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STATE OF IOWA
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Iowa
a place to grow

Stanley C. Grant
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Orville J. Van Eck
Associate State Geologist

Donald L. Koch
Assistant State Geologist

November 10, 1977

To the Recipient of this Data Catalog:

The Iowa Water Resources Data System (IWARDS) is being developed in connection with the state water plan. This Data Catalog is a response to objectives identified by the water plan Task Force on Data Base and Needs. It is the result of work by Iowa Geological Survey staff funded for water planning, and of work by the IWARDS Advisory Committee representing the various natural resources agencies. Two kinds of activity are reflected here. First, background and bibliographic information has been compiled, to serve as a reference for those engaged in water management, planning and research in Iowa. Second, a design and development effort has been underway for an organizational and data processing system to improve accessibility to water data.

If approval and funding are received following completion of the water plan framework study, IWARDS will be implemented as a data support service and management tool for the legislature and the natural resources agencies formulating and maintaining the water plan. IWARDS will then provide computer programs for data base management; training and technical assistance for users; a data catalog, index and bibliography clearing house; and demonstration studies in data processing techniques.

IWARDS is a multi-agency effort guided by an Advisory Committee appointed by directors of the natural resource agencies. The Advisory Committee is responsible for making the many decisions necessary for smooth conduct of the project, and conveying to the project the policies and positions of the agencies they represent. This committee is currently addressing the IWARDS scope of services, work program, organization, policies and procedures. As IWARDS is implemented they will review standards for data accuracy and documentation, coding conventions, priorities for data storage in a commonly accessible data bank, and other issues for which inter-agency consensus is required for efficient and effective operation.

As the IWARDS project progresses additional sections and volumes will be added to the Data Catalog. We therefore urge recipients to fill out and return the accompanying questionnaire.

Please complete this form and return it to Iowa Geological Survey if you are retaining a copy of this IWARDS Data Catalog. Additions and updates will be mailed to you as they become available.

1. Name _____

2. Date _____

3. Organization _____

4. Number of Copies _____

5. Address _____

Please note: An evaluation questionnaire regarding the bibliography is appended to that section. Your attention to that questionnaire would also be appreciated.

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6. Will you wish to receive Volume II (Computer System User's Guide) and Volume III (Index to IWARDS Data Files)? Yes No Vol. only

7. Will you wish to be on the IWARDS mailing list for incidental publications, brochures, etc.? Yes No

8. Please make any comments or suggestions you wish, regarding IWARDS and the Data Catalog.

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From: _____

Affix
postage
here.

Data Catalog
Iowa Geological Survey
123 North Capitol
Iowa City, IA 52240

iwards

data catalog

Iowa Water Resources Data System August 1977 Volume 1

Prepared by
Systems Management



IOWA GEOLOGICAL SURVEY

Compiled by Jayne Harbaugh, Charles Huelsbeck, Suzan Stewart

GENERAL INFORMATION

This volume has been prepared in an attempt to improve the availability of information on water resources. It is expected that this information will be used primarily by water resource planners and researchers, but much of the material has been designed for the use of the layman with an interest in water resources. This first volume is a compendium of information on Iowa's water laws, publications on water resources, and government agency responsibilities in the water area. Two additional volumes are planned. Volume two will be a guide for users of the IWARDS computer system. Volume three will contain descriptions of the information stored in the IWARDS files.

Descriptions of the sections of this volume are as follows:

Section I - A. Directory of Water-related Agencies. The responsibilities of state, federal and interstate government agencies in the area of water resources have been summarized. The address and the name of the agency head are included for ready reference.

Section I - B. Index to Iowa Water Laws and Administrative Regulations. This index serves as a selected locator of sections from the *Code of Iowa*, the *Iowa Administrative Code*, and several uncoded rules and temporary regulations on water use, management, and related resources.

Section I - C. Bibliography of Iowa Water Resources. All publications containing information on Iowa's water resources are referenced alphabetically by author. A keyword index is included to provide access to the publications by subject.

Section I - D. Inventory of Water Data Collection Programs in Iowa.

Preparation of materials for this section of the catalog are currently under way and should be available for distribution by August. The intention of the inventory is to identify water data collection activities or programs within the state and present them in overview. The information to be included will identify the agencies or institutions involved, the authority and rationales for the data collection program(s), the nature of the data being collected, its purpose, the program's sampling network, the period of record and frequency of sampling, the format of data storage, and the manner in which the information is distributed, if distribution is made.

Section I - E. Design of the Iowa Water Resources Data System.

Covers the functional and organizational design of the IWARDS System, including statement of goals and objectives, background information, and the proposed design for the IWARDS computerized storage, retrieval, and processing system for water resources data. The background information will include data needs of resources related agencies, availability of hardware, software, and machine readable data. The proposed design will cover such aspects as organizational structure, request response modes, standards for geographic place coding of data, procedures for use of the IWARDS system, provisions for data security, controls on accuracy of data, financial structure, and other issues related to implementation and operation of the system. This document is targeted for completion in January 1978.

Directory of Water-related Agencies

COOPERATIVE EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS

110 Curtis Hall, Iowa State University
Ames, IA 50011 (515) 294-4576

Dr. Charles E. Donhowe, Director and Dean of University Extension.

Authority: The off-campus educational programs of Iowa State University's Cooperative Extension Service are authorized by federal and state laws. Among the broad areas of programs authorized are agricultural production, management, and natural resources development. The regents of Iowa State University govern the administration of the service, cooperatively funded by federal (Smith-Lever Act) and state-county (County Agricultural Extension Act) governments.

Organization: Staff members of the colleges of Agriculture, Home Economics, and Veterinary Medicine serve as extension specialists in the various program areas. The programs and resources of the Extension Service are coordinated by state leaders of the projects in cooperation with Service and University administration. The educational and organizational phases of the work are brought to all areas of the state by county and area extension workers. "Many departments work with some areas of natural resource development," particularly agricultural engineering, agronomy economics, entomology, sociology, and zoology.

Programs and Activities: Typical activities in the various programs are engineering aspects of soil and water use and management, conservation education, land use as related to zoning and recreational development, wildlife conservation and biology, and educating communities in developing public policies concerning resource development. Special 4-H projects in conservation are also developed.

Members of the Iowa State Water Resources Institute also serve with the Cooperative Extension Service. Iowa State University also has representation on the State Coordinating Group for Water and Related Land Resources Planning.

ENGINEERING RESEARCH INSTITUTE

104 Marston Hall, Iowa State University
Ames, IA 50011 (515) 294-2336

Dr. Paul Peterson, Director

Authority: Established in 1904, the Institute is the research organization within the Iowa State University College of Engineering.

Organization: The Director of the Institute exercises responsibility to the Dean of the College of Engineering, and his staff is chiefly from the Engineering faculty, who spend part of their time in research.

Programs and Activities: Sanitary Engineering is an important research area in the Institute, and it divides into water supply, water pollution control, hydrology, and water resources. Projects within these four areas are sponsored by the state, the National Institute of Health, the National Animal Disease Laboratory of the U.S. Department of Agriculture, and private industry.

Significant research projects have been prediction of rainfall runoff for several Iowa watersheds, flood potential of the Des Moines River basin, hydraulics of circular settling tanks determined by model prototype comparisons, tank detention time efficiency in the chlorination of small water supplies, iron removal from natural and synthetic water using diatomite filters, iron removal vs. depth in a sand filter, the effect of rate disturbances on the qualities of filtered water, design of municipal diatomite filters for iron removal, selection of optimum filtration rates for sand filters, properties and treatment of pond water supplies, and filtration and chlorination of small water supplies.

IOWA AGRICULTURE AND HOME ECONOMICS EXPERIMENT STATION

104 Curtiss Hall, Iowa State University
Ames, IA 50011 (515) 294-4762

Dr. Lee R. Kolmer, Director

Dr. John P. Mahlstedt, Associate Director

Authority: When Iowa State University began in the 1860's, agricultural research in crops, horticulture, and livestock took place on the original farm. In 1887 the Hatch Act provided federal funds for agricultural

research with the creation of the Agriculture and Home Economics Experiment Station. Continued state and private funding have made possible the current program of basic and applied research.

Organization: The director of the station is the Dean of Agriculture at Iowa State University. He delegates most administrative responsibility to the associate and assistant directors. Research occurs both on the I.S.U. campus and at cooperating farms around the state. These farms are so selected that special problems on a local basis can be studied. Cooperation is also maintained with federal and other state agencies and experiment stations throughout the U.S.

Programs and Activities: The research program has several hundred projects, both basic and applied. Most I.S.U. faculty members are engaged in the program in such areas as water and watersheds, river basins, air and climate, and soil. Some water-related investigations in recent years are in erosion control and water conservation, infiltration of water into soil, the relation between soil and water conservation and tillage machinery, quantitative description of watershed parameters and how they relate to runoff, physical and economic study of watersheds in relation to soil and water conservation, surface drainage-fertility experiment on corn, water table frequencies for tilled land, tile hydraulics, reservoir sedimentation, development of runoff relationships for watershed with much storage, and measured and predicted storm runoff from agricultural watersheds.

IOWA DEPARTMENT OF ENVIRONMENTAL QUALITY

3920 Delaware Avenue, Box 3326
Des Moines, IA 50316 (515) 265-8134
Larry Crane, Executive Director
V. R. Ewing, Administration Officer

Authority: Created in 1972 by the 64th. General Assembly, the department has the power to investigate complaints received either directly or by one of its divisions concerning "violations of public health, safety or welfare requirements imposed by statutes, rules or ordinances" of the state or its political subdivisions. For such investigations the department "may enter at any reasonable time in and upon any private or public property, except private dwelling" to determine if any provisions of chapter 455B of the *Code* have been violated.

Organization, Programs, and Activities: Written permits and licenses, as well as contracts for environmentally-related projects, are issued by the department through the following divisions: air quality management, land quality management, and water quality management.

The department limits air, ground, and surface-water pollution by controlling "discharges of contaminants. . . disposal of solid, hazardous, and radioactive wastes, and. . . use and disposal of chemicals." (See also *Code of Iowa* 1975, chap. 455B)

Specifically, the Air Quality Commission controls open burning and particulates "emissions, fugitive dust, visible emissions, and sulfur oxide emissions." The construction of any equipment that "will control or cause air pollution" requires a prior permit "detailing emission limitations." Under contract with D.E.Q., the State Hygienic Laboratory performs a comprehensive air monitoring program.

The Chemical Technology Commission administers regulations "banning DDT, heptachlor as a fly or mosquito control, lindane vaporizers" and the manner in which inorganic arsenic is used. Veterinarians must report all livestock poisoning cases to both the Commission and the Veterinary Diagnostic Laboratory at Iowa State University in Ames.

The Solid Waste Disposal Commission administers rules on minimum requirements for county, city, and town solid waste disposal projects. The Commission also supervises the handling of hazardous materials to prevent spills and dangerous disposal and conducts the radiation emergency response plan for safe disposal of radioactive materials. A litter control program is also one of its responsibilities.

The Water Quality Commission sets contamination and discharge limits for surface waters and reviews plans for water supply and waste water treatment plants. Under contract with D.E.Q., the State Hygienic Laboratory monitors surface water quality. The Commission appoints a five-member board to oversee the certification of water supply and waste water treatment operators. All public water suppliers must submit routine samples of water to the Commission in order to assure safety. The Commission also administers state and federal grants for construction of municipal waste water treatment facilities.

IOWA DEPARTMENT OF SOIL CONSERVATION

Grimes State Office Building
East Fourteenth & Grand Avenue
Des Moines, IA 50319 (515) 281-5851
William H. Greiner, Director
Clare Russie, Water Resources Planner

Authority: Created in 1939 by the 48th. General Assembly as the State Soil Conservation Committee with authority to direct the organization of soil conservation districts, the Department has responsibility for administering the Iowa soil conservation laws. The Department "administers the state cost-share program for assisting landowners to establish permanent conservation practices, and is responsible for licensing and regulating all mining operations in the state."

The Department also administers "those parts of Section 208 of the Federal Water Pollution Control Act amendments of 1972 (Public Law 92-500) dealing with statewide planning for dealing with nonpoint sources of pollution. The . . . Committee also approves or disapproves soil loss limit regulations established by soil conservation districts in accordance with provisions of the Sediment Control Law" of 1971. The Department represents the governor and state regarding watershed applications under Public Law 566. (See also Code of Iowa, Sect. 467A.4)

Organization: The current committee structure evolved from Iowa's Conservancy District Act of 1971 dividing the state into six conservancy districts along natural watershed boundaries. Six of the eight voting members of the committee must be farmers, each residing in a separate conservancy district. One of the two at-large members represents cities; the other, the mining industry. The five *ex officio* members are state agency officials, such as the Secretary of Agriculture. The U.S. Department of Agriculture and the Iowa County Engineers' Association each provide an advisor to the Committee, whose voting members are appointed to six-year overlapping terms by the governor. The Department of Soil Conservation has divisions of conservancy districts, soil conservation, and mines and minerals, the last including a volunteer land rehabilitation advisory board.

Programs and Activities: The Department assists the 100 district soil conservation commissioners in implementing their programs, maintains liaison and coordinates programs between districts, maintains liaison with other state agencies and the U.S. Soil Conservation Service, obtains assistance and cooperation from federal, state, and local agencies, and provides certain financial aid to districts. In addition, the Department assists in developing watersheds and reviews and makes recommendations "to the governor for approval or disapproval of Federal Resource, Conservation and Development Projects."

IOWA DEPARTMENT OF TRANSPORTATION

Ames, Iowa 50010 (515) 232-7251
Victor Preisser, Director

Authority: Created in 1974 by the 65th. General Assembly, the Department has the power to carry out a comprehensive transportation policy, as approved by the 66th. General Assembly in 1975, to support the creation of an adequate, safe, and efficient multi-modal transportation system, both public and private.

Organization: The Department of Transportation Commissioners, appointed by the governor with senate confirmation, select a director, who coordinates the functions of divisions for aeronautics, highways, public transit, river transportation, motor vehicles, railroads, administration, planning and research, management review, general counsel, and the transportation regulation board.

Programs and Activities: Supported with federal funding beginning in 1934 under the Hayden-Cartwright Act and broadened under the Federal Aid Highway Act of 1962, Iowa's transportation planning has expanded from that of future highway projects to laying the groundwork for liaison among the various transportation modes under a continuing comprehensive planning process of cooperation between state and local communities. For more than fifteen years Iowa has used a Needs Study that classifies the highway system functionally in order to assign appropriate design standards to each road based on its potential use, future year traffic volume, and terrain considerations.

Iowa has started "a comprehensive multi-modal needs study to achieve total statewide transportation planning" for air, inland waterway, rail, public transit, road and street, and pipeline transport. This multi-modal approach is expected to "evolve recommendations concerning transportation investment programs as well as identifying the socio-economic and environmental ramifications of alternative investment decisions." (See also Iowa Department of Transportation, 1976, *Trans Plan '76*)

IOWA DEVELOPMENT COMMISSION

250 Jewett Building
Tenth Street & Grand Avenue
Des Moines, IA 50303 (515) 281-3251
Del Van Horn, Director

Authority: Created by the 51st. General Assembly, the commission began in 1945 with the power to enter into contracts necessary to perform its duties. In collecting and assembling information, the commission is required to cooperate with other state "boards, commissions, agencies, and institutions" and may arrange to have research done from funds appropriated to the commission.

Organization: The commission has divisions of agricultural development and promotion, community betterment, industrial development, international matters, public information, resource and support, and travel development.

Programs and Activities: The Commission focuses "on the economic growth of the state, achieved in an orderly fashion" and aims "to maintain continued recognition of Iowa's greatness in agriculture, to aid in the development of its rapidly growing industrial economy, and to promote its assets" in travel and recreation.

Its research activities record "Iowa's accomplishments in agriculture and assessments of its assets in industrial development," and evaluate "changing conditions which affect Iowa's economic future."

The industrial development division aids manufacturers already in Iowa, attracts new industries, and aids and represents communities wishing "to diversify their economy through the addition of manufacturing operations," and cooperates with local development groups and chambers of commerce "to create a favorable industrial climate." There is also "close liaison . . . at the executive level with manufacturing firms throughout the nation," as well as with consulting firms and industrial development groups.

The public information division promotes "favorable public opinion for Iowa, recognition of its accomplishments in agriculture and industry" and develops national awareness "of Iowa's cultural, social, and economic advantages." The agricultural division both enhances Iowa's agricultural image and promotes "the sale of agricultural products," both within the state and throughout the nation. The farmer's economic standards are improved by coordination and development of good marketing programs with the cooperation of "farm organizations, agricultural associations, other state institutions and industrial groups." Information is provided to those inquiring about Iowa agriculture.

The travel development division gives information on Iowa's recreation-vacation facilities and "assists communities in promoting their events and accommodations for visitors . . . through participation in recreation and travel expositions . . . publications, special projects and other methods."

IOWA GEOLOGICAL SURVEY

123 North Capitol Street
Iowa City, IA 52242 (319) 338-1173
Dr. Stanley C. Grant, Director and State Geologist

Authority: Created as a permanent state agency by the 24th. General Assembly in 1892, the Survey collects, studies, interprets and reports information on geology, soils, timber, streams, mineral, and other natural resources.

Organization: Under the direction of the Geological Board, which includes the Governor, the State Auditor, the Presidents of the University of Iowa, Iowa State University, and the Iowa Academy of Science, the Survey Director is the State Geologist, who is also Adjunct Professor of Geology at Iowa State University and the University of Iowa.

Programs and Activities: Programs are developed "to locate, identify, measure and evaluate mineral resources and geologic formations." The Survey assigns field parties "to map areas that may involve a county or quadrangle or a specific rock formation such as limestone or sandstone. . . ." Chemical and mineralogical analysis are made of rock samples and cuttings collected. Significant programs are mapping outcropping of bedrock and glacial materials, coal, and other minerals, as well as maintaining collections of drillers' logs, geophysical logs, and cores and cuttings of wells drilled for water, oil or gas. The Survey publishes numerous reports of its research containing "basic data on all phases of its programs, and furnishes data and advice for water supplies and the identification of occurrence of mineral resources and geological formations."

As authorized by Section 305.8, *Code of Iowa*, the Survey cooperates with the Water Resources Division of the U.S. Geological Survey in cost-sharing programs to collect and disseminate data on water wells and levels, streamflow and sediment loads, lake levels, and other hydraulic data. Records of drilling wells for water, oil, or gas are also kept. Through the voluntary cooperation of drillers, logs and cuttings on water wells have been maintained since the 1930's. The oil and gas conservation law of 1963 requires keeping logs, cores and cuttings for wells drilled for oil and gas. Reports on file are used regularly by drillers, engineers, hydrologists, industries, and householders seeking supplies of underground water. Under chapter 84, *Code of Iowa* 1962, the state geologist is the oil and gas administrator.

IOWA INSTITUTE OF HYDRAULIC RESEARCH
403 Hydraulics Laboratory
University of Iowa, Iowa City, IA 52242 (319) 353-4692
John F. Kennedy, Director

Organization: Organized in 1931, the Institute is internationally recognized for fluids engineering research and education, currently in relation to environmental pollution, bioengineering, naval hydrodynamics, river mechanics, ice hydraulics, hydrology, water resources, hydraulic structures, fluid mechanics, power generation, and advanced instrumentation and data handling for fluids research.

Programs and Activities: The three separate laboratories of the Institute contain the latest equipment for both undergraduate and graduate laboratory instruction as well as basic and applied research in hydraulics and fluid mechanics. There are an IBM 1800 data acquisition and control system for on-line acquisition and analysis of experimental data, a ship model towing tank, various flumes and wind tunnels, a refrigerated flume and ice-force testing facilities, an environmental flow facility for modeling of atmospheric flows, two large basins for conduct of river and coastal model studies, and special air-flow apparatus and liquid flow circuits.

The institute has more than twenty research engineers, most of whom teach in the University of Iowa College of Engineering. A list of the published research of the institute is available.

IOWA NATURAL RESOURCES COUNCIL
Grimes State Office Building
East Fourteenth & Grand Avenue
Des Moines, IA 50319 (515) 281-5914
James Webb, Director
Louis F. Gieseke, Water Administrator

Authority: As a policy "to correlate and vest in a single agency the powers of the state with regard to flood control and the orderly development, wise use, protection and conservation of the water resources of the state," the 53rd. General Assembly created the Natural Resources Council in 1949 "with the duty and authority to establish and enforce an appropriate comprehensive state-wide plan for the control, utilization, and protection of the surface and ground-water resources of the state." (chap. 455A, *Code of Iowa* 1962) In 1957 the General Assembly assigned the Council to administer a water use permit system and in 1963, through the state geologist's office, the administration of an oil and gas conservation law that was also designed to conserve and protect the state's water resources. The 1965 legislature made clearer some "comprehensive planning functions of the Council" by enacting a law regulating flood plains and "authorizing the Council to establish and enforce regulations for the orderly development and wise use of the flood plains of any river or stream within the state."

Organization: The nine council members appointed by the Governor serve six-year overlapping terms and must be qualified only by their "fitness to discharge the duties of office without regard to their political affiliation." The director, water commissioner, and deputies administering the water permit system are appointed by the Council and serve at its pleasure. With Council approval, the director may engage technical and other personnel as needed.

Programs and Activities: The Council considers "applications, plans, and specifications for projects in or on the flood plains or floodways of rivers or streams within the state" to include "construction of mill dams and races and annual inspection and licensing thereof, reviews and makes official comments on Federal water resources projects affecting the State, administers the water use permit system and the oil and gas conservation Act, and formulates flood management programs and a comprehensive state-wide water resources plan."

The Council director also serves as chairman of the State Coordinating Group for Water and Related Land Resources Planning, as a member of the Watershed Advisory Council and assists the Office of Civil Defense in coordinating the state with the Federal Office of Emergency Planning on floods and other disasters. He is also on the State Natural Beauty Committee.

IOWA OFFICE FOR PLANNING AND PROGRAMMING

523 East Twelfth Street, Capitol Annex

Des Moines, IA 50319 (515) 281-3711

Robert F. Tyson, Director

Authority: Created by Executive Order in November 1966, O.P.P. was made a unit of the Governor's office by the 63rd. General Assembly in 1969. The *Code of Iowa*, Chap. 7A, authorizes the O.P.P. to "coordinate the development of physical, economic, and human resource programs and to promote efficient and economic utilization of federal, state, local, and private resources."

Organization: The Office has divisions of planning support, municipal affairs, manpower, developmental disabilities, economic affairs, federal funding and other fiscal matters, health manpower planning, highway safety, human resources and community development, and youth services.

Programs and Activities: The comprehensive service of O.P.P. includes coordination, research, planning, and program management for the Governor's office as well as technical assistance to strengthen planning and management in local governments and their councils. The Office also manages certain federal grants funded to the Governor and distributed chiefly to other state and local agencies.

Important activities of O.P.P. include preparing comprehensive statewide recommendations and plans for economic policies, manpower training and development, youth services, and developmental disabilities. The Office also is a resource center for effective decision-making by the legislature, state officials and agencies, and local governments; it compiles and keeps the latest information on current and pending private and federal aid for state and local agencies and assists them in making applications for grants.

The O.P.P. provides a clearinghouse for the review and coordination of federal grant applications and the preparation of "reports of comments upon them in accordance with intergovernmental relations programs of federal and state governments." The Office is responsible for comprehensive manpower planning, the community development board, and coordinating the National Highway Safety Act. Upon request, staff service is provided to committees which the Governor appoints, such as the Governor's Educational Advisory Committee.

The Office also makes such reports and gives such assistance as the Governor or legislature may request.

IOWA STATE CONSERVATION COMMISSION

Fourth and Walnut Streets

Des Moines, IA 50319 (515) 281-5145

Fred A. Piewert, Director

Authority: Created by the 46th. General Assembly in 1935, the Commission protects and preserves fish and wildlife, has jurisdiction over state-owned meandered lakes and streams, administers laws and programs concerning state waters, parks, forests and forestry preserves, stream and lake access areas, state-owned artificial and natural lakes, water navigation, and formulates and implements state plans for recreational developments that include supervision of county conservation boards and water recreation areas.

Organization: The commissioners, appointed by the Governor, must be "seven citizens of the state who are interested in and have substantial knowledge of the subjects" under their authority. The commissioners have overlapping six-year terms, and no more than four may be of the same political party when appointed. The Commission appoints a director, who administers divisions of fish and wild life, lands and waters, and administration, each headed by a division chief.

Programs and Activities: The Commission supervises 95 state parks and preserves totaling over 30,000 acres, 209 fish and wildlife areas exceeding 270,000 acres total, 7 state forest areas and a forest nursery, their total exceeding 20,000 acres, 72 natural lakes and 24 artificial lakes totaling 46,386 acres, 900 miles of inland meandered streams and 600 miles of boundary streams, nine fish hatcheries, and a wildlife exhibit area. The Commission is the review agency for plans to create water recreation areas, supervises the work of county conservation boards, develops comprehensive plans, and has authority to accept funds from and cooperate with agencies of the federal government for recreational development. The comprehensive Outdoor Recreation Plan is a major function of the Commission's Planning and Coordination Section.

The License Section orders, distributes, and accounts for all licenses, permits, and tags that the Commission issues, such as fishing, hunting, and boating registration, most of which are applied for through one's county recorder's office. Dock permits are applied for directly to the Conservation Commission's Waters Section in Des Moines.

IOWA STATE DEPARTMENT OF HEALTH

Lucas State Office Building
Des Moines, IA 50319 (515) 281-5787
Norman L. Pawlewski, Commissioner

Authority: Created by the Seventeenth General Assembly in 1880, the state Board of Health, as policy-making body for the department of health, has the authority and obligation "to adopt, promulgate, amend, and repeal rules and regulations, and advise or make recommendations to the Governor, general assembly, and commissioners of Public Health relative to public health, hygiene, and sanitation."

Organization: The nine-member Board of Health is appointed by the Governor, as is the Commissioner of Public Health, who selects the chiefs and other personnel for the divisions on Alcoholism, Community Health, Disease Prevention, Health Facilities, Personal and Family Health, Records and Statistics, and advisory councils for construction of mental health centers and for hospitals and related health facilities.

Programs and Activities: Regarding water-related matters, the department inspects public water supplies, sewer systems, sewage treatment plants, and garbage and refuse disposal plants and determines the type of installation and operation thereof.

IOWA STATE WATER RESOURCES RESEARCH INSTITUTE

355 Town Engineering Building, Iowa State University,
Ames, IA 50011 (515) 294-8921
Dr. Merwin D. Dougal, Director
Dr. Daniel J. Zaffarano, Administrative Coordinator

Authority: Established in 1964 under the federal Water Resources Research Act as the official agency "to accept funds and administer the federal program" therein authorized, the Institute coordinates "with the Office of Water Research and Technology, the U.S. Department of the Interior, and with regional organizations of the water institutes in the Missouri River basin and the Upper Mississippi River basin" in implementing an interdisciplinary water research program.

Organization: Guided by the I.S.W.R.R.I. Council of seven Iowa State University professors and four at the University of Iowa representing a cross section of water-related disciplines in the sciences, humanities, and engineering branches of education, research, and extension, the Institute is advised by a committee of technical experts from state and federal water agencies. Faculty participants in the program represent the sciences, engineering, sociology, economics, and law in a "framework within which the water resources of the nation are developed for beneficial use."

Programs and Activities: The programs help to solve "water problems in Iowa, the Midwest, and the nation" with the goals of "identifying research needs, conducting research, training students," providing information, and publishing the research.

Research projects on many subjects are sponsored, with proposals generally originating with faculty under O.W.R.T. or I.S.W.R.R.I. guidelines and priorities. Emphasis is on support of graduate students at the master's and doctoral levels to promote their knowledge and skills in water-related areas. A research-team approach identifies further needs and conducts required research. There is close coordination with research groups at other Iowa colleges and universities.

The Institute has close association with multi-disciplinary water resources graduate programs at Iowa State and the University of Iowa and sponsors conferences, symposia, and workshops. It also publishes the results of research and all symposia.

MISSOURI RIVER BASIN COMMISSION

Suite 403, 10050 Regency Circle

Omaha, Nebraska 68116

402-397-5714

John W. Neuberger, Chairman

Authority: The U.S. Water Resources Council, pursuant to the Water Resources Planning Act of 1965: Title 11, Section 204 (2) (PL 89-80), requested the establishment of the Missouri River Basin Commission. Executive Order 1165B, signed on March 22, 1972, established the Commission, whose responsibility includes the state of Nebraska, most of South Dakota and Montana, and parts of North Dakota, Colorado, Wyoming, Kansas, Minnesota, Iowa, and Missouri.

Organization: The MRBC has one member from each state, one from each of ten related federal agencies, the Yellowstone River Compact Commission and the Big Blue River Compact Administration. Mr. William Brabham is the Commissioner from Iowa. There is also a Canadian observer. In addition to the chairman, the Omaha headquarters has a staff of twenty. The MRBC submits its plans to the U.S. Water Resources Council, which reviews the documents and transmits its recommendations for the authorization of federal projects to Congress.

Programs and Activities: The MRBC is a leading agency for planning federal, state, interstate, local, and non-governmental development of water resources. Because the MRBC coordinates water resources planning for ten basin states and the federal government, Commission activities emphasize joint participation. Such participation is achieved principally through priority listings, state and federal program reviews, and the Commission's regular quarterly meetings.

Because the federal enabling statute requires river basin commissions to recommend a long-range schedule of priorities, the bylaws of the MRBC incorporate this mandate. The commission has created guidelines and an evaluation method to determine priorities, which are described in the *Second Annual Report, Basin Priority Listings of Proposed Water and Related Land Resources Activities* (1975). The report recommends "for basinwide priority ranking of proposals submitted by the states in these six categories of water and related land resources activities: 1) basic data collection, 2) Planning related research, 3) specific studies, 4) regional or river basin planning, 5) implementation studies, and 6) implementation programs or projects.

The development and management of water and land resources related to it in the Missouri River Basin are guided by a comprehensive coordinated joint plan (CCJP). The CCJP combines the results of federal, state, interstate, local and non-governmental planning.

In the 1975 fiscal year, CCJP activities included the Platte River Basin Level B Study in Nebraska (initiated in 1972), an update of the 1969 Missouri River Basin Framework Study, and the regional portion of the National Assessment of U.S. water and related land resources implemented by the U.S. Water Resources Council. MRBC studies especially try to encourage public input and participation through citizens' advisory committees and public hearings.

In 1976 the MRBC launched two new programs: a CCJP budget request and the Yellowstone River Basin and Adjacent Coal Field Area Level B Study in Montana, Wyoming, and North Dakota.

STATE HYGIENIC LABORATORY

270 Medical Laboratories Building, University of Iowa,
Iowa City, IA 52242 (319) 353-5990
Director: Dr. W. J. Hausler, Jr.
Associate Director: Dr. Rolfe Hahn

Authority: Created as the State Bacteriological Laboratory by the 30th. General Assembly in 1904, the Hygienic Laboratory received its present name in 1975. In 1913 the 35th. General Assembly authorized creation of a water analysis service.

Organization: The Laboratory has departments of administrative, consultative, diagnostic, and environmental science services, the last of which has a water and milk section. The branch laboratory in Des Moines contains a water quality section and a water laboratory appraisal program "in support of the Department of Environmental Quality and its enforcement responsibility for municipal water supplies."

Programs and Activities: As a permanent part of the University of Iowa College of Medicine, the Laboratory makes or arranges for "bacteriological and chemical examinations of water, and necessary investigations by both laboratory and field work to determine the source of epidemics of disease, and to suggest methods of overcoming and preventing the recurrence of the same, whenever requested to do so by any state institution or by any citizen, school or municipality when in the judgment of the local board of health the same is necessary in the interest of the public health and for the purpose of preventing epidemics of disease." (*Code of Iowa 1975, Sec. 263.7*)

The branch laboratory in Des Moines is engaged chiefly in water analysis determining water quality, whereas the major work of the laboratory at the University of Iowa is analysis of communicable disease bacteria. The serology of venereal diseases is an important part of this analysis.

Staff members also publish the results of their research in scientific journals and lecture on water and related topics to schools, colleges and other organizations. A monthly newsletter, *Hotline*, is published primarily for clinical laboratories in Iowa.

U.S. DEPARTMENT OF AGRICULTURE, AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE

210 Walnut St.
Des Moines, Iowa 50309
515-284-4210
Mr. Dale H. Awtry, Executive Director

Authority: The ASCS was established on June 5, 1961 by the Secretary of Agriculture to replace several agencies that had related duties. The Agricultural Conservation Program was authorized by Congress in 1936.

Organization: Operations are supervised by a state committee appointed by the U.S. Secretary of Agriculture. The executive director handles day-to-day operations and is also responsible for appointing District Directors and District Compliance Supervisors.

There are ASCS operations in all of Iowa's counties. On the community level, each community (usually each township) selects three farmers in annual elections to serve as ASCS community committeemen. The community committeemen meet annually to elect members to the county committees. Each county employs an office manager who oversees other staff members in the county.

Programs and Activities: The objectives of the ASCS are to 1) keep an adequate, but not surplus, supply of farm products available for domestic use at reasonable prices, for export needs and for reserves; 2) provide farmers with a fair income; and 3) conserve and improve the nation's soil, water and wildlife resources.

U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

210 Walnut Street
Des Moines, Iowa 50309
515-284-4260
William J. Brune, State Conservationist

Authority: The Soil Conservation Service was established under the authority of The Soil Conservation Act of 1935 (16USC 590-f). The agency is responsible for developing and carrying out a national soil and water conservation program in cooperation with landowners and operators, government agencies and community and regional planning groups. SCS also assists in agricultural pollution control, environmental development and rural community development.

Organization: Iowa is divided into 7 soil conservation areas. Each area has an office staffed with an area conservationist and other specialists. There are 100 county-level district offices (there are two in Pottawattamie County), each staffed with an area conservationist. There are also currently 18 soil survey offices in Iowa, each involved in the production of one soil survey.

Programs and Activities: SCS implements its programs by providing technical assistance to locally organized and operated conservation districts, local sponsors of watershed protection projects and resource conservation and development projects, and other groups and individuals.

SCS offers technical assistance to landowners to carry out soil and water conservation activities. The types of activities chosen to implement a conservation plan are chosen by the local district. SCS will provide the district with technical information on soil capabilities and other resource data, alternative potential landuses, and methods of developing a plan for installing land treatment measures.

SCS is charged with producing county soil surveys and with inventorying and monitoring to provide soil, water and related resource data and resource use trends for government planning. Federal, state and county funds are pooled to finance soil surveys. Of Iowa's 99 counties, 21 have completed modern soil surveys and field work is complete in 27 others.

In cooperation with state and local agencies, SCS administers river basin surveys and investigations. The Iowa-Cedar River Basin study has been completed and the Southern Iowa River Basin study is underway. It is expected that the four remaining river basins in Iowa will be studied in the future.

SCS has responsibility for investigating watershed projects developed by local organizations and aiding in the development of watershed work plans. There are 16 completed watershed projects in Iowa and 28 under construction. The agency also cooperates with other organizations in the installation of planned works to reduce erosion, floodwater, and sediment damage and works that conserve, develop and dispose of water. Watershed protection loans are available from the FmHA to SCS-approved projects.

The resource conservation and development (RC&D) program administered by SCS helps communities pool their resources to improve their economic and resource base and accelerate multi-county planning. Development of RC&D projects may be aided by FmHA loans. In Iowa, four RC&D projects are operating.

U.S. Department of Agriculture, Farmers Home Administration

873 Federal Building
Des Moines, Iowa 50309
515-284-4121
Mr. Robert Pim, State Director

Authority: The FmHA operates under three principal statutes: Consolidated Farmers Home Administration Act of 1961 (7 U.S.C. 121), as amended by the Act of October 7, 1965 (79 Stat. 931), Title V of the Housing Act of 1949 (42 U.S.C. 1471); and part A, title III of the Economic Opportunity Act of 1964 (42 U.S.C. 2851).

Organization: FmHA is an agency within the Department of Agriculture. Rural Iowans may apply for FmHA loans at local FmHA county offices which are usually located in county seats. There are 51 county offices in Iowa. Each area has a committee made up of three individuals, at least two of whom are farmers. The committee certifies eligible applicants; approves the amounts of the loans and reviews borrowers' progress.

Programs and Activities: The FmHA provides credit for rural Americans who are unable to get credit from other sources at reasonable rates and terms. The loans are made with money borrowed from the U.S. Treasury. Certificates of Beneficial Ownership representing actual loans made to borrowers are sold to private investors under insurance agreements. FmHA provides assistance through the following types of loans.

Operating loans - will be made to family farm operators to acquire needed resources, to make improved use of their land, and to make adjustments necessary for successful farming. Special emphasis is on making loans to young farmers.

Emergency loans - will be made to farmers in eligible counties when property damage or severe production losses have occurred as a result of a natural disaster.

Farm ownership loans - will be made to farmers to buy or improve farms. Loans may include funds to develop water resources.

Soil and water conservation loans - will be made to assist farmers in developing, conserving and making proper use of land and other resources.

Watershed protection loans - enable local organizations approved by the SCS to finance projects that protect and develop land and water resources in small watersheds.

Resource conservation and development loans - enable sponsors of SCS - approved RC & D projects to finance projects for natural resource conservation and development in designated areas.

Community facility loans - are authorized to public and non-profit associations to construct, enlarge, extend, or improve water, sewerage, solid waste disposal and storm waste water disposal facilities.

Loans for irrigation and drainage and other soil and water conservation measures, loans for shifts in land use - are made to organizations of farmers for conservation projects.

U.S. DEPARTMENT OF AGRICULTURE, STATISTICAL REPORTING SERVICE

Crop and Livestock Reporting Services

210 Walnut Street

Des Moines, Iowa 50309

515-284-4340

Duane M. Skow, Agricultural Statistician in Charge

Authority: The Statistical Reporting Service prepares estimates and reports of agricultural production, supply, price and other items necessary to the U.S. agricultural economy.

Organization: The Statistical Reporting Service functions jointly and in cooperation with the Iowa State Department of Agriculture. The consolidated activity is known as the Iowa Crop and Livestock Reporting Service. The close cooperation avoids the potential for duplication of effort. The SRS employees are primarily concerned with national and state estimates. Federal appropriations do not provide for the publication of detailed county agricultural information, which is performed by the state employees.

Programs: The office prepares weekly, monthly and annual reports on agricultural products produced in Iowa. In particular, the Service prepares the *Iowa Weekly Weather and Crop Report* which details weather and crop conditions throughout the growing season. Basic information for the preparation of these statistical forecasts and estimates is provided through the voluntary cooperation of dealers in agricultural commodities who respond to mailed questionnaires. Information is also gathered through the use of trained enumerators employed to collect and record data from scientifically-selected probability samples of farms.

U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL WEATHER SERVICE

Municipal Airport

Des Moines, Iowa 50321

515-285-6906

Warren Caldwell, Director

Authority: The mission of NOAA is to explore, map and chart the global ocean and living resources and to describe, monitor and predict conditions in the atmosphere, issue warnings against impending destructive natural events, and develop beneficial methods of environmental modification. NOAA was formed on 3 October 1970 by Reorganization Plan 4 of 1970.

Organization and Programs: Regional offices collect data and report weather statistics from 873 collection points within Iowa. There are three offices in Iowa, located in Des Moines, Waterloo and Sioux City. The results of this data collection are disseminated by NOAA in daily and monthly reports. Weather statistics for the state by crop reporting districts are reported by the U.S. Department of Agriculture's Statistical Reporting Service.

**U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT,
COMMUNITY PLANNING AND DEVELOPMENT PROGRAM**

7100 W. Center Road
Omaha, Nebraska 68106
402-221-9301

Mr. Guy J. Birch, Area Office Director

Authority: Title I of the Housing and Community Development Act of 1974 states the objective of this program as the development of viable urban communities. Title I replaced various categorical grant programs, including the water and sewer and neighborhood facilities programs.

Organization: The Assistant Secretary for Community Planning and Development is responsible for the block grant assistance program. Applications for HUD assistance from the community planning and development program are available from the Omaha area office.

Programs: One of the goals of this HUD program is the improvement of public services, including water supply. States, cities, counties and other units of local government are eligible to receive these funds and no matching contributions are required. The funds available for distribution will be split with 80 percent going to metropolitan areas and 20 percent to non-metropolitan areas.

**U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT,
FEDERAL INSURANCE ADMINISTRATION,
NATIONAL FLOOD INSURANCE PROGRAM**

Iowa Natural Resources Council
Grimes State Office
Des Moines, Iowa 50309
515-281-5913

Jack Riessen, State Coordinator

300 Federal Office Bldg.
Kansas City, Mo. 64106
816-374-2161

Ben Stevenson, Regional Coordinator

Authority: The Flood Disaster Protection Act of 1973 requires that federal financial assistance (including disaster assistance and mortgage loans from federally-supervised lending institutions and FHA- or VA-insured loans) for acquisition or construction purposes in areas of special flood hazard in participating communities be protected by flood insurance.

Programs: In return for the availability of flood insurance, communities which have flood problems must agree to adopt and administer flood plain management regulations that will protect new construction from further flooding. In Iowa, these regulations are developed by the coordinating agency, the Iowa Natural Resources Council. After the community agrees to develop the flood plain program, HUD will pay the cost of hiring a private firm to prepare a flood hazard boundary map, which shows the extent of inundation of the one-percent annual flood. This map serves as the basis for the community's flood plain management regulations. Before a regular program is begun in a community, a detailed Flood Insurance Study is completed. This study evaluates and analyzes the flood potential of the community. On the basis of these studies, a flood insurance rate map will be produced.

Once a community has qualified for the program, flood insurance may be obtained from any licensed property insurance agent. A flood disaster victim will be eligible for disaster assistance even if he does not have flood insurance at the time of the disaster. However, the victim must agree to purchase flood insurance to protect his property against future flood damage.

U.S. DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS

Kansas City District
700 Federal Bldg.
601 E. 12th Street
Kansas City, Missouri 64106
816-374-3896
Colonel Richard L. Curl

Omaha District
7410 U.S. Post Office and Court House
Omaha, Nebraska 68102
402-221-3020
Colonel Russell A. Glenn

Rock Island District
Clock Tower Building
Rock Island, Illinois 61201
309-788-6361
Colonel Daniel Lycan

St. Paul District
1210 U.S. Post Office and Customhouse
St. Paul, Minnesota 55101
612-631-1071
Colonel Forrest Gay

Authority: The basis of the Corps' responsibility for regulating navigable waters is the River and Harbors Act of 1899, which provides that the creation of any obstruction not authorized by Congress is prohibited unless a permit has been obtained from the Secretary of the Army prior to the start of construction. Included in the definition of obstruction are the smallest recreational docks and the largest commercial facilities.

Under the Federal Water Pollution Control Act Amendments of 1972, the Corps is authorized to issue permits for the discharge of dredged or fill materials in navigable waters. The second phase of the dredging program will extend Corps' regulation into primary tributaries of navigable waters and lakes. The third phase of the program will extend Corps' jurisdiction to all waters in the U.S. However, on July 7, 1976, President Ford decided to delay implementation of the second phase of this program.

The Army is responsible for prescribing regulations for the use, administration and navigation of navigable waters. (33 USC 1). The Corps is also authorized to collect statistics on the amount and types of freight utilizing navigable waters (33 USC 553). The Corps is also responsible for constructing and maintaining reservoirs, levees, harbors, waterways and other types of structures. These structures are funded and built by Congressional authorization. Corps projects are used for a variety of purposes and multiple-function use is stressed. In Iowa, the Corps' flood control function is most important (33 USC 701).

Organization: Each Corps district controls a portion of a major navigable waterway such as the Mississippi or the Missouri and all waters which drain into that waterway. Iowa is in the Rock Island district, which controls the Mississippi from Hannibal, Missouri to Guttenberg, Iowa; the St. Paul district which controls the Mississippi above Guttenberg; the Omaha district, which controls the Missouri from Sioux City to Rulo, Missouri; and the Kansas City District, which controls the Missouri from Rulo to St. Louis.

Programs: The Corps constructs and maintains dams, reservoirs, levees, harbors, waterways, locks and many other types of structures. These works are used for a variety of purposes: navigation, flood control,

hydroelectric power production, municipal and industrial water supply, and recreation. Frequently a development is used for a combination of these purposes. The Corps must "preserve and protect established and potential uses" of water, and they may only allow navigation in those places where a substantial benefit will accrue from it and no conflicts will arise.

A rather complex procedure must be followed before any Corps' flood control project is authorized. A Congressional resolution must be passed to enable a preliminary investigation of a project to be undertaken. The preliminary study generally lasts about three years. When completed, it is submitted to the Board of Rivers and Harbors, then to the Secretary of the Army, then to the Office of Management and Budget and then to Congress. If Congress approves the study, phased advance planning begins.

Iowa has four reservoirs that were built by the Corps and are used primarily for flood control: Rathbun, Saylorville, Red Rock and Coralville. Another reservoir, Ames Lake in Story County, is in planning stages. Smaller Corps' flood control projects are located throughout Iowa.

U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF OUTDOOR RECREATION

Denver Federal Center, Bldg. 41
P. O. Box 25387
Denver, Colorado 80225

Authority: The Bureau of Outdoor Recreation was created on April 2, 1962. The Bureau carries out most of the responsibilities of the Secretary of the Interior under the Land and Water Conservation Fund Act of 1965. The Bureau is responsible for promoting coordination between all levels of government and for the development of effective programs relating to outdoor recreation.

Organization: The national office in Washington, D. C. is supplemented by seven regional offices. Iowa is in the Mid-Continent region, which has offices located in Denver.

Activities: Under the Land and Water Conservation Act of 1965, the Bureau administers a program of financial assistance grants to states and their political subdivisions for comprehensive recreation planning, land acquisition and facility development. The Bureau participates in the planning, coordination and establishment of uniform policies relating recreation, fish, and wildlife. The Bureau also has the responsibility for the preparation and implementation of a comprehensive Nationwide Outdoor Recreation Plan.

U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

Cooperative Fish and Wildlife Service
Research Unit
Science Hall
Iowa State University
Ames, Iowa 50011
515-294-3056
R. B. Dahlgren, Leader (Wildlife)

Cooperative Fish and Wildlife Service
Research Unit
Science Hall
Iowa State University
Ames, Iowa 50011
515-294-3056
R. J. Muncy, Leader (Fish)

Enforcement Division
210 Walnut St.
Des Moines, Iowa 50309
515-284-4125

Authority: The national responsibility for the service of wildlife and people reaches back over 100 years to 1871 when the Bureau of Fisheries was created. The modern Fish and Wildlife Service was organized in

1970. The objective of the Service is to assure maximum opportunity for the American people to benefit from fish and wildlife resources as part of their natural environment.

Organization: The Service today is composed of a headquarters office in Washington, D.C., seven regional offices, and a variety of field units and installations. These include over 350 National Wildlife Refuges, 35 fish and wildlife research stations and laboratories, cooperative research units at 45 universities, 100 fish hatcheries, and a network of wildlife law enforcement agents and wildlife enhancement biologists. Fish and Wildlife Service facilities in Iowa include two national wildlife refuges, Union Slough in Tintonka and DeSoto Bend in Missouri Valley. An enforcement officer operates in Des Moines and two cooperative research units, one dealing with fish and the other with wildlife, operate at Iowa State University in Ames.

U.S. DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY

Iowa District
Water Resources Division
Federal Building
Iowa City, Iowa 52240
319-338-0581 ext. 521
Sulo Wiitala, District Chief

Authority: The U.S. Geological Survey was established in 1879. The agency was mandated to classify public lands and examine the "geological structure, mineral resources, and products of our national domain". (43 USC 31). In 1962 this mandate was expanded to include examinations outside the national domain, such as topographic mapping and chemical and physical research. (43 USC 31b).

The water resource authorities of the USGS are derived from an act of 1894 which provided that the agency would gage the streams and determine the water supply of the United States. (28 Stat. 398). The water resource program is funded by the federal government and the state on a 50/50 cost sharing basis. The state funds are authorized by chapter 305.8 of the *Code of Iowa*.

Organization: The USGS headquarters office is located in Reston, Virginia. The agency is split into numerous divisions, each with a different substantive authority. The Water Resources Division is headquartered in Reston, and has district offices in each state. The Iowa operations are headquartered in Iowa City. Satellite offices are maintained in Council Bluffs and Fort Dodge.

Programs and Activities: The objectives of USGS water activities are the appraisal of the occurrence, availability, and quality of water resources; the surveillance of water resources to determine changes in discharge, chemical quality, and sediment load of surface waters, and changes in ground water levels and quality; and the determination of the impact of water development on the total water-resource system.

Since 1913, USGS and the Iowa Geological Survey have cooperated in the systematic collection of information on streamflow, sedimentation; and ground water. This data is collected at numerous stations around the state, many of which are maintained by the USGS. The results of these investigations are annually published by USGS in their water supply papers. In particular, *Water Resources Data for Iowa* is an annual compilation of information on the characteristics of Iowa's water resource base.

U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF LAND USE AND WATER PLANNING

C Street Between 18th and 19th St., N.W.
Washington, D. C. 20240
202-343-1100
Mr. Lance Marston, Director

Authority: The Office of Land Use and Water Planning was established by Secretarial Order No. 2953 on May 7, 1973.

Programs: The Office is responsible for the preparation of documents necessary for the implementation of land use legislation. It serves as the staff to the Secretary of the Interior in his role as Chairman of the Water Resources Council and coordinates all input to the Water Resources Council.

**U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF WATER RESEARCH AND TECHNOLOGY**

Office of Water Research and Technology
Department of the Interior
Washington, D.C. 20240
202-343-5881
William S. Butcher, Director

Authority: OWRT performs the water resources research and development activities vested in the Secretary of the Interior under the Water Resources Research Act of 1964 (42 USC 1961) and under the Saline Water Conversion Act (42 USC 1959).

Organization: The main office of the OWRT is located in Washington, D.C. OWRT also administers a cooperative program with university Water Resources Research Institutes. In Iowa, the OWRT-sponsored facility is Iowa State University's Water Resources Research Institute (ISWRRI).

Programs: The fundamental purposes of OWRT are to develop new or improved technology and methods for solving state, regional and nationwide water resource problems; to train water scientists and engineers by providing on-the-job training opportunities; and to disseminate information on water research results. The mission of OWRT is carried out through their funding of state water resources research institutes.

OWRT funds and administers a cooperative program with the Iowa State Water Resources Research Institute in Ames. ISWRRI conducts research, investigations and experiments and trains scientists.

OWRT manages the Water Resources Scientific Information Center, which publishes the biweekly abstract journal, *Selected Water Resources Abstracts*.

U.S. ENVIRONMENTAL PROTECTION AGENCY

1735 Baltimore Avenue
Kansas City, Missouri 64108
816-374-5825
Jerome H. Svore
Regional Administrator

Authority: EPA was established as an executive agency pursuant to Reorganization Plan No. 3 of 1970. The purpose of creating EPA was to permit coordinated government action on behalf of the environment. EPA attempts to abate and control pollution systematically, by using a mix of research, monitoring, standardsetting and enforcement activities. EPA coordinates and supports research and pollution control activities by state and local government and private groups.

In the area of water quality, EPA is given a primary role in the administration of the Federal Water Pollution Control Act. EPA's role in the administration of the FWPCA is primarily one of setting water quality standards and criteria, approving state-designed water quality implementation plans and assisting state water pollution control activities. EPA has only a secondary role in enforcement activities. Only when a state fails to enforce a standard may EPA step in to enforce after giving notice to the violator and the state.

Organization: The EPA headquarters is located in Washington, D.C. There are five program divisions: air and waste management, water and hazardous materials, enforcement, planning and management, and research and development. The nation is divided into ten regions, each has a regional director and staff.

Four National Environmental Research Centers are operated by EPA. The regional administrators are EPA's principal representatives in contacts with federal, state, regional and local groups.

Activities: Water quality activities at EPA revolve around the requirements of the FWPCA. The Water and Hazardous Materials division of EPA develops regulations for water pollution control, and water supply, and sets water quality standards and effluent guidelines. The division also supplies technical assistance and support to state and regional water quality programs. The Office of Enforcement provides policy direction to state and federal enforcement activities. The Office of Research and Development is involved in conducting research on technological controls of all forms of pollution and disseminating research results.

U.S. SMALL BUSINESS ADMINISTRATION

210 Walnut St.
Des Moines, Iowa 50309
515-284-4422
Mr. Harold J. Sears, District Director

Authority: The Small Business Administration was created by the Small Business Act of 1953 (67 Stat. 232). The purposes of the SBA are aid, counsel, assist and protect the interests of small business. SBA does its work primarily by making loans to small firms and providing management services to their owners.

Organization: SBA divides the nation into ten regions. Iowa is in region VII, which is headquartered in Kansas City. Each region is in turn divided into districts. Iowa's district office is located in Des Moines.

Programs and Activities: SBA's major function is to provide loan money to permit small businesses to improve their facilities and remain financially sound in the face of new federal regulatory requirements, natural disasters, and economic recession. SBA provides guaranteed direct or lender participation loans to small business concerns to help them finance plant construction, conversion, or expansion, and acquire equipment, facilities, machinery, supplies, or materials. SBA also provides loans to assist businesses which have been injured by natural disasters such as floods and droughts. Loans will also be granted to businesses who may not be able to afford to install pollution control equipment to meet requirements of the Federal Water Pollution Control Act, or other regulatory statutes.

Other SBA programs not involving loans include the counseling of small business investment companies, and the provision of management assistance. Their procurement program works with purchasing agencies of the federal government to attempt to increase the number of government contracts going to small business.

UPPER MISSISSIPPI RIVER BASIN COMMISSION

Federal Bldg., Room 510, Fort Snelling
Twin Cities, Minnesota 55111
612-725-4690
George W. Griebenow, Chairman

Authority: The U.S. Water Resources Council, pursuant to the Water Resources Planning Act of 1965 (PL 89-80), requested the establishment of the Upper Mississippi River Basin Commission. Executive order 11569, signed on March 22, 1972 established the UMRBC as consisting of the upper Mississippi, Souris, Red and Rainy River drainage basins, encompassing parts of the states of Illinois, Iowa, Minnesota, Missouri, Wisconsin and North Dakota. On September 7, 1973, the Souris-Red-Rainy drainage basin region was included within the jurisdiction of the UMRBC.

Organization: The membership of the UMRBC includes one commissioner from each state and one from each of ten related federal agencies. Mr. Fred Prievert, Director of the Iowa Conservation Commission is the Commissioner from Iowa. The full-time office in Twin Cities has a staff of 15. A regional office is located in Fargo, North Dakota. The UMRBC submits its plans to the U.S. Water Resources Council, which reviews the documents and transmits its recommendations regarding the authorization of federal projects to Congress.

Programs and Activities: The UMRBC serves as a principal agency for the planning of federal, state, interstate, local and non-governmental development of water resources. The goal of UMRBC activities is to "maintain and enhance the physical and social environment of the Upper Mississippi and the Souris-Red-Rainy River Basins in keeping with the physical and social needs of the citizens". Their authorized activities include the instigation and preparation of studies of water and related land resources, the recommendation of long-range schedules of priorities for collection of basic data, and the preparation of a comprehensive, coordinated joint plan (CCJP).

Many of the UMRBC activities revolve around the development of the CCJP. A framework study was published in 1972, and its review was completed in 1974. The planning process is dynamic and it is expected that the CCJP, through Level B studies, will be revised to reflect changed conditions and recent research results. The Minneapolis-St. Paul Level B Study was initiated in 1974 and will serve as a general guide for water resource project proposals.

The UMRBC is the regional sponsor of the 1975 National Assessment of U.S. water and related land resources. This is the second such assessment, and is being carried out by the Water Resources Council under a Congressional mandate.

At the joint request of the U.S. Departments of the Interior and the Army, the Commission became involved in the federally-funded GREAT River Study. The purpose of this study is to outline a river management plan with input from all levels of government. The first year of the study concentrated on the stretch of the Mississippi from St. Paul to Guttenberg, Iowa. During the second year the project was extended to the mouth of the Missouri. This year, the study is concentrating on the lower reach of the river to Cairo, Illinois.

AN INDEX TO IOWA WATER LAWS AND ADMINISTRATIVE REGULATIONS

Compiled by Charles J. Huelsbeck

Foreword:

This two-part index is not an exhaustive reference on Iowa water laws and regulations but rather provides a "rapid locator" of individual sections in the *Code of Iowa*, the *Iowa Administrative Code*, and the various uncoded rules and temporary regulations cited herein. For detailed information, consult the REFERENCE SOURCES.

Key to Abbreviations and Numbers:

Numbers before periods refer to *Code of Iowa* chapters and those after periods to *Code* sections. In Part I: Index to Iowa Water Laws, *Code of Iowa* chapters and sections are the chief references. *I.A.C.* indicates the *Iowa Administrative Code* and *R.C.P.* the Rules of Civil Procedure, included in the *Code of Iowa*, v. II.

In Part II: Index to Administrative Regulations, the first number or the initials after a word or phrase indicate respectively a chapter in the *Iowa Administrative Code* or the title of uncoded agency regulations. For example, under DAMS AND RACES -Water level, Lowering of -Hearing, 580—7.4 refers to chapter 7, section 4 of the Iowa Natural Resources Council's *Iowa Administrative Code* department number 580. The number in parentheses indicates a chapter or section in the *Code of Iowa*. For example, under DAMS AND RACES, etc., (109.15) indicates section 15 of chapter 109 in the *Code*.

An example of uncoded references is under BOATS AND VESSELS, where *B.R.* refers to *Iowa Boating Regulations*, listed in REFERENCE SOURCES under Iowa State Conservation Commission.

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Iowa State Conservation Commission, 1975, Iowa administrative code: Des Moines, State of Iowa, chs. 1-3, dept. no. 290. Separate paging of chapters.

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Iowa State Conservation Commission, 1975, Iowa off-road recreation vehicle regulations: Des Moines, State of Iowa, 12 pp. (*O.R.V.*)

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Iowa State Department of Health, 1976, Residential sewage disposal systems: Des Moines, State of Iowa, 1, 29 pp. Rev. ed. (Includes *I.A.C.* ch. 470—12)

Iowa State Department of Health [no date] Rules and regulations for the design and operation of individual waste water treatment systems: Des Moines, State of Iowa, 23 pp. (Incorporated into Iowa Administrative Code, dept. no. 470, 1976) (*W.W.T.S.*)

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- M/H. Melvin, Stewart W., 1971, How to comply with Iowa's feedlot runoff control regulations: Ames, Iowa State University..Cooperative Extension Service, Pm-511, 4 pp. (Incorporated into *Iowa Administrative Code*, dept. no. 400, 1975)
- O.R.V. Iowa State Conservation Commission, 1975, Iowa off-road recreation vehicle regulations: Des Moines, State of Iowa, 12 pp.
- R.S.S. Iowa State Department of Health, 1976, Residential sewage disposal systems: Des Moines, State of Iowa, 1, 29 pp. Rev. ed. (Includes *I.A.C.* ch. 470—12)
- W.S.S.W. Iowa Office of Planning and Programming, Division of Municipal Affairs, 1972, Guide for water, sewer, and solid waste facilities for Iowa communities: funding and construction: Des Moines, the Governor's Rural Policy Council, 57, xvii pp.
- W.W.T.S. Iowa State Department of Health [no date] Rules and regulations for the design and operation of individual waste water treatment systems: Des Moines, State of Iowa, 23 pp. (Incorporated into *Iowa Administrative Code*, dept. no. 470, 1976)

NUMERICAL KEY TO CODED *I.A.C.* REFERENCES

- 290: Iowa State Commerce Commission, 1975, Iowa administrative code: Des Moines, State of Iowa, chs. 1-3.
- 400: Iowa Department of Environmental Quality, 1975, Iowa administrative code: Des Moines, State of Iowa, chs. 1-35.
- 470: Iowa State Department of Health, 1975-1976, Iowa administrative code: Des Moines, State of Iowa, chs. 12, 17, 71, 81.
- 580: Iowa Natural Resources Council, 1975, Iowa administrative code: Des Moines, State of Iowa, chs. 1-12.

MATRIX OF CODE OF IOWA AND IOWA ADMINISTRATIVE CODE CHAPTERS

Explanatory Note

The state agencies related to particular chapters in the *Code of Iowa* or the *Iowa Administrative Code* are those having primary regulatory or advisory authority for water resources, as stated in those chapters, although many chapters listed but not shown as related to one of the agencies in the matrix may name other state or county agencies, such as county boards of supervisors, as regulatory or advisory bodies for water resources mentioned in such chapters of the *Code of Iowa* or the *Iowa Administrative Code*.

Code chapters related to agencies as shown by an X.	State Agencies Related to Water Resources									Iowa Administrative Code chapters as shown by an O.	
	Conservation Commission	Environmental Quality, Department of	Air Quality Commission	Chemical Technology Commission	Solid Waste Disposal Commission	Water Quality Commission	Geological Survey	Health Department	Natural Resources Council		Soil Conservation, Department of
1	O										290--1
17	O										290--2
17A	O								X		290--3
24	X O										290--7
27A	O										290--14
28F	O										290--26
75	O										290--30
84	O								X		290--31
103	O										290-32
105	O										290--33
106	X O										290--55
107	X O										290--105
108	X O										290--110
108A	X	O				O					400--16
109		O				O			X		400--19
110	X	O				O					400--21
111	X	O				O			X		400-22
111C		O			O						400--27
112	X							O	X		470--12
114					X				O		580--3
135								X	O		580--4
137								X	O		580--5
137A									O		580--6
148									O		580--7

Code chapters related to agencies as shown by an X.	State Agencies Related to Water Resources										Iowa Administrative Code chapters as shown by an O.
	Conservation Commission	Environmental Quality, Department of	Air Quality Commission	Chemical Technology Commission	Solid Waste Disposal Commission	Water Quality Commission	Geological Survey	Health Department	Natural Resources Council	Soil Conservation, Department of	
170										O	580--8
171										O	580--9
172										O	580--10
177A										O	580--11
215										O	580--12
215A											
263		X						X			
305							X				
306											
308		X							X	X	
310											
311											
313											
314											
319											
320											
321											
328											
331											
332											
338											
346											
356											
357											
357A										X	
358								X		X	
361											
364											
384											

Code chapters related to agencies as shown by an X.	State Agencies Related to Water Resources										Iowa Administrative Code chapters as shown by an O.
	Conservation Commission	Environmental Quality, Department of	Air Quality Commission	Chemical Technology Commission	Solid Waste Disposal Commission	Water Quality Commission	Geological Survey	Health Department	Natural Resources Council	Soil Conservation, Department of	
396											
399											
400											
407											
412											
413								X			
414									X		
420											
421											
427		X	X	X						X	
455	X									X	
455A	X						X	X	X	X	
455B	X	X	X	X	X	X	X	X		X	
456											
457											
458											
459											
460											
461											
462											
463											
464											
465											
466											
467											
467A	X	X								X	X
467B											
467C	X									X	
467D										X	X

Code chapters related to agencies as shown by an X.	State Agencies Related to Water Resources									Iowa Administrative Code chapters as shown by an O.
	Conservation Commission	Environmental Quality, Department of	Air Quality Commission	Chemical Technology Commission	Solid Waste Disposal Commission	Water Quality Commission	Geological Survey	Health Department	Natural Resources Council	
468										
469						X		X	X	
469A										
470										
471	X									
472										
473										
477										
478										
479										
481										
484										
488										
490A										
491										
495										
508										
515										
518A										
555										
568										
572										
580										
593										
602								X		
616										
617										
644										
646										

Code	State Agencies Related to Water Resources										Iowa Administrative Code chapters as shown by an O.
	Conservation Commission	Environmental Quality, Department of	Air Quality Commission	Chemical Technology Commission	Solid Waste Disposal Commission	Water Quality Commission	Geological Survey	Health Department	Natural Resources Council	Soil Conservation, Department of	
657											
690											
697											
707											
708											
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714											
716											
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732											

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 - Hearing procedures and required materials: 580—6.4(2) (455A.19, 455A.20)
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BIBLIOGRAPHY OF IOWA WATER RESOURCES

In the state of Iowa, as elsewhere in the world, water resources are being developed on an ever-increasing scale. Rational decisions about development need to be based on sufficient and reliable information about the water resource base of Iowa in order to meet the growing demands of the population and the pace of economic growth and yet satisfy the goals of environmental quality and the vagaries of the climate. To help improve the data base and communication among those involved with the State's resources, the Iowa Geological Survey is developing the Iowa Water Resources Data System (IWARDS) to coordinate the existing scientific and technical information associated with active water research and water use problems. The design of IWARDS includes a bibliographic reference to publications which document the water resource conditions in Iowa.

The Bibliography of Iowa Water Resources is designed to serve the scientific and technical needs of scientists, engineers, planners, and managers involved with the development and use of water and related land resources in the state. In its present published form, the Bibliography lists pertinent journal articles, reports, theses, maps, and other forms of publication documenting the occurrence, use, and management of water. As such, it provides a handy reference guide to existing information sources about historical and current conditions. It also serves to expand the information base of the researchers and decision-makers by bringing to their attention publications which have previously had little circulation and use.

In the future, the Bibliography will be an operational part of the computerized IWARDS so that periodic updating can be easily accomplished in order to keep the Bibliography current and aligned with user needs.

SCOPE

The scope of the Bibliography is limited both by geographical and topical criteria. The publications listed deal specifically with water resource conditions in Iowa, including the bordering Mississippi and Missouri Rivers. This geographical criteria excludes reports of research and technical developments of a general nature and not unique to Iowa, such as developments in measurement techniques or theories in fluid mechanics.

Topically, the selection of publications emphasizes the documentation of the physical aspects of water resources. The primary purpose is to assemble references to data collections and interpretations on the occurrence and availability of the resources of climate, streamflow, ground water, lakes, soil moisture, and water quality conditions. These data describe the amounts, sources, movements, and time trends of water resource characteristics forming the primary data base for the planning and control of water quantity and quality and watershed management. Although physical characteristics are emphasized, many publications dealing with social, economic, legal, and other institutional arrangements are included.

At this time the scope and length of the Bibliography is arbitrary, because an exhaustive list is not within the present intention or possibility, even within the narrow criteria that initially define its scope. Pressures exist for a longer listing; that is, for a bibliography covering more topical aspects of Iowa's water resources and with a more complete coverage of publications within each topical area. The cooperation of the users in bringing to our attention any additional references and corrections as well as requirements for the future scope of the Bibliography will be appreciated. A pre-addressed questionnaire is enclosed at the end of the Bibliography for returning your initial opinions about the form, content, and updating.

DISTRIBUTION

The Bibliography has been widely distributed in an attempt to reach as many potential users as possible. It should be available for public use at all public libraries in towns of 10,000 or more population, all college and university libraries, and all county extension offices. All state and Iowa-based federal agencies with an interest in water resources have also received the Bibliography. Additionally, Iowa's regional planning agencies and councils of government, municipalities of population greater than 10,000, county engineers, and legislators with interest in natural resources have received the Bibliography. A limited number of additional copies are available from the Iowa Geological Survey upon request.

Once the Bibliography is incorporated into IWARDS in computerized form, requests for portions of the Bibliography can be filled, either directly by users of IWARDS or indirectly through the Iowa Geological Survey. At that time it will be possible to obtain bibliographic listings that have been separated by specific keywords, authors, agencies, or other characteristics.

The Iowa Geological Survey is not in a position to provide copies of the publications listed in the Bibliography, except for those published by the Survey. Sufficient bibliographic information is given to enable users to obtain the desired publications from the publishers, authors, or through local lending institutions.

ORGANIZATION

The contents of the Bibliography are arranged alphabetically by author and each entry is identified with a retrieval code. Each code consists of a letter and number: the first letter of the first author's name and the number or location within the alphabetical sequence for that letter.

The contents of each entry are arranged in the order listed below insofar as the information is available or applicable.

1. Author(s), editor(s), or originating organization(s)
2. Date of publication
3. Title; subtitle
4. Publisher or originating organization
5. Place of publication or of originating organization
6. Type of publication
7. Number of the report or volume
8. Number of pages
9. Keywords

At least one but seldom more than four keywords are listed at the end of each bibliographic entry which give a brief annotation of the contents of the publication. The keywords are taken primarily from the Water Resources Thesaurus*, with some original keywords added to suit better the nature of the publications and the purposes of the Bibliography. In addition to the topical descriptors, place names are used as keywords where applicable.

The index at the end of the Bibliography is a complete listing of all authors and keywords. It is designed to locate publications relating to some specific topic by means of their keywords and retrieval code. Since the number of keywords for each publication is limited and some publications cannot be suitably abstracted by so few, users may find it necessary to consult several allied keywords to obtain references to all publications bearing on any topic.

The following is a list of all topical keywords, divided into broad subject categories.

*U.S. Office of Water Resources Research, Water Resources Thesaurus: A Vocabulary for Indexing and Retrieving the Literature of Water Resources Research and Development, 2d edition, U.S. Govt., Print. Off., Washington, D.C., 1971, 375 pp.

KEYWORDS

A. DRAINAGE, RUNOFF, BASINS

- Agricultural runoff
- Basin morphology
- Flood plains
- Floods
- Infiltration
- Rainfall-runoff relationships
- Runoff
- Soil moisture
- Soils
- Surface-ground water relationships
- Urban runoff

B. STREAMFLOW

- Channel morphology
- Flood frequency
- Floods
- Ice
- Low flows
- Profiles
- Rainfall-runoff relationships
- Streamflow characteristics
- Surface-ground water relationships
- Water supplies

C. AGRICULTURE

- Agricultural chemicals
- Agricultural pollution
- Agricultural runoff
- Agricultural water uses
- Artificial drainage
- Crop water needs
- Feedlots
- Irrigation
- Ponds
- Rural water systems
- Tillage methods

D. CLIMATE

- Climatic data
- Drought
- Precipitation
- Precipitation frequency
- Rainfall-runoff relationships

E. EROSION AND SEDIMENTATION

- Erosion
- Sedimentation

F. WATER AND WATERSHED MANAGEMENT

- Artificial drainage
- Channel modifications
- Development plans
- Flood control
- Flood plains
- Ground water supplies
- Irrigation
- Land resources
- Municipal water supplies
- Pollution control
- Reservoirs
- Water supplies
- Water uses
- Watershed management
- Wetlands

G. LAKES AND LIMNOLOGY

- Eutrophication
- Lake levels
- Lake morphology
- Lake stages
- Limnology
- Ponds
- Reservoirs
- Sedimentation
- Water temperature

H. GROUND WATER

- Aquifer characteristics
- Geology
- Ground water levels
- Ground water quality
- Ground water recharge
- Ground water supplies
- Landfills
- Pumping tests
- Surface-ground water relationship
- Water wells

I. WATER QUALITY

- Agricultural pollution
- Agricultural runoff
- Desalination
- Eutrophication
- Ground water quality
- Landfills
- Pollution control
- Pollution sources
- Potable water
- Quality analyses
- Quality analyses-radioactive elements
- Strip mines
- Thermal pollution
- Waste water treatment

Water quality standards
Water temperature
Water treatment

J. ECOLOGY

Algae
Aquatic life
Ecology
Eutrophication
Limnology

K. WATER USES

Agricultural water uses
Industrial water uses
Irrigation
Municipal water supplies
Navigation
Power plants
Recreation
Rural water systems
Water uses

L. CONSTRUCTION AND DESIGN

Artificial drainage
Channel modifications
Dams
Dredging
Hydroelectric power plants
Power plants
Reservoirs
Sewers
Water wells

M. ANALYTIC TECHNIQUES AND DATA COLLECTIONS

Climatic data
Map
Pumping tests
Quality analyses
Remote sensing

N. LEGAL AND ECONOMIC STUDIES

Bibliography
Economic analyses
Iowa Water Rights Law
Water allocation
Water laws and regulations
Water quality standards

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B25, C27, D31, G14, H36, H62, I11, I43, I75, L17, M22, M49, M61, M79, S6, T18, T21, T27, U227
- Water wells
SEE ALSO: Ground water supplies
D9, D10, F9, G17, H32, J7, J8, K27, L10, L11, M50, M77, N11, N14 to N16, R14, T1
- Waterloo
B72, N12, S101, U51, U184
- Watershed management
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