commission

Robert W. Schlutz, *Chairperson*, Columbus Junction
Richard L. Timmerman, *Vice-Chairperson*, Johnston
Charlotte Mohr, *Secretary*, Eldridge
Catherine Dunn, Dubuque
Donna M. Hammitt, Woodbine
Gary C. Priebe, Algona
Nancy Lee A. Siebenmann, Cedar Rapids
Clark A. Yeager, Ottumwa
Keith E. Uhl, Des Moines

State Preserves Advisory Board

Paul A. Christiansen, *Chairperson*, Mt. Vernon
(Mrs.) Dorothy Baringer, Woodburn
Ronald Kuntz, Des Moines
Jean C. Prior, Iowa City
Clifton A. Rooney, Des Moines
Kay Simpson, Des Moines
Larry J. Wilson, Des Moines

STATE LIBRARY OF IOWA



3 1723 00102 2359



ENVIRONMENTAL ISSUES

GROUNDWATER

During this first year of the implementation of the 1987 Iowa Groundwater Protection Act, groundwater protection became one of the DNR's broadest program areas, involving at least half of the agency's 22 bureaus and an estimated expenditure of \$1 million. As directed by the act, "research, monitoring and demonstration" were the primary focuses of activities, with "prevention of further contamination" being the goal. With the DNR as the lead agency to implement the act, other state agencies, such as the Department of Agriculture and Land Stewardship, the Department of Health and the three Regents universities, have also had major responsibilities. Three research and grant centers were begun: The Leopold Center for Sustainable Agriculture at Iowa State, The Center for Health Effects of Environmental Contamination at the University of Iowa, and the Small Business Assistance Center at the University of Northern

Iowa, all of which have provided assistance to the DNR in implementing the act.

With data going back to the 1950s, the Big Spring basin of northeastern Iowa continues to be one of the world's most comprehensive groundwater/watershed study areas which illustrates the relationship between land use and groundwater quality. Additional research and demonstration activities, related to agricultural "best" management practices, were instituted at more than 300 sites across the state.

Results of a one-time test of 853 public water supplies in the state, in 1987, demonstrated the need for concern: 64 percent contained detectable levels of synthetic chemicals and 14 percent contained detectable levels of pesticides. Although none of the samples showed an immediate threat to human health, nine of the public water supply systems had substance levels in excess of those that are recommended for long-term human consumption. These supply systems have or are taking steps to reduce this contamination.

An extensive testing program was begun to assess the condition of water supplies in rural Iowa from individual wells and the health impact on the rural population; results are expected in late 1989.

Agricultural drainage wells were required to be registered with the department by January 1, 1988, or the owner would not qualify for potential cost-sharing management practices for these wells in the future. By that time, 326 ag drainage wells were registered. The deadline was then extended to September 30, 1988, with an additional 20 wells registered. The Department of Agriculture and Land Stewardship is to work with the owners of these wells to eliminate contamination of groundwater from them by 1992.

A series of 14 public hearings were begun around Iowa to gather public opinion on the role of groundwater protection standards. With much staff research and the experiences of

other states incorporated into the standards report, it was presented in December 1988 to members of the 73rd General Assembly with the following recommendations: ***Education and research should continue to be the focus of groundwater protection efforts, but enforcement authority should be granted to the DNR to address nonpoint groundwater contamination problems.***

UNDERGROUND STORAGE TANKS

Although the DNR began work on regulating underground storage tanks before July 1987, the Groundwater Protection Act did much to expand the department's role in addressing this major source of groundwater contamination. The U.S. Environmental Protection Agency released information which estimated that at least 35 percent of the underground tanks in the nation were leaking chemicals into the groundwater. There are 28,000 underground tanks registered with the DNR. A total of 229 site cleanups were begun in FY 1988, and it is expected that this annual figure will increase as leak detection requirements reveal tanks which need to be repaired or replaced.

In the coming year, the state will adopt rules which incorporate federal standards. It is expected the 1989 session of the Legislature will address the issue of financial assurance to cover the cost of correcting environmental damage.

SURFACE WATER

The report, "Water Quality In Iowa During 1986 and 1987," revealed that 55 percent of Iowa lakes met the state's environmental or recreational goals. An additional 42 percent partially met these goals. However, 99 percent of Iowa streams did not

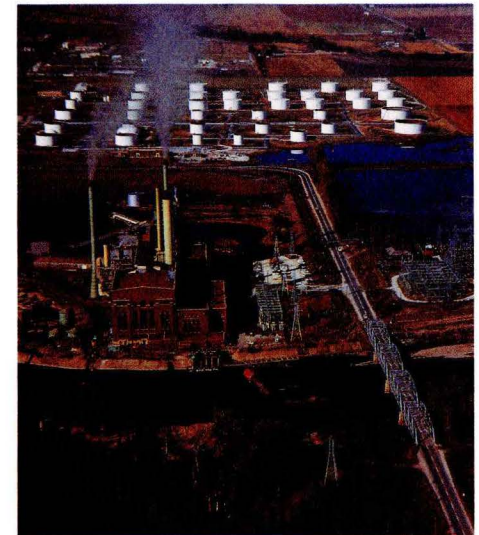
meet the standards, either partially or wholly. Sediment and nutrient nonpoint pollution from agricultural operations continue to be the primary problems.

While remedies to these problems may be difficult, the state's 1979 strategy to control agricultural runoff, and educational programs for farmers continue to be valid solutions.

The annual analysis of fish tissue samples from 21 sites across the state showed no contaminations in excess of the Food and Drug Administration's action levels for 40 different possible contaminants, other than one sample showing 390 ppb of chlordane (300 ppb is the action limit) from the Des Moines River on the southeast side of Des Moines. Subsequent sampling has indicated all samples were below health advisory levels.

AIR

Air quality in Iowa is generally quite good. In all but two sites, and then for only a short time, the state's quality of air exceeded federal health standards. With no problems attributed to automobiles, as experienced in the more populated areas of the country, the entire state has bettered the standards for ozone, nitrogen dioxide and sulfur dioxide. ***Continued monitoring and emission limitations, if necessary, will ensure compliance in the future.***



WASTE

With the creation of a new division, Waste Management Authority, the DNR began a major effort to promote alternatives to traditional methods of waste disposal. The leading concerns include: protection of groundwater from leachate contamination; loss of resources and energy which are buried as wastes; and loss of land to landfill projects.

One of the nation's most comprehensive consumer awareness programs on household hazardous wastes was instituted. The program requires licensing of retailers who sell materials classified as household hazardous materials (HHMs) and retailer provision of consumer information about HHMs. Funds from licensing fees will go for toxic cleanup days in communities across the state in which the public can bring HHMs to a central location for legal disposal by contractors who specialize in such wastes. Pilot toxic cleanup days were conducted at Cedar Rapids and Dubuque in 1986 and public participation was enthusiastic.

Grants will be issued in the coming years for demonstration projects to enlighten local waste officials on how to reduce their waste problems and maintain a healthy environment. Assistance to small businesses will be available from the newly established Small Business Assistance Center at the University of Northern Iowa. A review of the 400 past disposal sites will occur to see if they pose any hazards and public education programs will be made available to educators to better prepare the next generation of Iowans.



NATURAL RESOURCE LANDS

GEOLOGY

A natural resource geographic information system was included as a requirement of the 1987 Groundwater Protection Act. This system will consist of multiple data layers such as locations of underground storage tanks, land-use information, park boundaries, pheasant habitat distribution, abandoned coal mines and a host of other information concerning past and present uses of Iowa land. Work is continuing on this system which, once complete, will have a variety of uses.

After drilling 17,851 feet, AMOCO plugged Iowa's deepest oil well in October 1987 near Halibur in Carroll County. While no oil was reached, nearly \$20 million was invested by the oil company in its search of the Midcontinent Rift System.

Other projects resulting from the Groundwater Act are: ongoing water quality studies at the Big Spring demonstration project; the production of maps that illustrate the vulnerability of groundwater to contamination; participation in several aspects of the integrated farm management demonstration projects; and incorporation of a more sophisticated system of managing data concerning Iowa's coal resources.

FORESTS

The Conservation Reserve Program has provided an excellent opportunity for landowners to take highly erodible ground out of production and to plant trees on portions of this ground. Foresters continued encouraging such plantings where possible.

DNR staff planted 5,743 acres of trees in FY 1988. With the cooperation of landowners, an additional 28,277 acres of

forest were brought under improved management. Iowa's newest state forest, Loess Hills State Forest, was expanded by 593 acres. Nearly four million seedlings were produced by State Forest Nursery operations.

The main goal of Iowa's forestry program is to expand the resource base to 3,000,000 acres in order to provide sufficient forest land to meet all of Iowa's needs including forest products, recreation, wildlife and enhanced quality of life for Iowa's citizens.



OPEN SPACES

The 72nd General Assembly, in 1987, directed the department to prepare an Open Spaces Plan. The intent of this plan is to have 10 percent of the state under some form of public protection by the year 2000. There are approximately 625,000 acres of existing protected open spaces, mostly in fee title ownership. In order to achieve the 10 percent goal, an addi-

tional three million acres must be protected. A multi-discipline advisory committee participated in the preparation of the plan.

The 10 percent goal translates into an average of 275,000 additional protected acres, annually. The Open Spaces Plan recognized and supported the intent of the legislation, but given the amount of funds and staff required to meet this goal, the plan concluded that more than 10 years are required to meet it. ***The DNR plan recommends the amount of protected open space be doubled over the next 11 years, with a commitment to an aggressive, ongoing protection program in the years beyond 2000 aimed ultimately at achieving the 10 percent protection level.***

PARKS

State park and recreation area facilities remain available and in relatively good condition for public use and enjoyment. In addition, a wide range of interpretive programs are presented to both visitors as well as organizations and institutions in the local community.

State park usage has increased markedly in recent years. Since 1986, for example, general state park and recreation area visitation and camping activity have increased nearly 20 percent. The state park user permit program has brought in significant funding which has been used for the long overdue renovation and replacement of many state park facilities. Public acceptance of the program has grown since its inception in 1986 and with this acceptance has come support. Finally, significant capital improvement projects have been implemented in key state parks through the use of funding made available from the Iowa Lottery.

The most pressing parks concern is the continuing lack of adequate operational funding resulting in more increasingly deteriorating facilities, obsolete and unsafe equipment, and the

lack of traditional, "routine" maintenance, typically performed by seasonal personnel.

Effective future management of Iowa's state parks can be achieved through redistribution of existing budgetary and staff resources to improve levels of management in the most critical areas, rather than spreading the existing resources thinly over the entire system. A plan has been developed to accomplish this based upon careful analysis of the needs and justification for management of each park.

It is anticipated that significant savings will result from the new plan. The funding will be used to enhance the level of operational efforts throughout the state park system through enhanced levels of seasonal personnel, additional equipment, and facility maintenance budgets. Implementation of the plan



began in late 1988. It is anticipated that the plan will be fully implemented within two years.

PRESERVES

The state preserves system, as of June 30, 1988, included 81 preserves with a total area of about 7,700 acres. Individual preserves range in size from less than 1 to 845 acres. One new preserve, Steele Prairie, a 200-acre native prairie in Cherokee County, was dedicated during the year. It was purchased with The Nature Conservancy through the lottery cost-share program.

A tract of land in Clayton County was purchased to protect the largest known population of northern wild monkshod, a threatened plant species. Surveys for the western prairie fringed orchid on two state preserves more than doubled the number of known plants of this federal candidate species in Iowa. The official list of Iowa's threatened and endangered species was revised and a new category for "species of special concern" was added.

Extensive surveys for "fens"; a unique type of spring-fed, peaty wetland, were conducted in northern Iowa. Several high-quality fens and numerous rare plant species associated with them were found through a combined study of soil maps, aerial photographs and field visits. Native prairies on state-owned lands in northwest Iowa were inventoried and evaluated.

The conversion of natural areas to agricultural, industrial, urban and other uses continues to reduce the number of potential preserves. When these activities occur next to an existing preserve, they may threaten its integrity.

A 10-year plan to provide direction and prioritize types of preserves which should be added to the system is set for completion by 1990.

WILDLIFE AND FISHERIES

WILDLIFE

During the year, hunters enjoyed above average success with a number of wildlife species. An all-time record deer harvest of 76,000 deer occurred. Spring turkey hunters harvested a record 7,300 gobblers. Resident and non-resident pheasant hunters also harvested about 1.4 million birds, once again making Iowa the leading pheasant harvest state in the nation.



Ongoing private land cost-share programs resulted in the establishment of 54 shelterbelts and 360 wildlife food plots totaling approximately 2,000 acres. Both of these cost-share programs are available in the northern portion of the state.

A new program was initiated in cooperation with the U.S. Fish and Wildlife Service. The program, called the North American Waterfowl Management Plan, is a federal initiative with the goal of increasing waterfowl habitat throughout the U.S. and Canada. Waterfowl populations are facing record low numbers as a result of drought and habitat destruction. It is

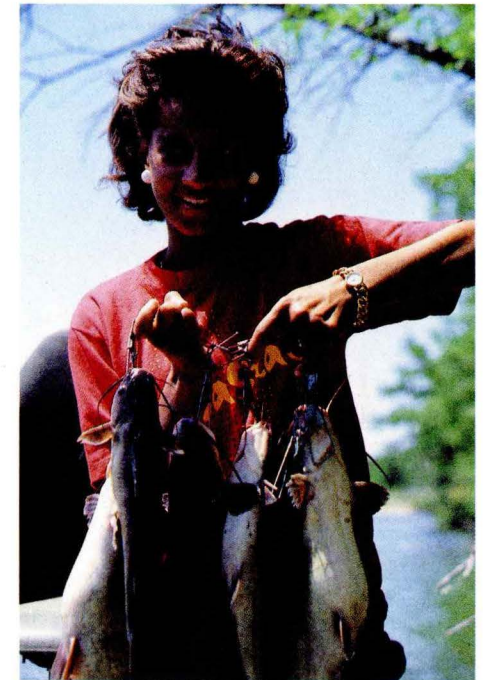
important that biologists work with the various county groups such as county conservation boards, the ASCS Committee, and Soil Conservation Service in an attempt to improve wildlife resources on private land.

Plans have been developed which outline goals for Iowa's Prairie Pothole Joint Venture in northwest and north-central Iowa to restore 500 to 600 acres of wetlands annually until the year 2000. These plans identify specific project sites to preserve and restore wetlands within the 35 counties and outline management techniques necessary to increase waterfowl production.

Next year's goals are to purchase 2,000 acres of wetlands and associated uplands, 1,000 acres of timberland and 800 acres uplands adjacent to existing wildlife areas.

FISHERIES

The overall quality of Iowa's water is the most critical issue to face fishery resource managers in the remainder of this century. The most critical factors are eutrophication, sedimentation and super-saturated gases. Although these factors represent independent threats to the aquatic resource, they are closely interrelated and in combination the effect has accelerated. Continued application of agricultural fertilizers and



other chemicals to the land will cause irreparable damage to water quality and the aquatic environment. Super-saturation of dissolved gases is causing ever-increasing problems in the water quality in our fish hatcheries. Treatment of the water is now mandatory for most fish culture facilities.

DNR fish hatcheries have the technology and the mechanisms to strip supersaturated gases from the incoming water and replace it with the proper amounts of oxygen, **but the long-range solution will only come with agricultural land stabilization through better farming practices. This can be accomplished through continued educational efforts and perhaps tax or other financial incentives to land-owners.**

In the meantime, new lake projects will only be built by the DNR where watershed acres are under state control and good water quality is assured.

The DNR initiated a planning effort that would delineate specific goals which would benefit Iowa anglers and recreational boaters...those who are paying for the program through federal aid. **The established goals were separated into three distinct groups based upon the length of time required for their completion. The first projects are one-time capital improvement projects like the reconstruction of the Decorah Trout Hatchery which will be completed in 1989 or the installation of a multi-level water intake for the Rathbun Hatchery to be done by 1990.**

Short- to medium-range projects are those that will be concluded in three to eight years. These projects include fishing piers at 10 lakes, fishing jetties in eight lakes and the installation of fish cleaning stations at high-use locations. Lake aeration systems will be added to five additional lakes.

Longer range programs include construction of the following new lakes during the next few years: Deer

Creek Lake, Plymouth County, 44 acres; Lake Shawtee, Fremont County, 347 acres; Lost Grove Lake, Scott County, 350 acres; Whitewater Lake, Dubuque County, 112 acres.

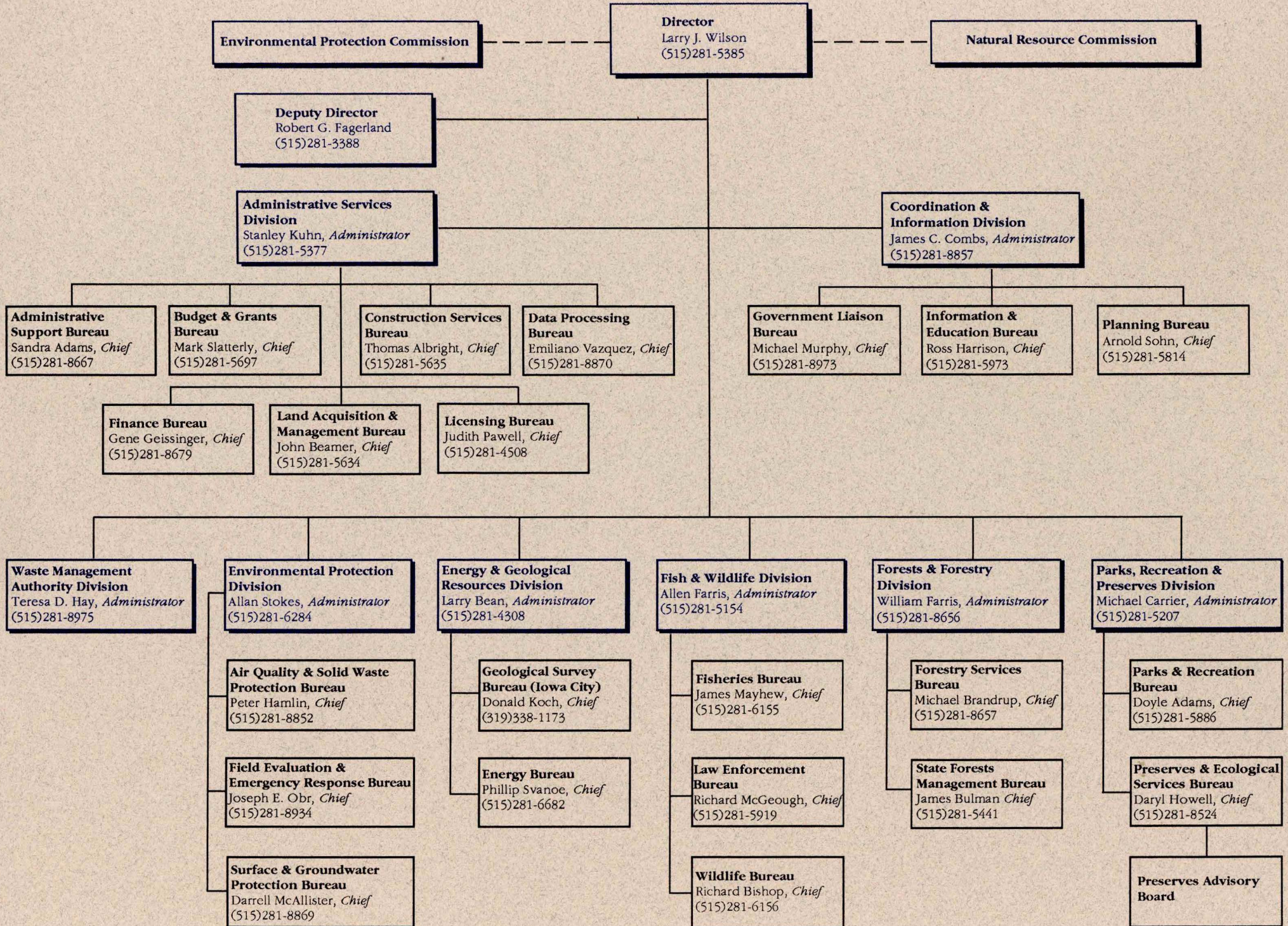
ENERGY

Energy, the environment and economic development are closely linked. Concern over issues such as acid rain, the greenhouse effect and groundwater protection have required a re-examination of the state's policies. As the department prepares a comprehensive energy resource plan for Iowa, all alternatives are being examined to determine the best route to develop, manage and use energy resources in Iowa.

Among the significant results of the past year was that Iowans saved more than \$1 billion in energy costs, compared to 1985, which was the last year before the collapse in crude oil prices. Lower energy prices as well as continuing investments in efficiency and conservation, were responsible for this savings to Iowa's energy consumers.

DNR efforts are currently being directed at developing policies that will reduce the amount of fossil fuels being burned through improvements in efficiency, and through cost-effective environmentally acceptable alternatives.

Priority future program areas in the energy conservation area include: least-cost and life-cycle planning; building efficiency programs for schools, hospitals, state facilities, and nonprofit organizations; alternative vehicle fuel demonstrations and promotions, energy from waste and from renewable sources and others.



Environmental Protection Commission

Director
Larry J. Wilson
(515)281-5385

Natural Resource Commission

Deputy Director
Robert G. Fagerland
(515)281-3388

Administrative Services Division
Stanley Kuhn, Administrator
(515)281-5377

Coordination & Information Division
James C. Combs, Administrator
(515)281-8857

Administrative Support Bureau
Sandra Adams, Chief
(515)281-8667

Budget & Grants Bureau
Mark Slatterly, Chief
(515)281-5697

Construction Services Bureau
Thomas Albright, Chief
(515)281-5635

Data Processing Bureau
Emiliano Vazquez, Chief
(515)281-8870

Government Liaison Bureau
Michael Murphy, Chief
(515)281-8973

Information & Education Bureau
Ross Harrison, Chief
(515)281-5973

Planning Bureau
Arnold Sohn, Chief
(515)281-5814

Finance Bureau
Gene Geissinger, Chief
(515)281-8679

Land Acquisition & Management Bureau
John Beamer, Chief
(515)281-5634

Licensing Bureau
Judith Pawell, Chief
(515)281-4508

Waste Management Authority Division
Teresa D. Hay, Administrator
(515)281-8975

Environmental Protection Division
Allan Stokes, Administrator
(515)281-6284

Energy & Geological Resources Division
Larry Bean, Administrator
(515)281-4308

Fish & Wildlife Division
Allen Farris, Administrator
(515)281-5154

Forests & Forestry Division
William Farris, Administrator
(515)281-8656

Parks, Recreation & Preserves Division
Michael Carrier, Administrator
(515)281-5207

Air Quality & Solid Waste Protection Bureau
Peter Hamlin, Chief
(515)281-8852

Field Evaluation & Emergency Response Bureau
Joseph E. Obr, Chief
(515)281-8934

Surface & Groundwater Protection Bureau
Darrell McAllister, Chief
(515)281-8869

Geological Survey Bureau (Iowa City)
Donald Koch, Chief
(319)338-1173

Energy Bureau
Phillip Svanoec, Chief
(515)281-6682

Fisheries Bureau
James Mayhew, Chief
(515)281-6155

Law Enforcement Bureau
Richard McGeough, Chief
(515)281-5919

Wildlife Bureau
Richard Bishop, Chief
(515)281-6156

Forestry Services Bureau
Michael Brandrup, Chief
(515)281-8657

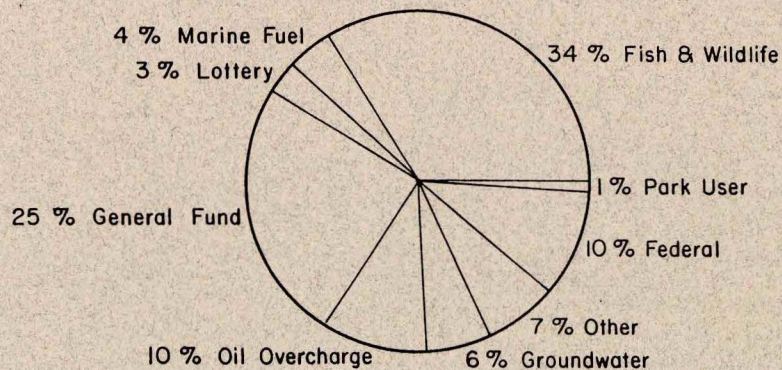
State Forests Management Bureau
James Bulman, Chief
(515)281-5441

Parks & Recreation Bureau
Doyle Adams, Chief
(515)281-5886

Preserves & Ecological Services Bureau
Daryl Howell, Chief
(515)281-8524

Preserves Advisory Board

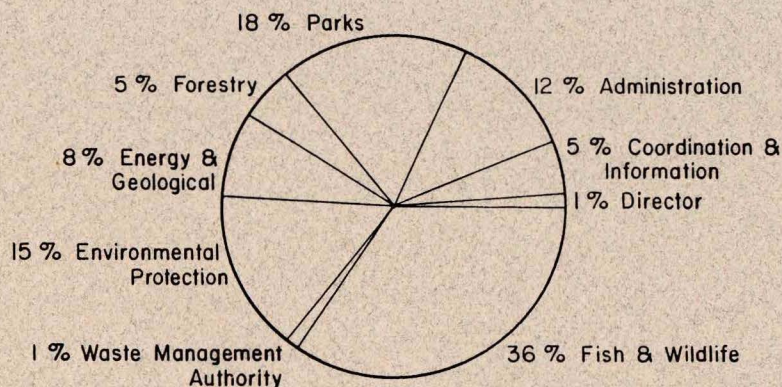
Sources of Funds For
Total Expenditures
\$52,390,063



Operational Expenditures

by Division

\$35,711,294



Sources of Funds For
Capital & Special Purpose Expenditures
\$16,678,769

