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TNRIS for Information

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State and federal agencies collect massive amounts of information on water resources in Texas.

Keeping track of the facts and figures is the task of the Texas Natural Resources Information System (TNRIS). This organization acts as a clearing house between the agencies which collect the information and those who need it.

Water resources information collected by government agencies and made available through TNRIS includes measurements of rainfall, streamflow, groundwater level, water quality, runoff, water temperature, water use, wastewater, water utilities, and fish populations. Some types of information are from one-time studies; others such as rainfall and streamflow data have been collected daily for the past 80 years.

Information collection may be as simple as:

- An engineer dropping a metal tape measure down a well to determine groundwater level.
- A biologist counting fish species in a net.

Collection methods can also be as sophisticated as:

- A remote-controlled instrument measuring streamflow and feeding information directly into a computer.
- A satellite tracking weather patterns and sending pictures back to earth.

Information collected is generally printed in reports or maps, stored in file cabinets, or stuffed in storage boxes. Most likely, in this day and age, the facts and figures are also fed into a computer and called "data."

State and federal agencies use the data they collect to help plan, develop, manage, and protect the state's water resources. Information collected by one state agency is often useful to other state agencies or to local or federal agencies. Private groups and individuals are also interested in specific data.

Realizing this, the Texas legislature directed the state agencies involved in collecting or using water resources data in Texas to establish a "hydrologic data bank" in 1968 to organize information and make it available to others. The service soon evolved to include other natural resources information in the state and became the Texas Natural Resources Information System.

TNRIS does not collect information, but catalogues and makes accessible that which is already collected by other agencies. It also serves state agencies by answering requests for information from its files.

John Wilson, TNRIS Systems Central Manager, describes the system as a bridge between information files and information users. He sees the biggest advantage of TNRIS as "a lot of data bases pulled together to be accessed with one phone call or with one operation on a terminal."

TNRIS has all but eliminated duplications in information collection and storage and has reduced information retrieval time in the 13 state agencies collecting or using natural resources information.

The system coordinates data collection activities and encourages agencies needing similar information to share collection costs. TNRIS also stores certain information collected by federal agencies and used extensively by several state agencies. Data from the National Weather Service and Bureau of the Census are the best examples of this service.

TNRIS is recognized nationally as an efficient, innovative way to handle the massive amounts of information generated and needed by state agency personnel. It was cited by the National Council of State Governments as "a good example of state agencies working together to save taxpayers' dollars and coordinate the gathering, storing, and dissemination of natural resource data."

Available Information

The largest number of requests received by TNRIS is for information on water resources. Use of other types of information, however, is increasing. The five categories of natural resources information available from TNRIS in addition to water resources are (1) base data, (2) meteorological resources, (3) biological resources, (4) geological resources, and (5) socioeconomic resources.

Base data include political subdivisions such as county boundaries, river basin boundaries, and water well locations. Much of the base data are available on computer-printed maps showing various natural and manmade features within the state.

Meteorological resources involve details on precipitation, relative humidity, temperature, wind movement, and air quality. The biological resources category contains studies concerning shrimp, fish, dove, deer, and turkey populations and harvests.

Geological and land resources, as the name implies, involves soil analyses and other studies of the land structure of Texas. It also includes oil and gas production reports and land use classifications. Socioeconomic resources cover census information on population and housing, highway and boat statistics,. economic analyses, and details of cities, counties, and districts.

Data collected and stored by different agencies can be combined by TNRIS. Water well locations and county boundaries, for instance, may be stored separately and combined to plot a map illustrating locations of all wells in a specified county. Measurement of water levels in these wells over time may be stored in still another file, then combined with the files of well locations and county boundaries to produce a plot of all wells of a certain depth within a specified county.

Task Force

Representatives from the following state agencies serve as a Task Force to direct the activities of TNRIS:

Texas Department of Water Resources
General Land Office
Texas Air Control Board
Texas Forest Service
Texas Industrial Commission
Texas Department of Health
Bureau of Economic Geology, University of Texas at Austin
Railroad Commission of Texas
Texas Department of Agriculture
State Department of Highways and Public Transportation
Texas Parks and Wildlife Department
Texas State Soil and Water Conservation Board
Texas Coastal and Marine Council

Serving as ex officio members are:

Governor's Office
Texas Department of Community Affairs
Texas Historical Commission

Systems Central

A staff of 14 housed in the Stephen F. Austin Building just a couple of blocks from the state capitol are known as TNRIS Systems Central. Systems Central operates through the Texas Department of Water Resources.

In addition to answering requests for information, Systems Central staff members are heavily involved in (1) educating users, (2) indexing data, and (3) developing new capabilities.

Potential users learn about TNRIS through short courses, publications, and programs sponsored by Systems Central staff members. TNRIS staff offer regularly scheduled short courses on how to use the TNRIS Monitor computer access program and how to interpret remote sensing data. They also develop brochures on system capabilities and publish a quarterly newsletter. Systems Central staff attend selected meetings telling about the system's availability and capabilities.

The fact that one-fourth of all users this year have been first-time users is evidence of the success of the education efforts.

Anyone can request information from TNRIS. A list of users during 1980 includes private companies, museums, investors, cities, universities, attorneys, better business bureaus, developers, political parties, oil and timber industries, engineers, community action associations, and public schools.

Currently no charges are assessed for staff time. Users are charged only the cost of reproduction, computer time, and mailing. Eighty percent of all requests so far have been under $25.

The most common request is made by phone. A TNRIS Systems Central staff member receives a call asking for information. The staff member searches the computer, has the computer print the information, and then mails the printed material.

Data requests also come to TNRIS by letter and in person. In addition to computer printed reports, data can be provided as punched cards, magnetic tape, photographs, microform, computer graphics, maps, and previously printed material. Forty percent of all information requests are for computer printed material.

The average time to answer an information request is about 3 days, but many requests are filled within 24 hours. Users who prefer much faster retrieval may choose to install a remote terminal in their own offices. They then have almost immediate access to much of the information available through TNRIS on their terminal screen or printer.

An automated system called the TNRIS Monitor allows users with little or no data processing experience to access selected TNRIS data files using a remote computer terminal. Ten percent of all requests now come directly from remote terminals to the computer.

TNRIS has an automated accounting system which prints reports describing which files were accessed, to whom data were supplied and in what formats the data were furnished.

A related service provided by TNRIS is data storage. The system offers data storage capabilities for computerized natural resources data files provided the data contributor agrees to meet certain requirements. Data stored in TNRIS must be available to data requestors.

If you would like to know more about TNRIS services or if you would like to request natural resources information, contact Systems Central:

By telephone: 512-475-3321
By letter: P.O. Box 13087, Austin, Texas 78711
By terminal: Contact TNRIS by mail for a site identification number and a user password.

Name Dropping

Water availability has greatly determined where Texans live. Names of many communities in the state reflect the importance of water to the history of the state.

Forty-one Texas towns are named after springs; another 37 have the word "lake" in their names. There are also 17 towns named for creeks, rivers, or brooks.

Community names also reflect the attentiveness of Texans to weather. Hail, Dew, Rainbow, Cool, Dryer, and Snow Hill are examples.

Some names of towns describe the local water as Sour Lake, Sweetwater, Ague Dulce, Shallowater, and Red Water. Other town names describe a nearby body of water: Long Lake, Big Lake, Blue Lake, Silver Lake, Clear Lake, and Little River.

Town names are especially descriptive of springs: Roaring Springs, Red Springs, Dripping Springs, Cold Springs, and Big Springs. Wells are described by Mineral Wells, Artesia Wells, and Big Wells.

A few town names are not exactly Chamber of Commerce ideals. Who would want to live in a place called Turtle Bayou or Swamp City... or Waterloo? In contrast, who wouldn't like to live in a town descriptively named Laguna Vista, Hilltop Lakes, or Riverside?

Even if your town is not named after a water source, there is a good chance that the street you live on is. Even though most of us will never live adjacent to a stream or lake, we like to have our street addresses imply that we do so.

The city of Austin, for instance, has 252 streets named for springs, lakes, creeks, and other water subjects. There are 54 streets named for creeks and another 35 after lakes. Springs, brooks, and rivers each have over 20 streets named after them. Other popular names on Austin street signs include wells, lagunas, aquifers, shoals, water, basins, harbors, streams, and shores.

How many streets are named after water in your town? If you will send us examples and number, we will print them in a future issue of Texas Water Resources.