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SOURCES OF INFORMATION IN WATER RESOURCES

An annotated guide to printed materials

Gerald J. Giefer

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University of California, Berkeley

REFERENCE

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Preface

This guide, compiled for the use of the student and researcher, cites and annotates over 1100 titles found useful for reference purposes in the water resources field. The guide attempts to bring together those secondary sources which, because of the interdisciplinary nature of the water resources field, might otherwise elude most researchers. In addition to a core of titles familiar to hydrologists, titles are included from those allied fields which cover certain aspects of water. Also covered are the pertinent bibliographic aids now appearing under the aegis of the "environmental sciences".

The subject matter in this compilation is generally that now being covered in the major reference tool in this field, the *Selected Water Resources Abstracts of the Water Resources Scientific Information Center, U. S. Office of Water Research and Technology*. This scope is defined there as being "the water-related aspects of the life, physical, and social sciences as well as related engineering and legal aspects of the characteristics, conservation, control, use or management of water." The emphasis here has been upon the literature of the United States. While several titles treating each of the States are included, there is no attempt to include all existing reference works on specific areas and States; the general titles on State publications which are included should give anyone looking for area materials a start in his search. Textbooks are not included; few journal citations are included. The period covered is, in general, 1960 to date; earlier works are included in several subject areas where the work cited represents a long retrospective search or is otherwise in some way noteworthy.

The literature has been arranged in this guidebook in a modified form of the water resources research categories established by the Committee on Water Resources Research of the Federal Council for Science and Technology. As used here they are: general works; nature of water; water cycle; water supply augmentation and conservation; water quality, management and protection; water resources planning; and engineering works. Within the subdivisions of these categories, reference works have been arranged by the following forms: guides and manuals; bibliographies; indexes and abstract journals; encyclopedias; dictionaries; publication lists; handbooks; directories; and data compilations. Not all subjects have reference works in each of these forms, nor is it always clear in which category a certain work should be classified. Citations appear here only once even though they might properly have been listed in several categories. While the numbering of items is sequential, gaps have been left so that new titles could be inserted.

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Annotations do not repeat information given in the title and they are not evaluative. Any quotations used in the annotations are from the preface or introduction of the work being cited.

A combined author, title, subject index is provided. The index refers to item numbers, not to page numbers.

It should be noted that this guide is to *printed* sources of information. There are important alternatives available to the researcher through referral centers and computer retrieval services. Special note may be made of the following:

Water Resources Scientific Information Center (WRSIC)
Office of Water Research and Technology
Washington, D.C., 20240

Access to their bibliographic data base is available to anyone who needs it. Information may be obtained in the form of publications, or one can ask that a special literature search be prepared by one of the centers which are a part of the WRSIC network of computer retrieval terminals. These network centers are as follows: Cornell University, Water Resources and Marine Sciences Center, 468 Hollister Hall, Ithaca, New York, 14850; University of Wisconsin, Water Resources Center, 1975 Willow Drive, Madison, Wisconsin, 53706; University of North Carolina, Water Resources Research Institute, 124 Riddick Building, Raleigh, North Carolina, 27607; and Water Resources Research Center, University of Arizona, Tucson, Arizona, 85721.

Oceanic and Atmospheric Scientific Information System (OASIS)
Technical Information Division
National Oceanic and Atmospheric Administration
Washington, D.C., 20235

Services include computer searches of citations to published literature and on-going and recently completed research in the fields of atmospheric, marine, and earth sciences. Both current awareness and one-time retrospective searches are available.

Library of Congress
Science and Technology Division
National Referral Center
10 First Street, SE
Washington, D.C., 20540

The Center will assist those who have questions in science and technology by referring them to organizations that can answer those

questions. It will provide names, addresses, telephone numbers, and brief descriptions of appropriate information resources.

Smithsonian Science Information Exchange (SSIE)
1730 - M Street, NW
Washington, D.C., 20036

Information is available in areas as specific or general as the requester desires. Subject searches, administration information searches, investigator searches, accession number searches, summaries of current projects and historical searches are performed for varying fee schedules.

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, Virginia, 22151

In addition to the sale of publications and reports, information searches are performed on request.

A compilation of this type is never complete. Suggestions and comments will be gratefully received. Several recent titles, noted at the last minute, may be found in the Addendum.

Because revisions and up-dated editions of many of the titles given in this guide will continue to appear, it is suggested that anyone writing an agency or publisher about availability of a particular title specify "latest edition".

I wish to thank my colleagues at the Archives for their advice and support. Mary Deane, Jan Reist, Nikki Laven, and Michael Poniatowski. Beverly Fish is the peerless indexer. I am of course also indebted to the Water Resources Center of the University of California for years of employment in this field. Most particularly I wish to express my gratitude to Professor Joe W. Johnson who, during the period 1957 through 1973, served as faculty supervisor for the Water Resources Center Archives, and established the values that make it worthwhile.

Gerald J. Giefer
Berkeley, California
July 1975

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GENERAL

GENERAL WORKS

☐ *This section includes the basic sources and tools which apply to the broad field of water resources. Included also are several important general reference tools and guides to general reference books which might be consulted for applicable material.*

GUIDES AND MANUALS

- 1 Tlerner, Saul. **A brief guide to sources of scientific and technical information.** Washington, D.C., Information Resources Press, 1969. 102 p.

"Discussions of information directories and source guidance, information about ongoing research and development, current or recent R & D results, and past R & D results." Also gives information on major literature and resources repositories, and information on how to acquire documents.

- 2 Hogge, Fred, and Norman Wengert. **Searching the social science literature on water: a guide to selected information storage and retrieval systems — preliminary version.** Fort Collins, Colorado State University, Environmental Resources Center, 1972. 45 p.

Prepared for the Office of Water Resources Research and available from NTIS (PB 213 874). Describes information storage and retrieval systems available which might be of use in investigations of social science aspects of water.

- 3 Jenkins, Frances Briggs. **Science reference sources.** 5th ed. Cambridge, Mass., MIT Press, 1969. 231 p.

A bibliographical manual with arrangement of titles in subject sections: general science reference works is followed by highly selected lists of general aids in mathematics, physics, chemistry, astronomy, earth sciences, biological sciences, medical sciences, agricultural sciences, and engineering sciences. Covers such reference sources as guides to the literature; bibliographies, indexes and abstracts; histories; dictionaries and encyclopedias; handbooks and tables; biographies; directories; scientific meetings; technical writing; translations; industrial information; research and development reports; patents and series.

- 4 **United States Government organization manual.** Washington, D.C., U.S. General Services Administration, National Archives and Records Service, Office of the Federal Register, 1935 — to date.

The official organization handbook of the federal government. Describes the agencies of the legislative, judicial, and executive branches as well as independent agencies and selected international organizations. Includes lists of

urrent officials, organization charts for the more complex departments, appen-
dixes on abolished or transferred agencies and functions, government publica-
tions and an alphabetical list of assignments in the *Code of Federal Regulations*.
Complete name index and a subject/departmental index.

- 5 U.S. Patent Office. *General information concerning patents*. Washington,
D.C., GPO, 1967. 40 p.

A brief introduction to patent matters including information about the
Patent Office, procedures for applicants, and definitions of patents, copyrights,
and trademarks.

- 6 Winchell, Constance M. *Guide to reference books*. 8th edition. Chicago,
American Library Association, 1967. 741 p.
———. *First supplement, 1965–1966*. 122 p.
———. *Second supplement, 1967–1968*. 165 p.
———. *Third supplement, 1969–1970*. 190 p.

A thorough coverage of the reference books necessary to research arranged
in five broad sections which in turn are divided into categories: guides and man-
uals; bibliographies; indexes and abstract journals; encyclopedias; dictionaries of
special terms; handbooks; annuals and directories; histories; biographical works;
theses; and serial publications.

BIBLIOGRAPHY

- 7 Alaska Power Administration. *Bibliography and historical notes, 1946–
1968, Upper Yukon River Study, Canada-United States*. Juneau, Alaska,
1969. 29 p.

Storage of waters of the Upper Yukon watershed; diversion for generation of
power; power market potential.

- 8 American Water Works Association. "1971–1972 water supply library, a
comprehensive bibliography of some of the latest literature available in the
water supply field." *Journal of the American Water Works Association*,
Part 2, *AWWA Yearbook*, v. 63, no. 11 (1971), WSL 1–15.

"A checklist of selected publications, currently available, which should
prove useful and valuable to the field." Presented in sections according to sub-
ject. Prices are given.

- 9 Anglemeyer, Mary. *Natural resources; a selection of bibliographies*. 2nd ed.
Washington, D.C., U.S. Department of the Army, Engineer Agency for Re-
sources Inventories, 1970. 145 p. (EARL Development research series re-
port no. 3).

869 annotated references arranged geographically; includes atmosphere,
earth, water, climate, plants and animal interrelationships. Mainly English and
western European languages. Citations include addresses and price of item where
applicable.

- 10 California. Department of Water Resources. Division of Resources Plan-
ning. *Selected bibliography of resources development*. Sacramento, 1959.
63 p.

———. *Supplement no. 1*. 1967. 259 p.

Early edition covers period 1930–1958, and is arranged in sections and an-
notated. Supplement contains over 1400 citations for the period 1959–1966 ar-
ranged in parts relating to the economic, social and administrative aspects of wa-
ter development. Not annotated.

- 11 California. University, Berkeley. Water Resources Center Archives. Dic-
tionary catalog of the Water Resources Center Archives, University of Cali-
fornia, Berkeley. Boston, G.K. Hall & Company, 1970. 5 v., Supplements

A printed catalog of a collection of some 80,000 titles. Major emphasis is
on report material, including technical and scientific reports, government publica-
tions, publications of water-related societies and associations, and conferences
and symposia. Three annual supplements have appeared since the basic set was
published: *First Supplement*, 1971; *Second Supplement*, 1972; *Third Supple-
ment*, 1973. *Fourth Supplement*, 1974.

- 12 Engineering Societies Library, New York. *Classed subject catalog of the
Engineering Societies Library*. Boston, G.K. Hall & Company, 1963. 12 v.

Printed catalog of the largest engineering library in the United States.
Eight supplements have appeared, bringing the catalog up-to-date.

- 13 Finger, Charles. *Water and land resources of Arkansas*. Little Rock, Ark.,
Soil and Water Conservation Commission, 1967. 90 p.

Arranged by subject (*i.e.* climate, drainage, floods, etc.), and under subject
alphabetically by author.

- 14 Giefer, Gerald J., and David K. Todd. *Water publications of state agencies;
a bibliography of publications on water resources and their management
published by the States of the United States*. Prepared with the assistance
of Mary Louise Quinn. Port Washington, N.Y., Water Information Center,
Inc., 1972. 319 p.

Citations of water resources publications issued by 335 state agencies in the
50 states. Information listed by state with publications grouped under issuing
agency of each state. Agency addresses and price information given.

- 15 Great Lakes Basin Commission. **Great Lakes Basin Library.** Ann Arbor, Mich., 1969. 3 v.

Catalog of holdings in the Basin Library: v. 1, issuing agencies and authors; 2, authors and titles; v. 3, titles.

- 16 Hartman, Charles W., and Robert F. Carlson. **A bibliography of Arctic water resources.** College, University of Alaska, Institute of Water Resources, 1970. 344+ p. (Report no. IWR-11).

Keyword format. "Entries . . . selected for inclusion on the basis of their relevance to understanding the nature of the land-based water cycle in Alaska's Arctic and Sub-Arctic regions. . ." Does not include mechanical aspects of permafrost or oceanographic data.

- 17 Heath, Jo Ann, and Nancy B. Tabacchi. **Bibliography of reports resulting from U.S. Geological Survey participation in the United States Technical Assistance Program, 1940-67.** Washington, D.C., U.S. Geological Survey, 1968. 68 p. (Bulletin no. 1263).

Includes investigations of water resources and establishment of hydrologic agencies in developing countries. Reports listed alphabetically by author under each country or region and indexed by subject and author. Approximately 900 references.

- 18 Hoadley, I. B. **Natural resources bibliography.** Columbus, Ohio State University Libraries, Office of Educational Services, 1970. 242 p. (Publication no. 5).

Compilation of materials with some annotations emphasizing the social scientist's point of view toward natural resources. Entries arranged by form with subject index.

- 19 Kennard, William C., and Jane S. Fisher. **A bibliography of publications relating to water resources in Connecticut, 1900-1970.** Storrs, University of Connecticut, Institute of Water Resources, 1970. 125 p. (Report no. 10).

References are arranged once by subject, then by author.

- 20 Montana. Water Resources Board. **Bibliography of Montana water resources and related publications.** Helena, Montana, 1970. 91. (It's Inventory series report no. 10).

" . . . lists all known printed information, both published and unpublished, available . . . as of December 1968." Arranged by author with coding for subject and place.

- 21 **Monthly checklist of state publications.** Washington, D.C., U.S. Library of Congress, Exchange and Gift Division, 1910- to date.

A record of State documents which have been received by the Library of Congress. Monographs are listed each month as they are received and are arranged by State and issuing agency. Included among them are annual publications and monographs in series. Periodicals are listed semi-annually in the June and December issues, with the December list cumulative for the year. Arrangement by State and issuing agency with annual subject index.

- 22 Pearl, Richard Howard. **Bibliography of hydrogeologic reports in Colorado.** Denver, Colorado, Colorado Geological Survey, Department of Natural Resources, 1971. 39 p. (Bulletin 33).

Comprises all known published and unpublished public reports on groundwater conditions in Colorado through 1970. A listing by author; no annotations. Subject index.

- 23 Pfund, Rose T., and Dorothy L. Stellar. **Bibliography of water resources of the Hawaiian Islands.** Honolulu, University of Hawaii, Water Resources Research Center, 1971. 142 p. (Technical report no. 50).

Annotated, arranged alphabetically by author, key-word-in-context subject index.

- 24 Rodier, J. **Bibliography of African hydrology.** Paris, United Nations Educational, Scientific and Cultural Organization, 1963. 166 p. (Natural resources research II).

Includes surface hydrology, precipitation, evaporation, infiltration and hydrogeology. Most references post-1930. Arranged by broad subject and within this, by country. References given in original language. No annotations.

- 25 Sheridan, Richard G. **Bibliography on Montana's water and related land resources.** Bozeman, Montana University, Joint Water Resources Research Center, 1966. 81 p. (Report no. 1).

Includes books and articles; periodical indices search from 1945 to date of publication; arrangement is by subject. No annotations.

- 26 Singh, R. N., and Kenneth P. Wilkinson. **Social science studies of water resources problems: review of literature and annotated bibliography.** State College, Mississippi State University, Water Resources Research Institute, 1968. 82 p.

187 items arranged alphabetically by author representing citations taken from the journal literature. Journals cited are listed.

- 7 Stork, Karen E., and Nyla R. Thomsen. **Water resources publications related to the State of Nebraska.** 2nd ed. Lincoln, University of Nebraska, Water Resources Research Institute, 1972. 89 p. (Publication no. 7).
Arranged by agency; no annotations; author and key-word indexes.
- 8 U.S. Department of the Interior. Library. **Dictionary catalog of the Department Library, United States Department of the Interior.** Boston, Mass., G. K. Hall & Company, 1967. 37 v.
A printed catalog of the Department collection which includes in its scope (and pertinent here): geology, fish and fisheries, conservation, land management, and reclamation, public land policy, history and development of irrigation in the western states, and water and power. Several supplements have appeared bringing the catalog to-date: *First Supplement*, 4 v., 1968; *Second Supplement*, 2 v., 1971.
- 9 U.S. Geological Survey. Library. **Catalog of the United States Geological Survey Library, Department of the Interior.** Boston, G. K. Hall & Company, 1964. 25 v.
Printed catalog indexing by author, title and subject more than half a million titles which includes natural resources and in particular a wide scope in the field of ground and surface water.
- 10 Viessman, Warren, Jr. **Water resources publications related to the State of Nebraska.** Lincoln, University of Nebraska, Nebraska Water Resources Research Institute, 1969. 47 p. (Publication no. 2).
Arranged by subject. No annotations.
- 11 Walton, William C. **Lists of references and selected books bearing on water resources in Minnesota.** Rev. ed. Minneapolis, University of Minnesota, Water Resources Research Center, 1972. 75 p. (WRRRC Bulletin no. 4).
Arranged in broad subject categories. No annotations.
- 12 Washington. Department of Ecology. **Basin bibliography.** Olympia, Wash., 1972— to date.
A series inventorying water resource literature pertaining to river basins of State of Washington. No annotations.
- 13 ———. **Bibliography of bibliographies on water resources.** Olympia, Wash., 1973. 18 p. (WRIS Information bulletin no. 9).
169 citations arranged in subject categories without annotations.

- 34 Wellisch, Hans. **An international bibliography, water resources development, 1950–1965.** Jerusalem, Israel Program for Scientific Translations, 1967. 135 p.

Books, monographs, reports, proceedings and symposia, arranged in classified order according to the Universal Decimal Classification schedule. All titles given in English. Author and subject indexes included.

INDEXES AND ABSTRACT JOURNALS

- 35 American Water Works Association. **Index to the Proceedings, Journal, and other publications of the American Water Works Association, 1881–1939 inclusive.** New York, 1940. 281 p.
———. **Journal American Water Works Association index, volumes 32–47, 1940–1955.** New York, 1956. 174 p.
———. **Index to Journal of the American Water Works Association (1956–65).** New York, 1967. 133 p.
- 36 **Applied science and technology index.** New York, H. W. Wilson Co., 1913— to date.
“... a cumulative subject index to English language periodicals in the fields of aeronautics and space sciences, automation, chemistry, construction, earth sciences, electricity and electronics, engineering, industrial and mechanical arts, materials, mathematics, metallurgy, physics, tele-communication, transportation and related subjects.” Appears monthly with annual cumulation.
- 37 **CIS/Index: Congressional Information Service/index to publications of the United States Congress.** Washington, D.C., 1971— to date.
Published monthly on a subscription basis. Abstracts and indexes hearings, reports, committee prints, and other congressional papers issued during the previous month. Every quarter, the *CIS/Index* contains a cumulative index to the documents covered during the previous three months. CIS publishes a two part annual: Part One, abstracts of Congressional publications and legislative histories; Part Two, index to Congressional publications and public laws. Available from: Congressional Information Service, 500 Montgomery Building, Washington, D.C., 20014.
- 38 **Current literature on water.** Pretoria, South Africa, Council for Scientific and Industrial Research. 1968— to date.
A monthly bulletin containing references to current articles in 230 journals received by the National Institute for Water Research (CSIR), Republic of South Africa. Arranged in 16 subject categories. A yearly index includes KWIC index, bibliographic listing, name index, and series index.

39. **Government reports announcements.** Springfield, Virginia, National Technical Information Service, 1946- to date.

Formerly appeared under title *U.S. government research and development reports* (1946-1970). Published semi-monthly. An abstracting and announcement bulletin covering reports of research and development performed under government auspices. Arranged by subject fields. Indexed separately by *Government reports index* which appears concurrently with the *Announcements*. *Index* appears also in an annual cumulation in sections: subject index, personal author index, corporate author index, contract number index, and accession/report number index.

- 40 **Hydata, water resources index.** Urbana, Ill., American Water Resources Association. 1965- to date. 217-

A monthly current awareness service. Duplicates the tables of contents of magazines dealing exclusively with water; also includes a section of references to selected titles of non-periodical literature, and a list of foreign patents.

- 41 **Permuted title index to water research journals.** Ithaca, N.Y., Cornell University, Water Resources and Marine Sciences Center. 1963-1967. 5 v.

An annual compilation of the author's *Current awareness list*, it was published from 1963 to 1966 at Cornell; the last issue, 1967, was published by the Water Resources Scientific Information Center.

- 42 **Science citation index.** Philadelphia, Pennsylvania, Institute for Scientific Information, 1961- to date.

Three separate but related indexes are known together as the *Science citation index*. These are *Citation index*, *Source index*, and *Permuterm subject index*.

The *Citation index* is an international interdisciplinary index to the literature of science, medicine, agriculture, technology, and the behavioral sciences. It is published quarterly for the first three quarters of the year with the index for the fourth quarter being the annual cumulation. Available only on a subscription basis at a cost which limits its accessibility, but it can usually be found at major research libraries. *Citation index* lists, by author, all recent works that have included that author's work in their list of references. Thus, having identified the author of an important book or journal article on a subject of interest, the user of this index will find, under that author's name, a list of authors (and pertinent citations) who in the current year have cited the original author in a published work.

- 43 **Scientific and technical aerospace reports.** Washington, D.C., National Aeronautics and Space Administration, 1963- to date.

A comprehensive abstracting and indexing journal covering current world-

wide report literature on the science and technology of space and aeronautics. Citations and abstracts are arranged in subject categories. Cumulative index volumes are published semi-annually and annually.

Of particular interest are sections "Fluid mechanics" (boundary-layer flow; compressible flow; hydrodynamics; turbulence); "Geophysics" (oceanography; remote sensing and the environment); and "Meteorology" (climatology; weather forecasting).

- 44 **Selected water resources abstracts.** Washington, D.C., U.S. Water Resources Scientific Information Center, 1968- to date.

"... a semimonthly journal, includes abstracts of current and earlier pertinent monographs, journal articles, reports, and other publication formats. The contents of these documents cover the water-related aspects of the life, physical, and social sciences as well as related engineering and legal aspects of the characteristics, conservation, control, use or management of water. Each abstract includes a full bibliographical citation and a set of descriptors or identifiers which are listed in the *Water resources thesaurus*. Each abstract entry is classified into ten fields and sixty groups similar to the water resources research categories established by the Committee on Water Resources Research of the Federal Council for Science and Technology. . . . Abstracts is designed to serve the scientific and technical information needs of scientists, engineers, and managers." Subject, author, organization, and accession number indexes; international coverage (periodicals, books, reports, theses, and conferences); annual cumulations. Available on a subscription basis.

- 45 **Water resources abstracts.** Urbana, Ill., American Water Resources Association. 1968- to date.

Issued monthly in 49 sections. Appears in loose sheet form and in card stock form. Subscriber can choose as many categories as are of interest and also the form in which he wishes to receive the abstracts. "Provides user with most of the abstracts indexed in *Hydata*." American Water Resources Association, 206 E. University Avenue, Urbana, Illinois, 61801.

- 46 **Weekly government abstract . . .** Springfield, Virginia, National Technical Information service, 1974- to date.

A series of 23 abstract newsletters which are published weekly. These abstract, within two weeks of receipt, reports received by the National Technical Information Service from the originating agencies. The last issue of the year is an index. Of the 23 areas covered, the two most significant here are: "Environment pollution and control," and "Natural resources." Also of interest are the areas "Civil and structural engineering," "Energy," and "Ocean technology and engineering."

DICTIONARIES

- 47 U.S. Bureau of Reclamation. *Thesaurus of water resources terms*; a collection of water resources and related terms for use in indexing technical information. Washington, D.C., GPO, 1971. 339 p.

"6,585 terms arranged according to lead terms and providing broader and narrower hierarchical relationships, as well as related terms . . . changes in terminology have necessarily been made to provide maximum compatibility with the *Thesaurus of engineering and scientific terms* of the Engineers Joint Council, 1967."

- 48 U.S. Office of Water Resources Research. *Water resources thesaurus*; a vocabulary for indexing and retrieving the literature of water resources research and development. 2nd ed. Washington, D.C., 1971. 375 p.

A word list containing cross references and relationships among scientific and technical terms. Scope encompasses the broad research areas of water resources such as the hydrologic cycle, supply and demand for water, conservation and the best use of available supplies, methods of increasing such supplies, and the economic, legal, social, engineering, recreational, biological, geographical, ecological, and quality aspects of water resources. 4,288 main terms interfiled with 1,175 terms referring to main terms. Each entry gives lists of broader terms, narrower terms, and related terms.

PUBLICATION LISTS

- 49 California. Department of Water Resources. *Abstracts of DWR publications*. Sacramento, State Printing Office, 1970- to date. (Bulletin no. 170)

Appears semi-annually (April and September). Issue no. 170-69 carried titles of all previously issued publications of the Department and its predecessor agencies, 1922 to 1969. Issues since no. 170-69 supplement this cumulative edition.

- 50 *Monthly catalog; United States government publications*. Washington, D.C., U.S. Superintendent of Documents, 1895- to date.

Compiled by the Library of Congress and issued monthly by the Superintendent of Documents on a subscription basis. An invaluable reference tool, it includes most (but not all) documents issued by various government agencies. Arranged by issuing agency with detailed subject index which is cumulated annually in the December issue. Available also from the Superintendent of Documents are individual Price Lists; pertinent here are:

- Laws, rules and regulations (PL-10)
- Geology (PL-15)
- Fish and wildlife (PL-21)

- Government periodicals and subscription services (PL-36)
- Irrigation, drainage, and water power (PL-42)
- Forestry (PL-43)
- Weather, astronomy, and meteorology (PL-48)
- Maps, engineering and surveying (PL-53)
- States and territories of the U.S. and their resources (PL-87)

- 51 *New publications of the Geological Survey*. Washington, D.C., U.S. Geological Survey, 1962- to date.

Appears monthly with an annual cumulation. Two permanent catalogs have been published: *Publications of the Geological Survey 1879-1961*, and *Publications of the Geological Survey 1962-1970*. All lists are available free of charge on application to the Geological Survey, 1200 South Eads Street, Arlington, Va., 22202; Geological Survey, Federal Center, Denver, Colo., 80225; or at Survey offices where publications are sold.

- 52 *Reports and maps of the Geological Survey released only in the open files* . . . Washington, D.C., U.S. Geological Survey, 1946-47-to date.

Appears annually in the Survey's "Circular" series. Lists in author order all maps and reports released by the Survey that are available for public inspection in the open files, with indication of major depositories where the material can be consulted. Indexed.

- 53 Talbot, Janet B. *List of Bureau of Reclamation bibliographies*. Denver, Colo., U.S. Bureau of Reclamation, 1970. 39 p.

Numerical listing of Bureau bibliographies, 1922 through June 1970. All are available for loan from the Library at the Bureau's Denver Office of Engineering Reference.

Publication Lists United Nations

- 54 *FAO documentation*. Rome, 1967- to date.

Complete listing of FAO documents. Issued monthly. An annual "current index" contains an author and key-word-in-context subject index. The FAO has an extensive publishing program with materials available for a wide audience; those of interest for the researcher in the field of water resources include materials on erosion problems, water resources of developing countries, and fisheries and forestry inventories. FAO publications are available from UNIPUB, Inc., P.O. Box 443, New York, N.Y., 10016.

- 55 Food and Agriculture Organization of the United Nations. *Water for agriculture annotated bibliography, author and subject index*. Rome, 1973. 1 v. various pagings (DC/Sp 27; also FAO Irrigation and drainage paper no. 22).

12 GENERAL

Covers FAO publications and documents issued between 1945 and 1973. Indexed. Available from UNIPUB, Box 433, New York 10016.

56 **International bibliography, information, documentation:** publications of the United Nations system. New York, R. R. Bowker Company, 1973— to date.

Published quarterly. Gives full bibliographic details and descriptive annotations for all the priced publications and AV materials of all the agencies within the United Nations system. Arranged by broad subject classification, those relevant here being: Earth Sciences; Environment; and Forestry and related industries.

57 **UNESCO list of documents and publications.** Paris, 1972— to date.

Issued six times a year; appears in two parts: Part I is a listing in master-file number order; Part II is a cumulative index (by subject, title and series, personal name, and by corporate body).

58 **United Nations documents index.** New York, United Nations, 1950— to date.

Lists and indexes all documents and publications of the United Nations, except restricted material and internal papers. Issued on a monthly basis, these issues being superseded at end of year by two separate annual cumulations, the *Cumulative checklist* and the *Cumulative index*. A subject index is provided. This title will cease with the issue for December 1974, when it will be replaced by a documents index titled *UNDEX*.

59 **United Nations publications.** New York, 1945— to date.

Food and Agricultural Organization of the United Nations. **FAO books in print 1971-72.** Rome, 1971. 96 p.
United Nations Educational, Scientific and Cultural Organization. **UNESCO publications catalogue 1972.** Paris, 1972. 199 p.
———. **UNESCO publications, hydrology.** Paris, 1972. 1 v. (unpaged).
———. **UNESCO publications, science, 1973.** Paris, 1973. 1 v. (unpaged).

Sales catalogs, usually issued on an annual basis. Unless extensive research is being undertaken, it is advisable to use the most current UN, UNESCO, or FAO sales catalog as a basic reference tool rather than the more difficult-to-use documents indexes and lists. The sales catalogs are arranged by subject categories. The most important studies are published in the series listed in these catalogs.

60 **U.S. Water Resources Council. Publication list.** Washington, D.C., June 1972. Address: 2120 L Street, NW, Washington, D.C., 20005.

DIRECTORIES

61 **American men and women of science: the physical and biological sciences.** 12th ed. New York, Cattell/Bowker, 1971-1973. 6 v.

Biographies. 150,000 entries. A companion set, *Social and behavioral sciences*, is in preparation.

62 Kruzas, Anthony T., Anna E. Schnitzer, and Linda E. Varekamp. **Encyclopedia of information systems and services.** 1st edition. Orange, New Jersey, Academic Media, 1971. 1109 p.

A guide to information centers, computerized systems and services, networks and cooperative programs, data banks, documentation centers, information storage and retrieval systems, micrographic systems and services, research centers and projects, clearinghouses and referral centers, coordinating agencies, consulting and planning services, information offices, industrial research information centers, professional associations, and specialized library reference services.

63 Murra, Kathrine O. **International scientific organizations; a guide to their documentation and information services.** Washington, D.C., General Reference and Bibliography Division, Library of Congress, 1962. 794 p.

Includes scientific, technological, agricultural, and medical organizations which publish. Arranged alphabetically by name of organization in English. Gives address of organization, description of the library; documentation and information service or their relevant activities, a list of publications and a brief statement about the organization's structure and activities. Indexes by subject and organization.

64 **National Academy of Sciences. Scientific, technical, and related societies of the United States.** 9th ed. Washington, D.C., 1971. 213 p.

A directory which gives for each society information on its history and organization, purpose, membership, meetings, professional activities and publications.

65 **Ulrich's international periodicals directory; a classified guide to current periodicals, foreign and domestic.** 13th ed. Edited by Merle Rohinsky. 1969/1970. New York, R. R. Bowker Company, 1969. 2 v.

A classified guide to a selected list of current periodicals, both domestic and foreign. Information given with each entry includes sub-titles, date of origin, frequency, price, publisher, place, and any unusual features of the periodical.

66 **U.S. Federal Council for Science and Technology. Directory of federally supported information analysis centers.** Springfield, Virginia, 1970. 71 p.

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A directory of 119 federally supported information analysis centers giving information on mission, scope, and services provided by the centers listed. Indexed. (Available NTIS, PB 189 300).

- 67 U.S. Library of Congress. National Referral Center. **A directory of information resources in the United States: federal government.** Revised edition. Washington, D.C., GPO, 1974. 416 p. ✓

A directory covering all subjects. A subject index brings out those sources of information on hydrology, water resources, water quality, meteorology, etc. Arranged by department and/or sub-office; information given includes areas of interest, holdings, publications and information services. A supplement gives information on government-sponsored information analysis centers.

- 68 ———. **A directory of information resources in the United States: physical sciences, engineering.** Washington, D.C., Government Printing Office, 1971.

Directory drawn from the central register of information resources at the National Referral Center. Includes in "resources" libraries traditional bibliographic societies, industrial firms, and many government agencies. For each entry gives: areas of interest, holdings, publications, and information services. 2,800 entries. Indexed.

- 69 ———. **Directory of information resources in the United States: water.** Washington, D.C., GPO, 1966. 248 p.

Water information sources in the United States with emphasis on fresh water. Excludes the field of oceanography and commercial firms. Approximately 800 libraries and research centers are reviewed. Arrangement is alphabetical by official designation. Gives information on area of interest, holdings, publications, and information services. An organization index and a detailed subject index are appended.

- 70 U.S. National Science Foundation. Science Information Service Office. **Specialized science information services in the United States: a directory of selected specialized information services in the physical and biological sciences.** Washington, D.C., GPO, 1961. 528 p.

Specialized science information services are arranged alphabetically within 25 major subject headings which are "intended to encompass both major disciplinary and technological areas of significance to the user." Each service is fully described in the most applicable subject headings and is cross referenced in others. Information for each service includes complete name and address, scope of the service, collection (types and numbers of materials), information services and user qualifications, and a general description of publications. Indexed by subjects and organizations' names.

- 71 **Yearbook of international organizations.** 15th edition (1974). Brussels, Union of International Associations, 1973. 1,100 p.

Relatively detailed descriptions of over 4,300 governmental and nongovernmental organizations. Appears annually. Gives the following information: organization name in English, French and other languages where applicable; principal and secondary addresses; name of secretary general (or director general, etc.); history; goals, structure; technical and regional commissions; personnel, finances; consultative relations; members and their nationality; main activities and programmes; place and dates of most recent past and future meeting; and periodical and other publications.

Indexed by subject area of concern, English title, French title, geographical location, abbreviations of organization names, and keyword.

DATA COMPILATIONS

- 72 Feth, J. H. **Water facts and figures for planners and managers.** Washington, D.C., U.S. Geological Survey, 1973. 30 p. (Circular no. 601-1).

What is water; where and how much there is; demands for water; water-data units and equivalents; glossary and references. Intended as a handbook for the layman.

we can order this from GPO!

- 73 International Conference on Water for Peace, Washington, D.C., 1967. **Water for peace.** Washington, D.C., GPO, 1967. 8 v.

Includes, in 600 "country situation reports" and technical papers, information and data on water resources in developing nations. Many of these reports and papers include bibliographies.

- 74 **Statistical abstract of the United States.** Washington, D.C., U.S. Bureau of the Census, 1878- to date.

Annual. "Standard summary of statistics on the social, political, economic organization of the U.S. . . . designed to serve as a convenient volume for statistical reference and as a guide to other statistical publications and sources." Pertinent sections include "Geography and environment" with sections on land and water areas, pollution, waste, water use, storms, floods, and precipitation; "Agriculture" with sections on land use, drainage, and irrigation; and "Power" with statistics on water power. Has a section, "Guide to sources", which references all important primary sources and selected secondary sources.

- 75 Todd, David K. **The water encyclopedia: a compendium of useful information on water resources.** Port Washington, N.Y., Water Information Center, 1970. 559 p.

"A practical reference volume containing a variety of water resources data, facts and statistics. The subject matter has been broadly interpreted to include

climates, hydrology, surface and ground-water resources, water use and needs, and water quality. In addition, information on water resources agencies and constants and conversion factors is presented." Information is presented in tabular form. Indexed.

- 76 U.S. Congress. Senate. Select Committee on National Water Resources. **Report of the Select Committee on National Water Resources**, pursuant to Senate Resolution 48, 86th Congress, together with supplemental and individual views. Washington, D.C., GPO, 1961. 147 p. (87th Cong., 1st Sess., Senate report no. 29).

The Senate Select Committee on National Water Resources was created by Senate Resolution 48 of the 85th Congress, adopted April 20, 1959, to make studies of the extent to which water resources activities are related to the national interest, and of the extent and character of such activities required to provide for future needs of population, agriculture, and industry, as well as to provide for recreational and fish and wildlife values. The Committee held hearings and commissioned 32 studies on all aspects of water resources activities. The *Report* contains a detailed discussion of present and anticipated future water problems of the United States with data, conclusions and recommendations. The history of the Senate Select Committee on Water Resources and the findings of the 32 Committee Prints are also summarized in the *Report*.

The Committee Prints were issued by the Select Committee on National Water Resources 1959-60 under the title *Water resources activities in the United States*. The prints, subject matter, localities, and contributors are indexed in *Water resource activities in the United States, Index for Committee prints 1 to 32*. The Committee Prints are as follows:

- 77 Leopold, Luna Bergere. **Water facts and problems**. Washington, D.C., GPO, 1959. 59 p. (Committee print no. 1).
- 78 Jibrin, Barbara. **Reviews of national water resources during the past fifty years**. Washington, D.C., GPO, 1959. 44 p. (Committee print no. 2).
- 79 U.S. Geological Survey. **National water resources and problems**. Washington, D.C., GPO, 1960. 42 p. (Committee print no. 3).
- 80 U.S. Geological Survey. **Surface water resources of the United States**. Washington, D.C., GPO, 1960. 95 p. (Committee print no. 4).
- 81 U.S. Bureau of the Census. **Population projections and economic assumptions**. Prepared in cooperation with the Resources for the Future Staff. Washington, D.C., GPO, 1960. 49 p. (Committee print no. 5).

- 82 U.S. Congress. Senate. Select Committee on National Water Resources. **Views and comments of the States** [a compilation of reports by State officials]. Washington, D.C., GPO, 1960. 415 p. (Committee print no. 6).
- 83 U.S. Public Health Service. **Future water requirements for municipal use**. Washington, GPO, 1960. 24 p. (Committee print no. 7).
- 84 U.S. Department of Commerce. **Future water requirements of principal water-using industries**. Prepared in cooperation with the U.S. Bureau of Mines. Washington, D.C., GPO, 1960. 101 p. (Committee print no. 8).
- 85 U.S. Public Health Service. **Pollution abatement**. Washington, D.C., GPO, 1960. 38 p. (Committee print no. 9).
- 86 U.S. Federal Power Commission. **Electric power in relation to the nation's water resources**. Washington, D.C., GPO, 1960. 86 p. (Committee print no. 10).
- 87 U.S. Army Corps of Engineers. **Future needs for navigation**. Washington, D.C., GPO, 1960. 28 p. (Committee print no. 11).
- 88 U.S. Department of Agriculture. **Land and water potentials and future requirements for water**. Washington, D.C., GPO, 1960. 73 p. (Committee print no. 12).
- 89 U.S. Department of Agriculture. **Estimated water requirements for agricultural purposes and their effects on water supplies**. Washington, D.C., GPO, 1960. 24 p. (Committee print no. 13).
- 90 U.S. Bureau of Reclamation. **Future needs for reclamation in the Western States**. Washington, D.C., GPO, 1960. 45 p. (Committee print no. 14).
- 91 U.S. Army Corps of Engineers. **Floods and flood control**. Washington, D.C., GPO, 1960. 77 p. (Committee print no. 15).
- 92 Tennessee Valley Authority. **Flood problems and management in the Tennessee River Basin**. Washington, D.C., GPO, 1960. 21 p. (Committee print no. 16).

U.S. National Park Service. **Water recreation needs in the United States, 1960-2000.** Washington, D.C., GPO, 1960. 11 p. (Committee print no. 17).

U.S. Fish and Wildlife Service. **Fish and wildlife and water resources.** Washington, D.C., GPO, 1960. 69 p. (Committee print no. 18).

U.S. Department of the Interior. **Water resources of Alaska.** Washington, D.C., GPO, 1960. 21 p. (Committee print no. 19).

U.S. Department of the Interior. **Water resources of Hawaii.** Washington, D.C., GPO, 1960. 12 p. (Committee print no. 20).

U.S. Congress. Senate. Select Committee on National Water Resources. **Evapo-transpiration reduction.** Washington, D.C., GPO, 1960. 42 p. (Committee print no. 21).

U.S. Congress. Senate. Select Committee on National Water Resources. **Weather modification.** Washington, D.C., GPO, 1960. 46 p. (Committee print no. 22).

U.S. Bureau of Reclamation. **Evaporation reduction and seepage control.** (Washington, D.C., GPO, 1960. 18 p. (Committee print no. 23).

U.S. Public Health Service. **Water quality management.** Washington, D.C., GPO, 1960. 14 p. (Committee print no. 24).

U.S. Weather Bureau. **River forecasting and hydrometeorological analysis.** Washington, D.C., GPO, 1959. 37 p. (Committee print no. 25).

U.S. Office of Saline Water. **Saline water conversion.** Washington, D.C., GPO, 1960. 32 p. (Committee print no. 26).

U.S. Atomic Energy Commission. **Application and effects of nuclear energy.** Washington, D.C., GPO, 1960. 13 p. (Committee print no. 27).

U.S. Department of Agriculture. **Water resources research needs.** Washington, D.C., GPO, 1960. 15 p. (Committee print no. 28).

105 Reid, George W. **Water requirements for pollution abatement.** Washington, D.C., GPO, 1960. 28 p. (Committee print no. 29).

106 Abel Wolman Associates. **Present and prospective means for improved re-use of water.** Washington, D.C., GPO, 1960. 54 p. (Committee print no. 30).

107 Ackerman, Edward A. **The impact of new techniques on integrated multiple-purpose water development.** Washington, D.C., GPO, 1960. 97 p. (Committee print no. 31).

108 Wollman, Nathaniel. **A preliminary report on the supply of and demand for water in the United States as estimated for 1980 and 2000.** Washington, D.C., GPO, 1960. 131 p. (Committee print no. 32).

109 U.S. Executive Office of the President. Bureau of the Budget. Office of Statistical Standards. **Statistical services of the United States government.** Rev.ed. Washington, D.C., GPO, 1968. 156 p.

"Designed to serve as a basic reference document on the statistical problems of the U.S. Government." Discusses procedures followed, types of statistical agencies, descriptions of statistical series collected. A bibliography of statistical publications of federal agencies is arranged by agency.

110 U.S. Geological Survey. **Water resources investigations in . . .** Washington, D.C., 1961-

A series of folders on water investigations in the United States, each one of which summarizes water resources investigations and studies in the State and presents a selected bibliography. Eight or ten pages in length, each includes a map of the State. Available from Water Resources Division, U.S. Geological Survey, Washington, D.C., 20242. Those folders available with date of latest edition are as follows:

Alabama, 1968	Idaho, 1968	Michigan, 1968
Alaska, 1972	Illinois, 1968	Minnesota, 1969
Arizona, 1973	Indiana, 1969	Mississippi, 1969
Arkansas, 1968	Iowa, 1968	Missouri, 1972
California, 1969	Kansas, 1968	Montana, 1969
Colorado, 1968	Kentucky, 1972	Nebraska, 1969
Connecticut, 1972	Louisiana, 1968	Nevada, 1972
Delaware, 1968	Maine, 1968	New Hampshire, 1968
Florida, 1969	Maryland & District of Columbia, 1968	New Jersey, 1968
Georgia, 1969	Massachusetts, 1968	New Mexico, 1969
Hawaii, 1969		New York, 1968

North Carolina, 1969	Rhode Island, 1968	Washington, 1968
North Dakota, 1969	South Carolina, 1968	West Virginia, 1968
Ohio, 1968	South Dakota, 1969	Wisconsin, 1968
Oklahoma, 1968	Tennessee, 1968	Wyoming, 1968
Oregon, 1973	Texas, 1972	
Pennsylvania, 1969	Utah, 1974	
Puerto Rico and	Vermont, 1968	
Virgin Islands, 1969	Virginia, 1969	

- 111 U.S. National Water Commission. **Water policies for the future**; final report to the President and to the Congress of the United States by the . . . Washington, D.C., GPO, 1973. 579 p.
[Another edition: Port Washington, N.Y., Water Information Center, Inc., 1973. 579 p.]

The National Water Commission was established by an act of Congress approved by the President on September 26, 1968. The Commission ended its work and published this report late in 1973.

The duties of the Commission as stated in Section 3(a) of the National Water Commission Act, were, "(1) review present and anticipated national water resource problems, making such projections of water requirements as may be necessary and identifying alternative ways of meeting these requirements - giving consideration, among other things, to conservation and more efficient use of existing supplies, increased usability by reduction of pollution, innovations to encourage the highest economic use of water, interbasin transfers, and technological advances including, but not limited to, desalting, weather modification, and waste water purification and reuse; (2) consider economic and social consequences of water resource development, including, for example, the impact of water resource development on regional economic growth, on institutional arrangements, and on esthetic values affecting the quality of life of the American people; and (3) advise on such specific water resource matters as may be referred to it by the President and the Water Resources Council."

A summary version of the final report was issued as: *New directions in U.S. water policy; summary, conclusions and recommendations from the final report* . . . Washington, D.C., GPO, 1973, 197 p.

Throughout its existence the National Water Commission endeavored to keep the public informed about its work and reports on the background studies undertaken as a part of the program of special studies were released through the National Technical Information Service of the U.S. Department of Commerce. A number of these reports are now appearing in hard-bound editions from non-government presses. A complete list of the background study reports which have been released is as follows:

Looking Ahead

- 112 Howe, Charles W., and others. **Future water demands**; the impacts of technological change, public policies, and changing market conditions on the

water use patterns of selected sectors of the United States ecology, 1970-1990. Washington, D.C., Resources for the Future, Inc., 1971. 102 p. (Available NTIS, PB 197-877).

- 113 National Academy of Sciences. Committee on Technologies and Water. **Potential technological advances and their impact on anticipated water requirements**. Washington, D.C., 1971. 246 p. (Available NTIS, PB 204 053).
- 114 Thompson, Russell G., and others. **Forecasting water demands**. Arlington, Virginia, National Water Commission, 1971. 337 p. (Available NTIS, PB 206 491).
- 115 Heady, Earl O., and others. **Agricultural water demands, future water and land use: effects of selected public agricultural and irrigation policies on water demand and land use**. Ames, Iowa State University, Center for Agricultural and Economic Development, 1971. [397] p. (Available NTIS, PB 206 790).
- 116 Madsen, Howard C., and others. **Future alternatives affecting the agricultural demand for water and land: the effects of soy protein meats and nitrogen fertilizer restrictions on future water and land use**. Ames, Iowa State University, Center for Agricultural and Rural Development, 1972. 89 p. (Available NTIS, PB 211 444).

Environmental Reports

- 117 Goldman, Charles R., and others. **Environmental quality and water development**. Arlington, Virginia, National Water Commission, 1971. 2 v. (Available NTIS, PB 207 113; PB 207 114).
[Another edition: San Francisco, California, W. H. Freeman and Company, 1973. 510 p.]
- 118 Litton, R. Burton, Jr., and others. **An aesthetic overview of the role of water in the landscape**. Arlington, Virginia, National Water Commission, 1971. 314 p. (Available NTIS, PB 207 315).
[Another edition: Port Washington, N.Y., Water Information Center, Inc., 1974. 314 p.]
- 119 Aukerman, Robert, and George I. Chesley. **Classifying water bodies: feasibility and recommendations for classifying water**. Fort Collins, Colorado

- State University, Department of Recreation Resources, 1971. 115 p. (Available NTIS, PB 208 667).
- 120 Stevens, Harry K., Thomas G. Bahr, and Richard A. Cole. **Recycling and ecosystem response: special study 8D recycling and ecosystem response to water manipulation.** East Lansing, Michigan State University, Institute of Water Research, 1972. 124 p. (Available NTIS, PB 208 669).
- 121 Hillhouse, William A., III and John L. DeWeerd. **Legal devices for accommodating water resources development and environmental values.** Denver, Colorado, Davis, Graham and Stubbs, 1971. 700 p. (National Water Commission Legal study 17). (Available NTIS, PB 208 835).
- 122 Kelnhofer, Guy J., Jr. **Preserving the Great Lakes.** Fort Collins, Colorado, Resources Development Consultants, Inc., 1972. 73 p. (Available NTIS, PB 211 442).
- 123 U.S. National Water Commission. **Consulting Panel on Waste Heat. The water use and management aspects of steam electric power generation.** Arlington, Virginia, 1972. 72 p. (Available NTIS, PB 210 355).

Water Pollution Control

- 124 Hines, N. William. **Public regulation of water quality in the United States.** Arlington, Virginia, National Water Commission, 1971. 632 p. (Legal study 18). (Available NTIS, PB 208 309).
- 125 U.S. National Water Commission. **Water pollution control in the United States; a panel report.** Arlington, Virginia, 1971. 259 p. (Available NTIS, PB 212 139).
- 126 Davis, George W., and Allison Dunham. **Wastewater management project, Muskegon County, Michigan; analysis of the Muskegon County, Michigan wastewater management project.** Chicago, Illinois, University of Chicago, Center for Urban Studies, 1971. 103+ p. (Available NTIS, PB 208 310).
- 127 Léwis, W. Cris, and others. **Regional economic development—the role of water.** Logan, Utah State University, Economics Department, 1971. 1 v. (Available NTIS, PB 206 372).

- 128 Rivkin/Carson, Inc., Washington, D.C. **Population growth in communities in relation to water resources policy.** Washington, D.C., 1971. 191 p. (Available NTIS, PB 205 248).
- 129 Davis, Robert K., and Steve H. Hanke. **Pricing and efficiency in water resource management.** Washington, D.C., The George Washington University, Natural Resources Policy Center, 1971. 273 p. (Available NTIS, PB 209 083).
- 130 Young, Robert A., and others. **Economic value of water: concepts and empirical estimates.** Fort Collins, Colorado State University, Department of Economics, 1972. 337 p. (Available NTIS, PB 210 356).
- 131 Butcher, Walter R., Norman K. Whittlesey, and John F. Orsborn. **Economic value of water in a systems context.** Pullman, Washington State University, 1972. 179 p. (Available NTIS, PB 210 357).

Analyses of Policies

- 132 Northcutt, Ely. **Authorization of federal water projects.** Arlington, Virginia, U.S. National Water Commission, 1971. 220 p. (Legal study 12). (Available NTIS, PB 206 096).
- 133 Allee, David J., and Helen M. Ingram. **Authorization and appropriation processes for water resource development.** Ithaca, New York, Cornell University, 1972. 1 v. (Available NTIS, PB 212 140).
- 134 Marshall, Harold E., and V. L. Broussalian. **Federal cost-sharing policies for water resources.** Washington, D.C., U.S. National Bureau of Standards, 1972. 260 p. (Available NTIS, PB 208 304).
- 135 Schmid, A. Allan. **Federal decisionmaking for water resource development: impact of alternative federal decision-making structures for water resource development.** East Lansing, Michigan State University, Department of Agricultural Economics, 1971. 99 p. (Available NTIS, PB 211 441).
- 136 Wisconsin. University. Water Resources Center. **Water resources policy in Wisconsin.** Madison, Wisconsin, 1971. 5 v. (Available NTIS, PB 204 928).

Analyses of Programs

- 137 Blood, Dwight M. *Inland waterway transport policy in the U.S.* Laramie, University of Wyoming, 1972. 1 v. (Available NTIS, PB 208 668).
- 138 Hogan, Harry J. *The acreage limitation in the Federal Reclamation Program.* Arlington, Virginia, National Water Commission, 1972. 317 p. (Available NTIS, PB 211 840).
- 139 Arey, David G., and Duane D. Baumann. *Alternative adjustments to natural hazards: a review and appraisal of federal water resource policies and programs related to the reduction of losses from flood, drought and hurricane.* Pittsburgh, Pennsylvania, University of Pittsburgh, 1971. 89 p. (Available NTIS, PB 211 922).
- 140 Price, Truman P. *Hydroelectric power policy.* Arlington, Virginia, National Water Commission, 1971. 58 p. (Available NTIS, PB 204 052).
- 141 Gladwell, John S. *Research and development in water resources: water resources research, its role in the total r&d spectrum.* Arlington, Virginia, National Water Commission, 1972. 221 p. (Special study no. 20a). Available NTIS, PB 210 823).

Preparation of Water Plans

- 142 U.S. National Water Commission. Consulting Panel on Water Resources Planning. *Water resources planning.* Arlington, Virginia, 1972. 168 p. (Available NTIS, PB 211 921).
- 143 DeLucia, Russell J., and others. *Systems analysis in water resources planning.* Cambridge, Massachusetts, Meta Systems, Inc., 1971. 393 p. (Available NTIS, PB 204 374).
[Another edition: Port Washington, N.Y., Water Information Center, Inc., 1975. 393 p.]
- 144 Warner, Katharine P. *State of the arts study of public participation in water resources planning process.* Arlington, Virginia, National Water Commission, 1971. 235 p. (Available NTIS, PB 204 245).

Institutional Arrangements

- 145 Muys, Jerome C. *Interstate water compacts: the interstate compact and federal-interstate compact.* Washington, D.C., National Water Commission,

1971. 455 p. (Report NWC-L-71-011 and Legal study 14). (Available NTIS, PB 202 998).

- 146 Solomon, Richard A. *The federal-state regional corporation, additional alternative arrangements for river basins and other regions: the federal-state regional government corporation.* Washington, D.C., Wilner, Scheiner & Greeley, 1971. 70 p. (National Water Commission. Report NWC-L-71-010 and Legal study 15). (Available NTIS, PB 202 997).
- 147 Hart, Gary Warren. *Institutional arrangements: river basin commissions, inter-agency committees, and ad hoc coordinating committees.* Washington D.C., National Water Commission, 1971. 127 p. (Report NWC-L-71-017 and part of Legal study 13, final report review draft). (Available NTIS, PB 204 244).
- 148 Ingram, Helen M. *The New England River Basins Commission: a case study looking into the possibilities and disabilities of a river basin commission established under Title II of the Water Resources Planning Act of 1965.* Arlington, Virginia, National Water Commission, 1971. 59 p. (Available NTIS, PB 204 375).
- 149 Ostrom, Vincent. *Institutional arrangements for water resource development: the choice of institutional arrangements for water resource development, with special reference to the California water industry.* Bloomington, Indiana University, 1971. 596 p. (Available NTIS, PB 207 314).
- 150 Liebman, Ernst. *The Water Resources Council.* Arlington, Virginia, National Water Commission, 1972. 224 p. (Legal study 11). (Available NTIS, PB 211 443).
- X 151 Wendell and Schwan. *Intergovernmental relations in water resources activities.* Washington, D.C., 1972. 609 p. (Available NTIS, PB 210 358). ✓
- 152 Urban Systems Research & Engineering, Inc. *Metropolitan water management: case studies and national policy implications.* Cambridge, Massachusetts, 1971. 435 p. (National Water Commission. Report NWC-EES-71-002). (Available NTIS, PB 199 493).
- 153 Delogu, Orlando E. *Legal and governmental structures for water management in metropolitan areas.* Portland, University of Maine, School of Law, 1971. 86 p. (Available NTIS, PB 204 051).

- 154 Thompson, Grant P. **Courts and water: the role of the judicial process.** Washington, D.C., Environmental Law Institute, 1972. 117 p. (Available NTIS, PB 211 974).

Special Studies in Water Law

- 155 Meyers, Charles J. **A historical and functional analysis of the appropriation system.** Arlington, Virginia, National Water Commission, 1971. 43 p. (Legal study 1). (Available NTIS, PB 202 617).
- 156 Meyers, Charles J., and Richard A. Posner. **Market transfers of water rights: toward an improved market in water resources.** Arlington, Virginia, National Water Commission, 1971. 49 p. (Report NWC-L-71-009 and Legal study 4, final report-review draft). (Available NTIS, PB 202 620).
- 157 Clyde, Edward W., and Dallin W. Jensen. **Administrative allocation of water.** Arlington, Virginia, National Water Commission, 1971. 126 p. (Legal study 3). (Available NTIS, PB 205 249).
- 158 Dewsnup, Richard L., and Charles J. Meyers. **Improvement of state water right records.** Washington, D.C., National Water Commission, 1971. 68 p. (Report no. NWC-L-71-007 and Legal study 4-A, final report). (Available NTIS, PB 202 618).
- 159 Dewsnup, Richard L. **Public access rights in waters and shorelands.** Arlington, Virginia, National Water Commission, 1971. 71 p. (Legal study 8-B). (Available NTIS, PB 205 247).
- 160 Dewsnup, Richard L. **Legal protection of instream water values.** Arlington, Virginia, National Water Commission, 1971. 58 p. (Legal study 8-A). (Available NTIS, PB 205 003).
- 161 Dewsnup, Richard L. **Legal aspects of water salvage.** Arlington, Virginia, National Water Commission, 1971. 85 p. (Legal study 8-C). (Available NTIS, PB 205 005).
- 162 Trelease, Frank J. **Federal-state relations in water law.** Arlington, Virginia, National Water Commission, 1971. 324 p. (Legal study 5). (Available NTIS, PB 203 600).

- X 163 Davis, Clifford. **Riparian water law: a functional analysis.** Arlington, Virginia, National Water Commission, 1971. 81 p. (Legal study 2). (Available NTIS, PB 205 004).
- 164 Corker, Charles E. **Ground water law, management and administration.** Arlington, Virginia, National Water Commission, 1971. 360 p. (Report NWC-L-72-026 and Legal study 6, final report-review draft). (Available NTIS, PB 205 527).
- 165 DeWeerd, John L., and Philip M. Glick. **A summary-digest of the Federal water laws and programs.** Washington, D.C., GPO, 1973. 205 p.
- 166 Dewsnup, Richard L., Dallin W. Jensen, and Robert W. Swenson. **A summary-digest of State water laws.** Washington, D.C., GPO, 1973. 826 p.

Means of Increasing Water Supplies

- 167 Bagley, Jay M., and others. **Extending utility of non-urban water supplies. Part I: Summary and recommendations.** Logan, Utah State University, Utah State University Foundation, 1971. 201 p. (Available NTIS, PB 207 115).
- 168 Johnson, Ralph W. **Major interbasin transfers: legal aspects.** Arlington, Virginia, National Water Commission, 1971. 206 p. (Legal study 7). (Available NTIS, PB 202 619).
- 169 Mann, Dean E. **Interbasin water transfers: political and institutional analysis.** Arlington, Virginia, National Water Commission, 1972. 157 p. (Available NTIS, PB 208 303).
- 170 Koelzer, Victor A. **Desalting.** Arlington, Virginia, National Water Commission, Engineering and Environmental Division, 1972. 112 p. (Available NTIS, PB 209 942).
- 171 Lackner, Jack D. **Precipitation modification.** Washington, D.C., National Water Commission, 1971. 1 v. (Report NWC-EES-71-005). (Available NTIS, PB 201 534).
- 172 Gavis, Jerome. **Wastewater reuse.** Arlington, Virginia, National Water Commission, 1971. 161 p. (Report NWC-EES-71-003). (Available NTIS, PB 201 535).

173 Sopper, William E. **Watershed management: water supply augmentation by watershed management in wildland areas.** University Park, Pennsylvania State University, School of Forest Resources, 1971. 149 p. (Available NTIS, PB 206 370).

174 Mack, Leslie E. **Ground water management in development of a national policy on water.** Springfield, Virginia, National Technical Information Service, 1971. 177 p. (National Water Commission. Report NWC-EES-71-004). (Available NTIS, PB 201 536).

175 U.S. Water Resources Council. **The nation's water resources: the first national assessment of the Water Resources Council.** Washington, GPO, 1968. 2 v.

This report is "the first national assessment" of the nation's water resources by the Council. It includes useful tables and narrative summarizing water supply and water requirements of the United States by regions; types of water use (domestic and municipal, industrial, electrical power, irrigation and livestock, navigation, recreation, fish and wildlife); and management of water and related lands.

The Water Resources Council was established by Public Law 89-80, July 22, 1965. It is an independent Executive Agency of the U.S. Government. Council activities encourage the conservation, development and utilization of water and related land resources on a comprehensive and coordinated basis by Federal, State, local government and private enterprise, in part through the review of framework and river basin plans. The recommendations of the Council resulting from this review are considered in subsequent authorization reports or other implementing actions. Authorization reports by agencies for that part of the comprehensive plan for which the agency is responsible are reviewed by the Council in regard to conformance to the basin plan.

The Council also administers a program of Federal financial grants to States to aid them in participating in comprehensive water and related land resource studies and in developing capability for preparing State water plans.

The Council's address is: U.S. Water Resources Council, Suite 800, 2120 L Street, N.W., Washington, D.C., 20037.

Among its functions, the Council is undertaking a program of planning studies for 21 water resource regions encompassing the Nation. These regional or river basin studies and framework studies are conducted by a river basin commission or other Federal-State inter-agency organization in a region. The studies provide general guides to future water resource development and they present an important body of information and data regarding each region. Several of these are cited below to indicate the breadth of the studies.

176 Pacific Northwest River Basins Commission. **Columbia-North Pacific Region.** Vancouver, Washington, 1970-1972. 20 v.

Contents: Main report; Appendix 1, History of study; App. 2, The region;

App. 3, Legal and administrative background; App. 4, v. 1 & v. 2, Land and mineral resources; App. 5, v. 1 & v. 2, Water resources; App. 6, Economic base and projections; App. 7, Flood control; App. 8, v. 1 & v. 2, Land measures and watershed protection; App. 9, Irrigation; App. 10, Navigation; App. 11, Municipal and industrial water supply; App. 12, Water quality and pollution control; App. 13, Recreation; App. 14, Fish and wildlife; App. 15, Electric power; App. 16, Comprehensive framework plans.

177 Susquehanna River Basin Coordinating Committee. **Susquehanna River Basin comprehensive study.** Mechanicsburg, Penn., 1970. 18 v.

Contents: Preview; Appendix A, Study history; App. B, pt. I, New York; App. B, pt. II, Pennsylvania; App. B, pt. III, Maryland; App. C, Economics and geography; App. D, Hydrology; App. E, Flood control; App. F, Water supply and water quality; App. G, Recreation; App. H, Power; App. I, Mineral resources; App. J, Land treatment and management; App. K (1), Structural planning alternatives; App. K (2), Structural measures; App. K (3), Management programs; Suppl. A, Plan formulation; Suppl. B, Program summary.

178 North Atlantic Regional Water Resources Study Coordinating Committee. **North Atlantic regional water resources study.** Boston, Mass., 1972. 25 v.

Contents: v. 1, Report; v. 2, Annex 1 to report; v. 3, Annex 2 to report; v. 4, Appendix A, History of study; v. 5, App. B, Economic base; v. 6, App. C, Climate, meteorology and hydrology; v. 7, App. D, Geology and ground water; v. 8, App. E, Flood damage reduction and water management for major rivers and coastal areas; v. 9, App. F, Upstream flood prevention and water management; v. 10, App. G, Land use and management; v. 11, App. H, Minerals; v. 12, App. I, Irrigation; v. 13, App. J, Land drainage; v. 14, App. K, Navigation; v. 15, App. L, Water quality and pollution; v. 16, App. M, Outdoor recreation; v. 17, App. N, Visual and cultural environment; v. 18, App. O, Fish and wildlife; v. 19, App. P, Power; v. 20, App. Q, Erosion and sedimentation; v. 21, App. R, Water supply; v. 22, App. S, Legal and institutional environment; v. 23, App. T, Plan formulation; v. 24, App. U, Coastal and estuarine areas; v. 25, App. V, Health aspects.

Studies are underway in 17 of the regions. Study names and contacts are as follows:

179	Region	Study name	Current contact
	New England	North Atlantic regional framework	Chairman
		Connecticut River Basin comprehensive	New England River Basins Commission
		Connecticut River Basin supplemental	55 Court Street
		Long Island Sound regional	Boston, Mass. 02108
		Southeastern New England	

Region	Study name	Current contact
Upper Colorado	Upper Colorado region framework Analytical Summary Report (Covers the four studies now referred to as the Pacific Southwest studies: Upper Colorado, Lower Colorado, Great Basin, and California Frameworks.)	Chairman Pacific Southwest Inter-Agency Committee Department of Natural Resources 435 State Capitol Salt Lake City, Utah 84114
Lower Colorado	Lower Colorado region framework	Chairman Pacific Southwest Inter-Agency Committee Department of Natural Resources 435 State Capitol Salt Lake City, Utah 84114
Great Basin	Great Basin framework	Chairman Pacific Southwest Inter-Agency Committee Department of Natural Resources 435 State Capitol Salt Lake City, Utah 84114
California	California Region framework	Chairman Pacific Southwest Inter-Agency Committee Department of Natural Resources 435 State Capitol Salt Lake City, Utah 84114

Region	Study name	Current contact
Columbia-North Pacific	Pacific Northwest comprehensive Columbia-North Pacific region framework Willamette Basin comprehensive Puget Sound and adjacent waters comprehensive	Chairman Pacific Northwest River Basins Commission 1 Columbia River Vancouver, Washington 98660
Hawaii	Hawaii regional study	Study Manager P.O. Box 373 Honolulu, Hawaii 96809

MAPS AND ATLASES

☐ For information on U.S. Geological Survey topographic maps and hydrologic investigations atlases, see the Survey's **Publications of the Geological Survey . . . (51)**. For domestic navigational charts (sailing and general charts, small craft nautical charts, and tidal current charts), see the **National Ocean Survey's Nautical chart catalog . . . (1298)**. Navigational charts of domestic and foreign waters are produced by the U.S. Naval Oceanographic Office (formerly the Hydrographic Office); see their **Catalog of nautical charts and publications (1299)**.

A useful bibliographic survey of geologic maps by Mark W. Pangborn Jr. is to be found in Ward and Wheeler's **Geologic reference sources (1314)**.

190 Geraghty, James J., and others. **Water atlas of the United States**. Port Washington, N.Y., Water Information Center, 1973. 1 v.

122 plates presenting national water data with accompanying textual description of each plate. Time dependent information is dated and sources of information are given.

191 U.S. Geological Survey. **The national atlas of the United States of America**. Washington, D.C., 1970. 417 p.

765 maps which present in cartographic format the principal characteristics of the country including its physical features, hystorical evolution, economic activities, etc. Of special interest here are sections covering marine features, soils, climate and water.

192 U.S. Soil Conservation Service. **Atlas of river basins of the United States**;

drainage areas of more than 700 square miles, land resource regions and major land resource areas. 2nd ed. Washington, D.C., GPO, 1970. 1 v.

82 maps of river basins or segments covering the 50 states of the United States. Delineation of rivers and tributaries is limited to those having drainage areas of 700 square miles or more. Map sheets are at a scale of 1:1,000,000 and are printed in four colors.

GLOSSARIES

- 193 U.S. Army Topographic Command. *Glossary of mapping, charting, and geodetic terms*. 3rd ed. Washington, D.C., U.S. Department of Defense, 1973. 281 p.

"This glossary has been prepared under the direction of the Department of Defense to satisfy the need for effective communication and mutual understanding of the terminology used in mapping, charting, and geodesy."

PUBLICATION LISTS

- 194 United Nations Educational, Scientific and Cultural Organization. *Scientific maps and atlases and other related publications, catalog 1971-1972*. Paris, UNESCO, 1971. 57 p.

Catalog of maps (geology, minerals, hydrogeology, climate, soils, vegetation, oceanography) published by UNESCO, and of related publications in ecology and natural resources, geology and geophysics, geography, soil science, hydrology, and oceanography.

BIOLOGY. AGRICULTURE. CHEMISTRY.

☐ Only general works are noted here. Those aspects of these fields which are pertinent to water resources research are covered in the subject section of this book.

GUIDES AND MANUALS

- 200 Blanchard, J. Richard, and Harald Ostvold. *Literature of agricultural research*. Berkeley, California, University of California Press, 1958. 231 p.

A classified guide to the reference literature presented by general fields: agriculture; plant sciences; animal sciences; physical sciences; food and nutrition; and social sciences. Lists bibliographies, abstract journals, indexes, encyclopedias, dictionaries, handbooks, directories, periodical lists, historical and biographical works, abbreviations, etc.

BIBLIOGRAPHY

- 201 *Bibliography of agriculture*. New York, Macmillan Information, 1942- to date.

A monthly index to the world-wide literature of agriculture and allied sciences, based upon the indexing records prepared by the United States National Agricultural Library. Includes journal articles, pamphlets, government documents, special reports, proceedings, etc. (Books, new serials and other materials are announced in the *National Agricultural Library catalog* published by Rowman and Littlefield.) Arranged by broad subject, several of which have special application here: forest management; plant ecology, pesticides; water resources and management; general natural resources and environmental pollution. Indexed by author, subject, geographic reference, and corporate author.

INDEXES AND ABSTRACT JOURNALS

- 202 *Biological abstracts*. Philadelphia, BioSciences Information Service, 1926- to date.

Published semimonthly with annual cumulations. This is the major abstracting journal in the field of theoretical and applied biology. Covers world literature, now reviewing over 7500 periodicals. Arranged in broad subject categories, some of those of relevance here being: Ecology (environmental biology), with subsections on limnology, bioclimatology and biometeorology, plants, and aquatic wildlife; Public health, with subsections on air, water and soil pollution, sewage disposal and sanitary measures; and Pest control, with subsections on pesticides and herbicides.

Currently an arrangement is in effect whereby the relevant references in *Biological abstracts* are supplied to the Water Resources Scientific Information Center for use in that Center's semimonthly *Selected water resources abstracts* (see item 44).

- 203 *Biological and agricultural index*. New York, H. W. Wilson Company, 1919 to date.

A cumulative subject index to English language periodicals. Appears monthly. Fields covered which are of pertinence here include: agricultural chemicals, agricultural engineering; agricultural economics; conservation; ecology; marine biology; and pesticides. Among the materials indexed are farm extension and college station bulletins, reports of horticultural and agricultural associations, federal and state departments, boards and stations. No author index.

- 204 *Bioresearch index*. Philadelphia, BioSciences Information Service of Biological Abstracts, 1965- to date.

A monthly publication which contains indexes to research reports not covered in the semi-monthly issues of *Biological abstracts*. Covers symposia, review

journals, translated journals, nomenclatural rules, letters, notes, technical data reports, natural history journals, annual institutional reports, bibliographies and guides, and trade journals. Relevant here is the coverage of such publications as agricultural experiment station titles, Forest Service research notes and papers, and geology notes. Instead of abstracts, the format for this periodical utilizes reference citations (titles) which are editorially supplemented with key words.

- 205 Chemical abstracts. Columbus, Ohio, American Chemical Society, Chemical Abstracts Service Division, 1907- to date.

A weekly service with a subject arrangement, the sections "Sewage and wastes" and "Water" being of pertinence here. Approximately 3500 abstracts a year in these particular sections cover water chemistry, quality of drinking water, quality of industrial water, treatment of sewage and effluents, and sea water desalination.

DICTIONARIES

- 206 De Vries, Louis. French-English science dictionary for students in agricultural, biological, and physical sciences. 3rd ed. New York, McGraw-Hill, 1962. 655 p.

43,000 entries including terms of the agricultural, biological, and physical sciences, as well as many literary terms.

- 207 U.S. National Agricultural Library. Agricultural/biological vocabulary. Washington, D.C., 1967. 2 v.

A thesaurus in two parts, one part an alphabetical list and the other, a categorized list. Compiled to facilitate information services by providing a common language for information storage and retrieval systems.

HANDBOOKS

- 208 Weast, Robert C. Handbook of chemistry and physics. 53rd ed. (1972-73). Cleveland, Ohio, Chemical Rubber Company, 1973. 1 v.

Now appearing annually, an all-purpose handbook on constants and formulas in the fields of chemistry and physics. Detailed index guides user to tables and charts arranged under six broad sections: mathematical tables; elements and inorganic compounds; organic compounds; general chemical; general physical constants; and miscellaneous.

CONFERENCES AND MEETINGS

☐ A listing of upcoming meetings in the water resources field appears monthly in the American Water Resources Association's Hydata (40). Also, a Meetings Reg-

ister has been established by the U.S. Water Resources Council to provide information on major meetings in the water and related land resources fields; interested parties may telephone the Council to obtain meeting schedules or to add meetings to the Register.

ABSTRACTS AND INDEXES

- 215 Current index to conference papers: science and technology. New York, CCM Information Corporation, 1970- to date.

Published monthly with an annual cumulation. Arranged in four sections: main entry, subject index, author index, and meeting title and sponsor index. Gives, in main entry section, names and dates of conferences with information on all papers delivered at each conference.

DIRECTORIES

- 216 Scientific meetings. New York, Special Libraries Association, 1957- to date

A quarterly publication listing scientific, technical, medical, health, engineering, management organizations, and universities and colleges that are sponsoring future national, international, and regional meetings, symposia, colloquia, and institutes.

INFORMATION TRANSFER

☐ The following titles relate to information storage and retrieval, and to the general problem of information transfer in the fields of water resources and water technology.

- 220 Ahn, Michael C., James H. Mars, and Robert E. Mier. The Northeast Water Resources Information Terminal: an experiment in information storage and retrieval. Ithaca, New York, Cornell University, Water Resources and Marine Sciences Center, 1973. 112 p. (Technical report no. 73).

An account of the operation of the Northeast Water Resources Information Terminal (NEWIT), the Water Resources Scientific Information Center, (WRSIC) of the Office of Water Resources Research, U.S. Department of the Interior, and their information retrieval program (WRSIC/GIPSY).

- 221 Banks, Harvey O., and Charles G. Wolfe. A plan for a comprehensive water resources research information exchange system. San Francisco, Leeds, Hill and Jewett, Inc., 1969. 137 p.

A study of the information gathering and dissemination activities of the O:

Office of Water Resources Research (for whom this report was made), and the 51 State Water Resources Research Institutes.

- ✓ 222 Battelle Memorial Institute. **Design and operation of an information center on analytical methodology.** Prepared for the Environmental Protection Agency. Washington, D.C., 1971. 175 p. (Water pollution control research series 16020 FSO 06/71).

Study of the design and operation of a pilot analytical methodology information/storage and retrieval system tailored to the needs of the Analytical Quality Control Laboratory. Complete discussion of all activities involved.

- ✓ 223 Darby, Ralph L. and Robert L. Little. **Operation of the Analytical Methodology Information Center.** Washington, D.C., U.S. Environmental Protection Agency, Office of Research and Monitoring, 1973. 162 p. (Environmental monitoring series EPA-R4-73-011).

Details are given for the first year of full-scale operation of the Analytical Methodology Information Center which was designed to collect, process, and disseminate information on analytical methods related to aquatic and marine environments. **TOWNE TD/380/D37**

- ✓ 224 International Conference on Transfer of Water Resources Knowledge, 1st, Colorado State University, Fort Collins, 1972. **Transfer of water resources knowledge; proceedings.** Edited by Evan Vlachos. Fort Collins, Colo., Water Resources Publications, 1973. 540 p.

A series of papers on the transfer of knowledge in the field of water resources. Includes both national and international transfer experiences with descriptions of various systems, agency programs, and the role of certain professional organizations in furthering the dissemination of knowledge.

- ✓ 225 Johanningsmeier, Walter F., Robert E. Frye, and Robert F. Nasal. **Analysis of serials related to water resources.** Riverdale, Md., Wolf Research and Development Corporation, 1969. 135 p.

Prepared for Office of Water Resources Research; available from NTIS, PB 185 706. Identifies, records and analyzes significant primary and secondary sources related to water resources, specifically periodic scientific and technical journals, non-Federal irregular serials, and abstracting and indexing publications.

- ✓ 226 Morrison, Jack L., Larry G. Greenwell, and Neil B. Hilsen. **Development of a prototype search and retrieval network for water resource information: WRSIC retrieval system.** Norman, University of Oklahoma Research Institute, 1973. 109 p.

"This report arrays the final summation of project activity engaged in by the University of Oklahoma Research Institute for the development and subsequent evaluation of a prototype information network for retrieval and dissemination of the Water Resources Scientific Information Center's water resources research information."

- 227 National environmental information symposium: an agenda for progress held at Cincinnati, Ohio, on 24-27 September 1972. Washington, D.C., U.S. Environmental Protection Agency, 1973. 2 v.

Volume 1 contains agenda and Volume 2 contains all of the general session addresses and most of the working session papers and forum session reports. Working sessions were structured in four categories: scientific and technical; legal, legislative and regulatory; management and planning; and socioeconomic. Information services covered in each of the categories includes information and data centers, publications, and document services and referral activities.

- ✓ 228 U.S. Federal Advisory Committee on Water Data. **Design characteristics for a national system to store, retrieve and disseminate water data.** Washington, D.C., U.S. Geological Survey, Office of Water Data Coordination, 1971. 31 p.

Prepared by the Federal Interagency Water Data Handling Work Group, USGS. Presents the concept of a National Water Data Exchange (NAWDEx), a confederation of Federal and non-Federal organizations to foster the exchange of water data.

- 229 U.S. Water Resources Scientific Information Center. **Instructions for abstracting and indexing scientific and technical documents for the Water Resources Scientific Information Center (WRSIC).** Denver, Colorado, 1968. 13 p.

- 230 ——. **User manual, water resources information network.** Washington, D.C., 1972. 74 p.

Coordinated by Oklahoma University Research Institute and Merrick Computing Center. A manual for users of the computer information retrieval system "GIPSY/WRSIC".

- 231 Wellisch, Hans. **A survey of indexing and abstracting services for water resources engineering.** College Park, University of Maryland, Water Resources Research Center, 1972. 95 p. (Technical report no. 11).

A survey evaluating 42 abstracting and indexing services in the fields of water resources or water technology. Gives criteria on basis of which users can choose those services best suited to their interests.

THESES

BIBLIOGRAPHY

- 235 Chronic, John and Halka Chronic. *Bibliography of theses written for advanced degrees in geology and related sciences at universities and colleges in the United States and Canada through 1957*. Boulder, Colorado, Pruett Press, 1958. 1 v.

Lists over 11,000 theses titles. Indexed.

———. *Bibliography of theses in geology, 1958–1963*. Washington, D.C., American Geological Institute, 1964. 1 v.

11,000 titles listed. As with earlier edition, index is provided giving geological names, universities, and "general" terms.

- 236 Deane, Mary. *Theses on water submitted to universities in California through June 1969*. Berkeley, University of California, Water Resources Center Archives, 1971. 152 p. (Archives series report no. 22).

Includes theses submitted for advanced degrees from 1900 to 1969 at the University of California, Stanford, California Institute of Technology, and the University of Southern California. 1686 references arranged alphabetically by author with a subject index.

- 237 Ferguson, Stanley. *Bibliography of water-related theses and dissertations written at the University of Texas at Austin, 1897–1970*. Austin, University of Texas, Center for Research in Water Resources, 1970. 54 p. (CRWR-68).

Arranged in groups by department in which thesis was written.

- 238 McCann, James A., and Gail G. Smith. *An annotated bibliography of the masters theses and doctoral dissertations on water resources and their uses, 1930–1970*, University of Massachusetts, Amherst. Amherst, University of Massachusetts, Water Resources Research Center, 1971. 43 p. (Massachusetts Cooperative Fishery Unit Contribution no. 22).

Listed in alphabetical order by author within department. Subject index included.

INDEXES AND ABSTRACT JOURNALS

- 239 *Dissertation abstracts international* . . . Ann Arbor, Michigan, Xerox University Microfilms, 1938– to date.

This journal of abstracts was first issued in 1938 when the publication of doctoral dissertations on microfilm was begun by University Microfilms. Origin-

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ally a quarterly entitled *Microfilm abstracts*, the publication was renamed *Dissertation abstracts* in 1956 when sponsorship of the dissertations publishing program was undertaken by the Association of Research Libraries. When, in 1969, dissertations from European universities were added to the publication, the name was changed to *Dissertation abstracts international*. Publication frequency is monthly and two sections are issued: Section A lists dissertations in the humanities and social sciences; Section B those in the physical sciences and engineering. There is an annual cumulated author and subject index. There is also a comprehensive cumulative index in nine volumes titled *The retrospective index to Dissertation Abstracts International Volumes I–XXIX, 1938–1969*.

- 240 Xerox University Microfilms. *Comprehensive dissertation index 1861–1972*. Ann Arbor, Michigan, 1973. 37 v.

Subject and author index to every doctoral dissertation honored by a degree-granting institution in the United States through 1972. Grouped by discipline and assembled into individual subject indexes which are arranged alphabetically by keyword. Entries cite pertinent references in *Dissertation abstracts international*, *American doctoral dissertations*, Library of Congress listings, and the lists of individual schools.

WATER RESOURCES RESEARCH. EDUCATIONAL PROGRAMS.

GUIDES AND MANUALS

- 245 Toebes, C., and V. Ouryev. *Representative and experimental basins; an international guide for research and practice*. Paris, United Nations Educational, Scientific and Cultural Organization, 1970. 348 p. (UNESCO Studies and reports in hydrology no. 4).

Deals with the establishment and operation of representative and experimental basins and aims at suggesting desirable methods and possible avenues of research.

- 246 U.S. Congress. House. Committee on Science and Astronautics. Subcommittee on Science, Research, and Development. *What about water? A staff survey of current research on water resources and utilization, prepared for . . . Ninety-second Congress, Second Session*. Washington, D.C., GPO, 1972. 59 p. (Committee print, Serial Y).

" . . . an inventory of who is doing what on water research in the Federal Government, in selected States, various local agencies and some private industry. The survey was conducted and the report was prepared by Mr. Philip P. Dickerson . . ."

BIBLIOGRAPHY

- 247 National Advisory Committee on Water Resources Research. *Bibliography of water resources research*. Ottawa, Canada, 1972. 80 p.

Paper and theses resulting from research at Canadian academic institutions, this research funded under the Water Resources Research Support Program of Environment Canada.

DIRECTORIES

- 248 Europa Publications, Ltd. *The world of learning, 1973-74*. 24th edition. London, 1973. 2 v.

Brief descriptions of societies and research institutes, museums, libraries, universities, and other educational institutions of all countries. Includes a section on international organizations. Arranged by type of organization within country; indexed by names of institution.

- 249 *Graduate studies in water resources*. Universities Council on Water Resources, 1970- to date.

A brochure now appearing annually and available from the Executive Secretary of the Council. Gives brief information about the educational opportunities in water resources at universities in the United States which are members of the Council. 47 States were represented in the 1973-74 edition of this directory. Current Executive Secretary: Dr. Warren Viessman, Water Resources Research Institute, University of Nebraska, East Campus, Lincoln, Nebraska 68503.

- 250 Quigg, Philip W. *World directory of environmental education programs; post-secondary study and training in 70 countries*. Prepared by the International Institute for Environmental Affairs in cooperation with the Institute of International Education. Ann Arbor, Michigan, R. R. Bowker, 1973. 289 p.

1068 environmental education programs, offered in 740 colleges, universities, technical institutes, specialized schools, and international centers in the U.S. and abroad are identified and described. Includes indexes.

ANNUALS

- 251 *Federal water resources research program for . . . [calendar year]*. Washington, D.C., U.S. Federal Council for Science and Technology, 1965- to date.

An annual composite record account of the total Federal water resources research program. Each agency of government with a water resources research program is reported on individually.

- 252 *Research in progress during calendar year . . .* Durham, North Carolina. U.S. Army Research Office, 1962- to date.

A compilation which describes on an annual basis research sponsored by the Chief of Research and Development (i.e. basic research in mathematics, physical and environmental sciences). Available from: U.S. Army Research Office, Box CM, Duke Station, Durham, N. C., 27706.

- 253 *Research reports supported by Office of Water Resources Research under the Water Resources Research Act of 1964*. Washington, D.C., U.S. Water Resources Scientific Information Center, 1969/70- to date.

Issued annually 1969/70 and 1970/71. Began to appear quarterly with issue dated July-December 1971. Reports and theses listed under one of the headings: "Title I", "Title II", and "Other". Annual cumulations.

- 254 U.S. Environmental Protection Agency. *Active research projects reported to the National Environmental Research Center, Cincinnati, Ohio*; a compilation of descriptive summaries of intramural and extramural research projects. Cincinnati, Ohio, The Agency's National Environmental Research Center, 1972. 742 p.

Covers period July 1, 1971-June 30, 1972. "First of a series of comprehensive technical information reports on on-going research projects brought together in the Center . . . which were planned and developed in predecessor organizations from different agencies."

- 255 *Water resources research catalog*. Washington, D.C., U.S. Water Resources Scientific Information Center, 1965- to date.

Issued annually. Presents summary descriptions of current research on water resources problems. Issued in two parts, part one comprising the summaries of research projects, and part two, the subject, investigator, contractor, and reporting agency indexes.

DATA ACQUISITION

GUIDES AND MANUALS

- 10 Rantz, S. E., and T. E. Eakin. *A summary of methods for the collection and analysis of basic hydrologic data for arid regions*. Menlo Park, Calif., U.S. Geological Survey, Water Resources Division, 1971. 125 p.

"A thorough search of the literature and personal communication with workers in the field of arid-land hydrology provided the basis for this summary methods used in both reconnaissance and detailed hydrologic studies."

- 11 U.S. Federal Interagency Work Group on Designation of Standards for Water Data Acquisition. *Recommended methods for water-data acquisition; preliminary report of the Federal Interagency Work Group on Designation of Standards for Water Data Acquisition*, impaneled by the U.S. Geological Survey, Office of Water Data Coordination. Washington, D.C., 1972. 1 v.

Selects and lists methods for gathering data on surface water, groundwater, water-borne chemicals, sediments, bacteria and use of automatic water-quality monitors.

- 12 U.S. Water Resources Council. *The water-use data base: the report of the Task Force on Water-Use Data to the Planning Committee of the Water Resources Council*. Washington, D.C., 1969. 230 p.

A review of Federally produced water-use data, with recommendations of improvements so as to better serve future assessments and programs. Full bibliographic references are given for existing published series.

BIBLIOGRAPHY

- 13 Pacific Southwest Inter-Agency Committee. Hydrology Subcommittee. *Bibliography of unpublished hydrologic data - Pacific Southwest region*. 1960. 26 p.
- Guide to unpublished reports by State and Federal agencies. Arranged by Colorado River Basin, Great Basin, and Pacific Slope. No annotations.

DATA COMPILATIONS

- 14 *Catalog of information on water data*. Washington, D.C., U.S. Geological Survey, Office of Water Data Coordination, 1966- to date.

The Catalog is a computer file of information about water-data-acquisition activities, supplemented by station-location maps. The information contained in

the Catalog file is reported by Federal, State, and local agencies, and private organizations that acquire water data directly in the field and laboratory. The Catalog is, thus, a file of information about water-data-acquisition activities and not a file of the actual water data which must be obtained from the reporting agencies.

Prior to the latest edition (Fifth, 1972), information on water-data activities was listed in four categories on a nation-wide basis, each of which was printed as a separate section of the Catalog. Three of the sections, "Water Quality", "Surface Water", and "Ground Water", pertained to the acquisition of data on a recurrent basis at specific locations (stations) for a period of three years or more. The fourth section, "Areal Investigations and Miscellaneous Water Data Activities", was concerned with specific projects that involved field or laboratory measurements or observations not included in another section of the Catalog.

In the fifth edition the former "Surface Water" and "Water Quality" sections of the Catalog are presented in three parts within 21 separate volumes. Each volume covers a water resources region.

The 1968 edition of the "Ground Water" section and the 1970 edition of the "Areal Investigations and Miscellaneous Water Data Activities" section have not been updated or reprinted at this time.

Information in each of the 21 volumes of the 1972 edition of the Catalog reflects activities as of January 1, 1972 for those stations being operated on a recurrent basis for a period of three years or more. Each volume has three parts containing information about stations in a particular category: Part A - Stream flow and stage; Part B - Quality of surface water; Part C - Quality of groundwater.

The information given for each activity includes: (1) identification and location of stations; (2) major types of data collected; (3) frequency of data collection; (4) the form in which the data are stored, and (5) agencies reporting the activities.

A Digest of the catalog of information on water data, 1972, by F. H. Pauszek, is available in a U.S. Geological Survey "Open File Report". This digest highlights some of the Catalog information by means of illustrations and tables with brief explanations.

- 995 Holland, William Thompson, and Clarence S. Jarvis. *Inventory of unpublished hydrologic data*. Washington, D.C., GPO, 1938. 77 p. (U.S. Geological Survey. Water-supply paper no. 837).

Prepared for the Subcommittee on Small Water-Storage Projects of the Water Resources Committee, Natural Resources Committee. "... includes the location, type of station, years of record, and name and address of official or agency making the record and is designed to inform engineers of existing unpublished records and of their character and scope."

- 996 United Nations Educational, Scientific and Cultural Organization. *List of International Hydrological Decade stations of the world*. Paris, UNESCO, 1969. 148 p. (UNESCO Studies and reports in hydrology no. 6).

D.S. only or internat'l?

List compiled to provide information to countries participating in the International Hydrological Decade. List includes the names and principal characteristics of all stations selected, presented in five tables: River stations, Lake stations, Pan-evaporation stations, Lysimeter stations, and Groundwater stations.

LAWS AND LEGISLATION

A general survey of information-control tools dealing with law and the environment is *Bibliographic control in law and the environment – surviving an explosion*, by George S. Grossman (1006).

GUIDES AND MANUALS

100 Clark, Robert Emmet. *Waters and water rights*; a treatise on the law of waters and allied problems, eastern, western, federal. Indianapolis, Indiana, Allen Smith Company, 1967–1972. 6 v.

Comprehensive treatise on water law in the United States, the work of a number of specialists in water law. Covers Federal-State relations; Federal reclamation law; interstate water rights; Indian water rights; international lakes and rivers; pollution and water quality control; Eastern water law; Western water law; State law of surface and ground waters; local and special laws; municipalities; water distribution agencies; flood control and watershed protection; Federal Water Commission and other Federal agencies; drainage law; eminent domain; practice and procedures in water law.

101 United Nations. Economic Commission for Asia and the Far East. *Guidelines for the drafting of water codes: general principles and legislative examples*. New York, 1973. 104 p. (Water Resources Series No. 43).

A guideline to the type of provisions usually found in basic legislative documents dealing with water management.

BIBLIOGRAPHY

102 Boyles, Eleanor J. *Water rights bibliography*. East Lansing, Michigan State University, Department of Resource Development, 1958. 51 p.

“... intended to provide information of a current nature on a wide variety of legal water problems.” Concentrates on papers by people in the natural sciences.

103 Browne, Mary Lilla. *The legal aspects of atomic power plant development; a selective bibliography*. Sacramento, State of California Department of Water Resources, 1970. 15 p.

Divided into four sections: background; regulation, licensing; liability, safety; and insurance.

1004 ———. *Materials, federal-state relationships and conflicts in regard to water resources; a bibliography and digest*. Sacramento, State of California Department of Water Resources, 1970. 1 v.

Cites statutes, gives citations, and cases. “Scope is limited to the use of water *per se*. Not included is the development of power resources and the Federal Power Commission, atomic energy, or excess lands.”

1006 Grossman, George S. *Bibliographic control in law and the environment – surviving an explosion*. Monticello, Illinois, Council of Planning Librarians, 1972. 27 p. (Exchange Bibliography 334).

A paper discussing the problems of dealing with information-control tools in this field. Considers the tools of legal research and the tools which specifically serve environmentalists.

1007 Holmes, Beatrice H., George G. Simons, and Harold H. Ellis. *State water-rights laws and related subjects: a supplemental bibliography, 1959 to mid-1967*. Washington, D.C., GPO, 1972. 268 p. (U.S. Department of Agriculture. Miscellaneous publication no. 1249).

Supplements the bibliography compiled by Jack R. Turney and Harold H. Ellis in 1962. “Included in this supplement are citations, with major topics, or more recent publications on State water-rights laws. Also cited are related publications, including works on Federal, interstate, and international matters involving or related to water rights.”

1008 Jacobstein, J. Myron and Roy M. Mersky. *Water law bibliography, 1847–1965; source book on U.S. water and irrigation studies: legal, economic and political*. Silver Springs, Md., Jefferson Law Book Company, 1966. 249 p.

———. Supplement I, 1966–67. 1969. 138 p.

Non-legal materials included with potential usefulness to the lawyer as the criterion. Arrangement by categories: general, legal, economic, irrigation, states (U.S.), and areas and projects. No annotations. Supplement picks up water pollution legal materials which had been excluded in basic volume.

1009 Meyer, Hermann H. B. *List of references on water rights and the control of waters*. Washington, D.C., Library of Congress, 1914. 111 p.

- 1010 Hellman, Florence S. **Water rights and the control of waters: references supplementary to the printed list issued in 1914.** Washington, D.C., Library of Congress, Division of Bibliography, 1931. 26 p.
International coverage; books and periodical titles.
- 1011 Radosevich, George E., and others. **Water law and its relationship to environmental quality: a bibliography of source material.** Fort Collins, Colorado State University, Environmental Resources Center, 1973. 126 p. (Information series no. 6).
A partial bibliography of legal, institutional and related source materials on the subject of water law in relationship to environmental quality and of related discussions of the natural resource aspects of water resources. Specific emphasis on fish and wildlife habitat and recreational and aesthetic aspects. Only quantity characteristics are covered. Sources divided into primary and secondary categories within sections on States, interregional, and Federal. No annotations.
- 1012 Turney, Jack R., and Harold H. Ellis. **State water-rights laws and related subjects: a bibliography.** Washington, D.C., GPO, 1962. 199 p. (U.S. Department of Agriculture. Miscellaneous publication no. 921).
In two parts, the first dealing with State water-rights laws includes law review articles published in period 1940-1959. Annotations give list of subjects covered in each citation. Part two includes: general list, *American law reports* (1940-1959), selected law review articles prior to 1940, selected *American law reports* before 1940, Federal matters, and interstate and international matters. Publication and author indices are included.
- 1013 U.S. Department of Agriculture. **State water rights laws and related subjects: a supplemental bibliography, 1959 to mid-1967.** Washington, D.C., GPO, 1972. 268 p.
Includes citations, under major topics, of recent publications on state water-rights laws. Also cited are related publications, including works on federal, interstate, and international matters involving or related to water rights. Includes a publication index and an author index.
- 1014 U.S. Water Resources Scientific Information Center. **Legal aspects of drainage in New England; a bibliography.** Washington, D.C., 1971. 125 p. (WRSIC 71-212).
80 references with abstracts. Indexed.

- 1015 ———. **Legal aspects of water pollution in Delaware, Maryland and Virginia; a bibliography.** Washington, D.C., GPO, 1972. 127 p. (WRSIC 72-206).
- 1016 ———. **Legal aspects of water pollution in New England; a bibliography.** Washington, D.C., GPO, 1971. 1 v. (WRSIC 71-213).
- 1017 ———. **Legal aspects of water pollution in New Jersey and Pennsylvania; a bibliography.** Washington, D.C., GPO, 1972. 223 p. (WRSIC 72-217).
Gives citations with abstracts included. Produced from an information base comprising *Selected water resources abstracts*.

HANDBOOKS

- 1018 Brecher, Joseph J. and Manuel E. Nestle. **Environmental law handbook.** Berkeley, California, University of California, Continuing Education of the Bar, 1970. 343 p.
Designed as a survey of the field with material on litigation, the role of the lawyer, administrative proceedings, and pollution.

ANNUALS

- 1019 **Environmental law reporter.** Washington, D.C., Environmental Law Institute, 1971- to date.
"An annual publication of twelve monthly issues", presented in looseleaf form. Conveys information in the environmental law field, with some evaluative commentary, under the following headings: summary and comments; litigation, administrative proceedings, statutory and administrative materials, articles and notes, bibliography and facsimile service, and indexes.
Subscribers can avail themselves of a service whereby materials reported upon can be copied and purchased.

STATUTES

- 1020 Autocomp Incorporated, Washington, D.C. **Solid waste laws in the U.S. territories and states.** Washington, D.C., U.S. Environmental Protection Agency, 1972. 502 p.

A compendium of state and territorial solid waste legislation and related laws. Arranged by state or territory with a master index.

1021 **Federal register.** Washington, D.C., GPO, 1936— to date.

The *Federal register* is the daily supplement to the *Code of federal regulations*. It publishes daily the full text of presidential proclamations, executive orders, reorganization plans, and federal regulations. For example, as a matter of public record the *Federal register* publishes notices of Environmental Protection Agency hearings, its proposed rule makings, promulgations of regulations, and other regulatory actions. Each issue contains a "Highlight" listing which gives a brief description of the major items of general interest in that issue.

The *Federal register* is available from the Superintendent of Documents on a subscription basis by the month or by the year.

1022 **Code of federal regulations.** Washington, D.C., Government Printing Office, 1938— to date.

An annual codification of the general and permanent rules published in the *Federal register* by the Executive departments and agencies of the Federal government. The *Code* is divided into 50 titles which represent broad areas subject to Federal regulation. Each title is divided into Chapters which usually bear the name of the issuing agency. Each Chapter is further subdivided into Parts covering specific regulatory areas. The individual volumes of the *Code* are revised as of January 1 of each year.

Titles of particular relevance in the field of water resources include: Title 18: Conservation of power and water resources; Title 33: Navigation and navigable waters; Title 40: Protection of the environment; and Title 50: Wildlife and fisheries. Each of these is available separately from the Superintendent of Documents.

1023 DeWeerd, John L., and Philip M. Glick. **A summary digest of the federal water laws and programs.** Washington, D.C., National Water Commission, 1973. 205 p.

Describes the programs and statutory responsibilities of more than 40 federal agencies, including those whose concern with water resources is only a small part of their work.

1024 Dewsnup, Richard L., Dallin W. Jensen, and Robert W. Swenson. **A summary-digest of State water laws.** Washington, D.C., National Water Commission, 1973. 826 p.

Statutes, court decisions, and administrative arrangements of the 50 states. Includes statutory and program provisions in force as of the end of 1972.

1025 **Laws of the United States relating to the improvement of rivers and harbors.** Washington, D.C., GPO, 1913-40. 4 v. (62nd Congress, Third

Session, House Document no. 1491; 76th Congress, First Session, House Document no. 379).

Volume 1: 1790 to 1896; volume 2: 1897 to 1913; volume 3: general provisions annotated; volume 3 [sic.]: 1913 to 1939.

1026 Udell, Gilman G. **Laws relating to forestry, game conservation, flood control and related subjects.** Washington, D.C., GPO, 1971. 668 p.

Subjects include Watersheds Act and amendments; reforestation legislation; Mississippi River Flood Control Act and amendments; Beach Erosion Act; and water conservation storage reservoir projects.

1027 U.S. Congress. House. Committee on Merchant Marine and Fisheries. **A compilation of federal laws relating to conservation and development of our nation's fish and wildlife resources, environmental quality, and oceanography.** Washington, D.C., GPO, 1973. 706 p. (Committee print).

1028 U.S. Congress. House. Committee on Public Works. **Laws of the United States relating to water pollution control and environmental quality.** 2nd ed. Washington, D.C., GPO, 1973. 522 p. (93rd Congress, 1st Session, Committee Print 93-1).

A compilation of legislation.

1029 Van der Leeden, Frits. **Groundwater pollution features of federal and state statutes and regulations.** Washington, D.C., U.S. Environmental Protection Agency, 1973. 88 p. (Environmental Monitoring Series EPA - 600/4-73-001a).

Summarizes regulations and requirements of major public agencies with respect to groundwater pollution.

COMPACTS AND TREATIES

1030 U.S. Library of Congress. Legislative Reference Service. **Treaties and other international agreements containing provisions on commercial fisheries, marine resources, sport fisheries, and wildlife to which the United States is a party.** Washington, D.C., GPO, 1965. 410 p. (89th Congress, 1st Session. Committee print).

A compilation consisting of the texts of treaties and other international agreements containing provisions on commercial fisheries, marine resources, sport fisheries, and wildlife to which the United States is party. It is arranged in three groups: multilateral treaties, bilateral treaties and agreements, and an annex containing treaties not yet in force for the U.S.

- 1 Witmer, T. Richard. **Documents on the use and control of the waters of interstate and international streams; compacts, treaties, and adjudications.** 2nd ed. Washington, D.C., GPO, 1968. 815 p. (90th Congress, 2nd Session, House Document no. 319).

"In this volume are collected all of the interstate compacts in force September 30, 1968 among States of the American Union which apportion or govern consumptive use of the waters of interstate streams, which have to do with prevention or amelioration of pollution of such waters, or which deal with control of floods and problems associated therewith. In addition, there are listed in it the treaties between the United States and Canada or Mexico and decisions of the United States Supreme Court in interstate litigation which cover these three subjects."

PLANNING. PRICING. ECONOMICS.

GUIDES AND MANUALS

- 36 American Water Works Association. **Water rates manual.** New York, 1972. 44 p. (AWWA Manual M-1).

A comprehensive study of current rate-making policies and practices. Covers development and design of rate-schedules, allocation of costs to customer classes, and other supplementary data.

- 37 ———. **Water utility accounting.** New York, 1970. 236 p.

"Embodies in one volume all pertinent existing data on the subject."

- 38 Control Systems Research Incorporated. **Manual for calculation of conventional water treatment costs.** Washington, D.C., U.S. Office of Saline Water, 1972. 77 p. (Office of Saline Water R & D Report no. 783).

Updates and provides additions to the estimating information found in the Office of Saline Water R & D no.'s 257 and 555 (*Manual of procedures and methods for calculating comparative costs of municipal water supply from saline and conventional water sources in Texas*, 1966; and *Desalting cost calculating procedures*, 1970). Intended for municipal rather than industrial applications.

- 39 Schad, Theodore M., and Elizabeth Boswell. **Federal water resources agencies and commissions.** Washington, D.C., U.S. Library of Congress, Legislative Reference Service, 1966. 42 p.

Compilation and brief description of the purposes and functions of all existing federal agencies having responsibilities pertaining to water resources and temporary commissions and committees that have made studies of water resources.

In two parts, the first part dealing with permanent Federal agencies having responsibilities in the field of water resources, part two dealing with the more important temporary committees and commissions which have reviewed various aspects of water resources policy during the 20th century. The Congress itself is not included except that several of the temporary committees with a specific mission involving water resources policy are included.

- 1040 Starmer, R., and F. Lowes. **Guide to the costing of water from nuclear desalination plants, 1973 edition.** Vienna, International Atomic Energy Agency, 1973. 79 p. (Technical Reports Series No. 151).

- 1041 United Nations. Economic Commission for Asia and the Far East. **Cost estimation of water resources projects.** New York, 1972. 298 p. (Water Resources Series No. 42).

A manual on costing, setting general guidelines for the preparation of cost estimates for water resources projects in the Asian and Far Eastern region at various stages of development.

This title is preceded by the following manuals on the more general aspects of planning river basin development and water resources projects: *Multiple-purpose river basin development, Part I, manual of river basin planning*, 1955, Flood Control Series No. 7; *Manual of standards and criteria for planning water resource projects*, 1964, Water Resources Series No. 26; and *Water resource planning*, 1972, Water Resources Series No. 41.

BIBLIOGRAPHY

- 1042 Asfur, Hani and William W.-G. Yeh. **An annotated bibliography on the design of water resources systems.** Los Angeles, University of California, School of Engineering and Applied Science, Engineering Systems Department, 1971. 85 p. (UCLA-ENG-7104; also issued as University of California, Water Resources Center Contribution no. 134).

"... application of techniques to determine best possible set of components for regional, complex, multipurpose water resources systems." Arrangement by approach used; no index.

- 1043 Brander, Leo G., and Bruce M. Graham. **A bibliography of periodical articles concerning the management and economics of water resources.** Wolfville, Nova Scotia, Department of Economics, Acadia University, 1971. 22 p.

Reviews twenty-six journals mainly in the field of economics over the period 1955-1971. Some abstracted; arranged alphabetically by author.

- 1044 Chow, Ven Te, and Dale D. Meredith. *Water resources systems analysis*. Urbana, University of Illinois, Department of Civil Engineering, 1969. 4 v. (Civil engineering studies, hydraulic engineering series nos. 19, 20, 21 and 22).

Contents: Part I. Annotated bibliography on stochastic processes; Part II. Annotated bibliography on programming techniques; Part III. Review of stochastic processes; Part IV. Review of programming techniques.

- 1045 Columbia Basin Inter-Agency Committee. Economic Studies Subcommittee. *Inventory of economic studies and data sources for the Pacific Northwest*. Portland, Oregon, 1963. 226 p.

———. 1967. 102 p.

"... current economic studies by Federal, State, and local government agencies and private organizations in the Pacific Northwest." Arranged by major subject. Includes water and related land resources; port development; fisheries; comprehensive planning.

- 1046 Dean, Robert D., and Carolyn Wilson. *Development planning for water resources*. Monticello, Ill., Council of Planning Librarians, 1970. 22 p. (Exchange bibliography no. 162).

Listed in four sections: background, economic, uses and benefits, and planning. No annotations.

- 1047 Duke, Richard D., and Paul Nickel. *An annotated bibliography on water problems*. East Lansing, Michigan State University, Institute for Community Development, 1962. 23 p. (Technical bulletin B-29).

Arranged by broad subject categories, e.g. basin planning, economics analysis, land planning, legal aspects, etc. Short annotations.

- 1048 Gertel, Karl. *Water, uses, supplies, projections; an introduction to terms and reference sources*. Washington, D.C., U.S. Department of Agriculture, Resource Development Economics Division, Economic Research Service, rev. 1962. 56 p.

"A compilation [intended] to expedite data-gathering phases of research and planning . . . prepared as a reference for economists and others working in the field of water resources."

- 1049 Golton, Patricia L. *Economics of water resources development in the eleven western states — an inventory of research*. Berkeley, University of California, Agricultural Experiment Station, 1951. 70 p.

———. Supplement 1. Compiled by Orpha Cummings, 1954. 16 p.

———. Supplement 2. Compiled by Orpha Cummings. 1956. 29 p.

———. Supplement 3. Compiled by Orpha Cummings. 1958. 24 p.

Prepared for the Western Agricultural Economics Research Council. Excludes theses (except for those of the University of California at Berkeley), literature on water legislation and water rights and publications on hydroelectric power. Arranged by subject and place. No annotations.

- 1050 Haissman, I. *Optimization techniques for water resources planning*, a bibliographical report. Berkeley, University of California, Hydraulic Laboratory, 1967. 54 p. (Technical report HEL-18-1).

State-of-the-art of application of optimization techniques to water resources development as of 1967. Critically annotated.

- 1051 Hamilton, H. R., and others. *Bibliography on socio-economic aspects of water resources*. Washington, D.C., Department of the Interior, Office of Water Resources Research, 1966. 453 p.

Prepared by Batelle Memorial Institute, Columbus, Ohio. 770 references from period 1955-1965 with abstracts. Subject and author indexes.

- 1052 Hinote, Hubert. *Benefit-cost analysis for water resource projects; a selected annotated bibliography*. Rev. ed. Knoxville, University of Tennessee, Center for Business and Economic Research, 1969. 148 p.

Revised edition of bibliography published in 1967 by the Tennessee Valley Authority. Emphasis placed on following project purposes: flood control, navigation, water quality (pollution), recreation, water-supply, and land-value enhancement. Bibliography is arranged according to these categories with an additional section on Basic works. Period covered is 1958-1967.

- 1053 Lee, Robert R., Gerald A. Fleischer and Vincent J. Roggeveen. *Engineering-economic planning of water resources: a selected bibliography*. Stanford, Calif., Stanford University, Project on Engineering-Economic Planning, 1961. 84 p.

Emphasizes administrative, economic, legislative and political aspects. Arranged by subject areas. Many annotations.

- 1054 Mangan, George F., and Herbert A. Swenson. *Urban water planning; a bibliography*. Washington, D.C., U.S. Water Resources Scientific Information Center, 1972. 373 p.

Approximately 250 references with abstracts. Produced from computer tapes of *Selected water resources abstracts*.

- 1055 Margolis, Julius, and others. **Annotated bibliography – external economic effects with special reference to water resources projects.** Stanford, Calif., Stanford University, Program in Engineering-Economic Planning, 1971. 136 p. (Report EEP-18).

“Prepared with resource development planner in mind . . . we have sought to include all of the ‘best’ studies and to sample every type of study.” Arranged in eight subject sections, then alphabetically by author within section. General author index is provided.

- 1056 Mitchell, Bruce, and Joan Mitchell. **Benefit-cost analysis: a select bibliography.** Monticello, Ill., Council of Planning Librarians, 1972. 44 p. (Exchange bibliography no. 267).

One section pertaining to water divided into categories: Background, Flood control, Irrigation, Pollution, and Supply. No annotations.

- 1057 U.S. Bureau of the Budget. Library. **Program analysis techniques: a selected bibliography, revised.** Washington, D.C., rev. 1966. 3 v.
Vol. 2, Supplement, 1967; Vol. 3, Supplement II, 1969. Includes sections on resource development. Annotated.

- 1058 U.S. Water Resources Scientific Information Center. **Institutional aspects of water resources development; a bibliography.** Washington, D.C., 1971. 287 p.

Key-word indexed. From data base covering *Selected water resources abstracts*, 1968 through September 1, 1971.

- ✓ 1059 ———. **A selected annotated bibliography on the analysis of water resource systems.** Washington, D.C., 1969–1974. 5 v.

Selected publications pertaining to the application of systems analysis techniques for defining and evaluating alternative solutions to water resource problems. Subject and author indexes provided. Early volumes appeared under auspices of Cornell University; complete bibliographical history is as follows: v. 1, *A selected annotated bibliography of the analysis of water resource systems*, by Marshall Gysi and Daniel P. Loucks, Cornell University, Water Resources and Marine Sciences Center, Ithaca, N.Y., 1969, 177 p., (Publication no. 25); v. 2, *A selected annotated bibliography on the analysis of water resource systems*, by Carol Kriss and Daniel P. Loucks, Cornell University, Water Resources and Marine Sciences Center, Ithaca, N.Y., 1971, 353 p., (Publication no. 35); v. 3, *A selected annotated bibliography on the analysis of water resource systems*, by Daniel Peter Loucks, U.S. Water Resources Scientific Information Center, Washington, D.C., 1972, 407 p., (WRSIC 72–218); v. 4, *A selected annotated bibliography on the analysis of water resource systems*, by Daniel Peter Loucks, U.S.

Water Resources Scientific Information Center, Washington, D.C., 1973, 490 p., (WRSIC 73–218); v. 5, *A selected annotated bibliography on the analysis of water resource systems*, by Daniel P. Loucks, U.S. Water Resources Scientific Information Center, Washington, D.C., 1974, 405 p. (WRSIC 74–206).

GLOSSARIES

- 1060 U.S. General Accounting Office. **Glossary for systems analysis and planning – programming – budgeting.** Washington, D.C., GPO, 1968, rev. 1969. 72 p.

Prepared for use by staff of the U.S. General Accounting Office. Definitions are of a non-technical nature.

HANDBOOKS

- 1061 U.S. Army Corps of Engineers. **Digest of water resources policies and activities.** Washington, D.C., U.S. Department of the Army, Office of Chief Engineer, 1972. 1 v. (various paging) (Pamphlet 1165–2–1).

Summarizes existing administrative and legislative water resource policies pertinent to the civil works activities of the Corps of Engineers. Covers planning, design, programming, budgeting, construction, operation, and management of Corps activities in the interest of environmental quality, national and regional economic development, and other national objectives.

- 1062 Urban Systems Research and Engineering, Inc. **Water resource project selection: a handbook for administrators.** Cambridge, Mass., 1973. 53 p.

Prepared for the U.S. Office of Water Resources Research. The handbook is addressed to administrators (or commissioners) in agencies, districts or other governmental units charged with water-related functions.

DIRECTORIES

- 1063 U.S. Office of Management and Budget. **Catalog of federal domestic assistance.** Seventh edition. Washington, D.C., 1973. 1 v. (loose-leaf).

A comprehensive listing and description of Federal programs and activities which provide assistance or benefits to the American public. It includes 928 programs administered by 55 different Federal departments, independent agencies, commissions, and councils. Information is given on financial assistance (grants, loans, etc), technical assistance, statistical and other expert information services. A subject index leads to a variety of programs providing help in water services and wastes disposal.

Published as a basic manual with changes issued as necessary. Available from the Superintendent of Documents.

- 064 U.S. Water Resources Council. *Coordination directory for planning studies and reports*. Washington, D.C., 1971. [unpaged].

For use of agencies represented on the Council and all other Federal, state, local and private interests concerned with the investigation and development of water and related land resources. It provides a description of agency areas of interest and responsibility. In looseleaf form; revisions are issued periodically.

DATA COMPILATIONS

- 1065 U.S. Water Resources Council. *1972 OBERS projections: economic activity in the U.S.* . . . Washington, D.C., GPO, 1974. 7 v.

"This report presents projections of economic activity for the Nation, Bureau of Economic Analysis economic areas, water resources regions and subareas, States, standard metropolitan statistical areas (SMSA's) and non-SMSA portions of economic areas and water areas. Included are projections of population, personal income, employment, and earnings of persons, by industry. The projections cover 1980, 1985, 1990, 2000, and 2020. Also included are projections of land use by broad categories for the same 50 year period but with fewer intervening years covered." Based on the Series "E" Projected National Population, Bureau of the Census, 1972. The OBERS projections are presented as baseline reference series for the analysis of resource demands and development needs, and for the evaluation of the costs, benefits and economic impact of development and management programs and projects.

The acronym OBERS signifies combined effort of the Office of Business Economics and the Economic Research Service.

The projections presented in this report are a parallel set to those presented in the Council's *OBERS projections* (5 v.) published in 1972. This earlier set was based on the Series "C" Projected National Population, Bureau of the Census, 1967.

REMOTE SENSING

Hydrologic applications of remote sensing include synoptic information on drainage basin characteristics, hydrologic controls, vegetative indicators of hydrologic conditions, hydrodynamics, lake processes, pollution dynamics, and distribution of ice and snow. Marine applications include information on current patterns, types of waves, underwater topography, marine biology, mineralization and coastal processes.

Public access to Earth Resources Technology Satellite imagery is provided by the EROS Data Center in Sioux Falls, South Dakota. This Center is operated for the Earth Resources Observation Systems Program of the Department of the Interior by the Topographic Division of the Geological Survey. They also provide

access to U.S.G.S. aerial photography, and NASA aircraft data. Their address is: EROS Data Center, 10th & Dakota Avenue, Sioux Falls, South Dakota 57198.

GUIDES AND MANUALS

- 1070 U.S. National Aeronautics and Space Administration. Lyndon B. Johnson Space Center. *Procedures manual for detection and location of surface water using ERTS - I multispectral scanner data*. Houston, Texas, 1973. 5 v.

Directed to potential users of Earth Resources Technology Satellite data. Covers data acquisition; control network establishment; computer program description and users' guide; and information correlation and interpretation.

BIBLIOGRAPHY

- 1071 Baker, D. R., A. F. Flanders, and M. Fleming. *Annotated bibliography of reports, studies, and investigations relating to satellite hydrology*. Washington, D.C., U.S. Environmental Science Services Administration, National Environmental Satellite Center, 1970. 28 p. (ESSA Technical memorandum NESCTM 10).

Covers period 1960-1970. Includes literature relating to applications of satellite data to hydrologic problems.

- 1072 Brooks, Paul Dennis, and George W. Thomson. *An annotated bibliography of remote sensing of air and water pollution*. Washington, D.C., U.S. Army Topographic Command, 1971. 21 p. (TOPOCOM Special bibliography).

Literature published between 1965 and 1970. Short annotations.

- 1073 Gramms, Lorne C., and William C. Boyle. *A literature review of remote sensing for water quality*. Madison, Wisconsin, University of Wisconsin Remote Sensing Program, 1971. 34 p.

A review with 87 references.

- 1074 McGinnies, William G. *An annotated bibliography and evaluation of remote sensing publications relating to military geography of arid lands*. Natick, Mass., Natick Laboratories, Earth Sciences Laboratory, 1970. 103 p. (Technical report 71-27-ES and Earth Sciences Laboratory ES-61).

355 references abstracted or annotated and arranged relating services and processes to geographic features including terrain, groundwater, surface materials,

cultural features, flora, fauna, weather and climate, coastal zones, and general geography.

- 1075 Stafford, Donald B., Richard O. Bruno and Harris M. Goldstein. *An annotated bibliography of aerial remote sensing in coastal engineering*. Fort Belvoir, Va., U.S. Coastal Engineering Research Center, 1973. 122 p. (CERC Miscellaneous paper no. 2-73).

A bibliography of representative literature covering the applications of aerial remote sensing techniques to coastal engineering. About 200 references published since 1934 are presented with annotations. Computer indexes of authors, titles and keywords are included.

- 1076 Stafford, Donald B. *Aerial remote sensing*. Washington, D.C., U.S. Water Resources Scientific Information Center, 1973. 482 p.

Produced from information base comprising the *Selected water resources abstracts* 1968-1972. Includes author index, significant descriptor index, and comprehensive index.

- 1077 U.S. Geological Survey. *Bibliography of remote sensing of earth resources for hydrological applications, 1960-1967*; a working bibliography of selected references. Compiled by Rita K. Llaverias. Houston, Tex., National Aeronautics and Space Administration, Manned Spacecraft Center, 1968. 1 v. (Interagency report NASA-134).

Available on open-file. No annotations.

———. *Remote sensing bibliography for earth resources, 1966-67*. Washington, D.C., 1970. 127 p. (Interagency report no. 189).

———. *Remote sensing bibliography for earth resources, 1968*. Compiled by Rita K. Llaverias and Dorothy G. Lowe. Washington, D.C., 1970. 246 p. (Interagency report no. 203).

The 1960-67 issue was limited in scope to hydrology. The scope in these later issues is broadened to encompass earth resources. Author, subject, and corporate indexes are provided. No annotations.

———. *Remote sensing bibliography for earth resources, 1969*. Compiled by J. P. Glasby and D. G. Lowe. Washington, D.C., 1971. 182 p.

612 reference citations. Technical material concerning methodology and applications for earth resources studies is cited, stressing advancements in airborne and earth satellite techniques. Arrangement by nine subject categories. Indexes are provided.

DIRECTORIES

- 1078 U.S. National Aeronautics and Space Administration. *Skylab earth resources investigations*. Washington, D.C., GPO, 1973. 63 p.

A directory providing reference for users and potential users of the Earth Resources Experiment Package (EREP) data. Gives names and addresses of principle investigators; description of project; and test sites. Data being developed relates to land use, hydrology, water resources, geology, coastal engineering, etc.

DATA COMPILATIONS

- 1079 *Earth resources technology satellite U.S. standard catalog*. Greenbelt, Md. U.S. National Aeronautics and Space Administration, Goddard Space Flight Center, 1972- to date.

A monthly catalog published by the NASA Data Processing Facility which provides information on the availability of Earth Resources Technology Satellite (ERTS) imagery. A companion catalog is the monthly *Earth resources technology satellite Non-U.S. standard catalog*.

These catalogs identify imagery which has been processed, and input to the data files, during the preceding month.

In addition to the routine monthly catalogs, the NASA Data Processing Facility periodically publishes comprehensive catalogs which include information on all observations acquired and processed by the facility since launch. U.S. data now available in this form is titled *Cumulative U.S. standard catalog 1972/1973-1974*. 2 v.

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ERTS/NASA Space Flight Center

(301) 344-8955 ERTS

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