OREGON RIVERS INFORMATION SYSTEM

OPERATION MANUAL

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Sponsoring Agencies:
Oregon Department of Fish and Wildlife
and
Bonneville Power Administration

by

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OREGON RIVERS INFORMATION SYSTEM

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PREFACE

The Pacific Northwest Rivers Study was a cooperative river resource assessment carried out between 1985 - 1987 by the states of Oregon, Washington, Idaho, and Montana. Funding for the project was provided by the Bonneville Power Administration (BPA). The Northwest Power Planning Council (NPPC) conducted an evaluation of the region's anadromous fish resources concurrent with the Northwest Rivers Study.

The Oregon Department of Energy, original coordinator for the Oregon portion of the Northwest Rivers Study, and Oregon Department of Fish and Wildlife, present coordinator, wish to thank both the BPA, for its financial support of this endeavor, and the NPPC, for its technical assistance in the development of the database.

I. INTRODUCTION

The Oregon Rivers Information System (ORIS) User's Manual is designed to help you efficiently use the information contained in the database. The database program is menu-driven and this manual has been developed to work in tandem with the program screens. A number of screen snapshots are provided in the manual that illustrate the functioning of the database and duplicate screens in the demonstration program.

The database contains information on a number of resource categories to assist planners in identifying the significance of river reaches and constraints. The information stored in the database was collected from a variety of federal and state management agencies, as well as from private sources. These data represent a snapshot of the information available at this time. The database will be updated over time as errors are corrected and additions are made. The version number of the database will be displayed on the Welcome Screen.

The Oregon Department of Fish and Wildlife (ODFW) is the coordinator of the ORIS (part of a four state database called the Northwest Environmental Database), and responsible for updates and maintenance of the fish and wildlife records. The Oregon Department of Energy (ODOE) was responsible for the initial programming and technical maintenance of the database. Programming is now maintained by ODFW.

ODFW will appreciate any comments or questions concerning the database. These should be addressed to: Brent Forsberg, Oregon Department of Fish and Wildlife. Omissions, errors discovered in the data, and errors in the program could also be reported by using the Errors Reporting Form in Appendix I of this manual. Please include a printout of the screen where the error or problem occurs.

II. DATABASE DESCRIPTION

Appendix A is a schematic of the data files and fields that appear on the screen. The data files are structured using dBASE III Plus format, a popular database manager for micro computers. You need not be concerned with having dBASE III on your computer or mastering the dBASE software. The ORIS is menu-driven and the workings of the database manager are transparent to the user. If you have dBASE III and are familiar with its functions, it may be used to make specific queries of the individual or linked databases that make up the ORIS. The documentation for each database file used in ORIS is included in Appendix B.

River segments must be coded in order to computerize them and to tag each segment with resource information. Unfortunately, there are many ways to code river segments, and these different coding systems are not always compatible. The Oregon resident fish and wildlife data were originally coded to the Oregon Water Resources Department (WRD) stream coding system. The only comprehensive river coding system for the entire Pacific Northwest region, however, is the Environmental Protection Agency's (EPA) River Reach File. The

program structure and relationships among files are significantly increased when translating between coding systems. Thus, it was necessary to develop a cross-reference system between the EPA coding system and the Oregon WRD system. This was carried out by the NPPC, who converted the WRD files to the EPA system.

The River Reach File mentioned above is EPA's national database of surface water features. It was developed to provide data on the Nation's surface waters (Appendix C). It provides information on stream names, latitude/longitude coordinates, and other identifiers. It provides a unified surface water identification system throughout the United States. The River Reach File is composed of a complete tabular structure as well as digital trace files for Geographic Information System (GIS) analysis. It originally contained 68,000 stream reaches (700,000 miles of stream) in the contiguous United States. The original River Reach File had about 4,000 stream reaches for Oregon. EPA is coordinating an enhancement of the River Reach File to include all named streams appearing on 1:100,000 scale US Geological Survey (USGS) maps. The location and names of the USGS maps are shown in Appendices D. The map name is also shown on screen when a stream query is made. The Oregon file currently has about 14,000 stream reaches (about 45,000 miles of stream).

The basic unit of the River Reach File is the river reach, which is a distinctly identified lineal segment. There are two types of reaches in the file: shoreline and transport. Shoreline reaches show the U.S. continental coasts, the perimeters of lakes, reservoirs, and estuaries, and the shorelines of some side rivers and islands (not included in ORIS tabular files). Transport reaches show segments of the hydraulic transport paths through streams and inland open waters including lakes and estuaries. Artificial transport reaches are created through lakes and reservoirs to allow the computer to track the length of the river without interruption. Generally, however, the transport reaches extend from one stream junction to another. They are linked in a skeletal structure which represents the branching patterns of surface water drainage from all tributaries progressively in a downstream direction. The reaches are identified by a fifteen digit code composed of three parts: an eight-digit cataloging unit, which identifies the USGS basin, or hydrologic unit, in which the reach resides (Appendix E), a three-digit segment number, which identifies the reach within the hydrologic unit, and a four-digit sub-reach within a reach. An example is shown below:

River Reach Number:.....17090011-001-01.00
Hydrologic (Cataloging) Unit.....17090011
Segment Number.....001
Sub-reach 01.00

where, the first eight digits identify this number as belonging to the Clackamas River within the USGS Willamette River Basin; the next three digits identify the first reach on the main stem; and the next two digits along with the decimal point and following zeros identify the reach as a subreach that was split from the original when Rock Creek (-052-) was added.

The data files represent information gathered from numerous state and federal agencies and other cooperating organizations. The data file categories, approximate size of each data file for the entire ORIS (MB=mega-bytes), and responsible organizations are listed below:

EPA River Reach File	5.6 MB	NPPC
Anadromous Fish	0.4 MB	NPPC
Resident Fish	1.2 MB	ODFW
Wildlife	1.1 MB	ODFW
Natural Features	0.7 MB	Oregon Natural Heritage Database
Cultural Features	0.1 MB	State Parks & Recreation Division
Recreation	0.2 MB	State Parks & Recreation
Institutional Constraints	0.2 MB	WRD and Dept. Land Conservation and Development (originally)
Fish Distribution	0.4 MB	Oregon State University and ODFW
Fishways	0.1 MB	ODFW
Hydropower	0.8 MB	Corps of Engineers
Nonpoint Source Pollution	1.4 MB	DEQ
Instream Water Rights	0.2 MB	ODFW
Protected Areas	0.5 MB	NPPC
Hatcheries Liberations Returns	0.9 MB	ODFW

III. GEOGRAPHIC SCOPE

The geographic scope of the entire database is the state of Oregon. The information is organized by river subbasin and is referenced by a variety of geographic and resource options.

The database, however, has been partitioned into the six ODFW administrative regions (Appendix H) and Eastern or Western Oregon. The regional database covers just those streams within that region. The reason for partitioning the database is size considerations. The entire Oregon Rivers Database would require approximately 25 mega-bytes (MB), the Western portion requires about 15.5 MB, and the largest regional database only requires about 9 MB. If you have the room and wish to have the entire database, please contact Brent Forsberg, ODFW (229-6967, Ext. 465).

IV. INSTALLING THE DATABASE

Use of the ORIS database requires an IBM PC or compatible computer with at least one floppy disk drive and at least 9 MB of free space on the hard disk drive for the largest regional ORIS and 25 MB for the entire state database. Operating system requirements are PC/DOS or MS/DOS, 2.0 or greater. An attached printer, capable of condensed print, will enable reports to be generated.

You do not need to supply your own database software. The database is supplied as a complete menu-based system along with the software to operate it. The software is distributed on one installation disk along with two or three data disks. The number of disks received will depend on whether ORIS is distributed on a 1.2 MB 5 1/4" disk or a 1.4 MB 3 1/2" disk. The latest installation instructions are included on the installation disk in the file labeled README. Print out this file to get the latest instructions on installing the program and new release information by following these steps:

1) Place the installation disk (Disk #1) in drive A
2) At the C:> prompt, type TYPE A:README >PRN
3) Press Return (or Enter).

To install the database follow these steps:

1) Place Disk #1 in drive A
2) At the C:> prompt, type A:INSTALL
3) Press Return (or Enter).

You will be prompted to place the additional disks in drive A when necessary.

V. STARTING THE SYSTEM

The Key conventions used for the database are:

<CR> .....Enter or Return Key

Arrow Keys..Cursor control keys, separate or on the keypad

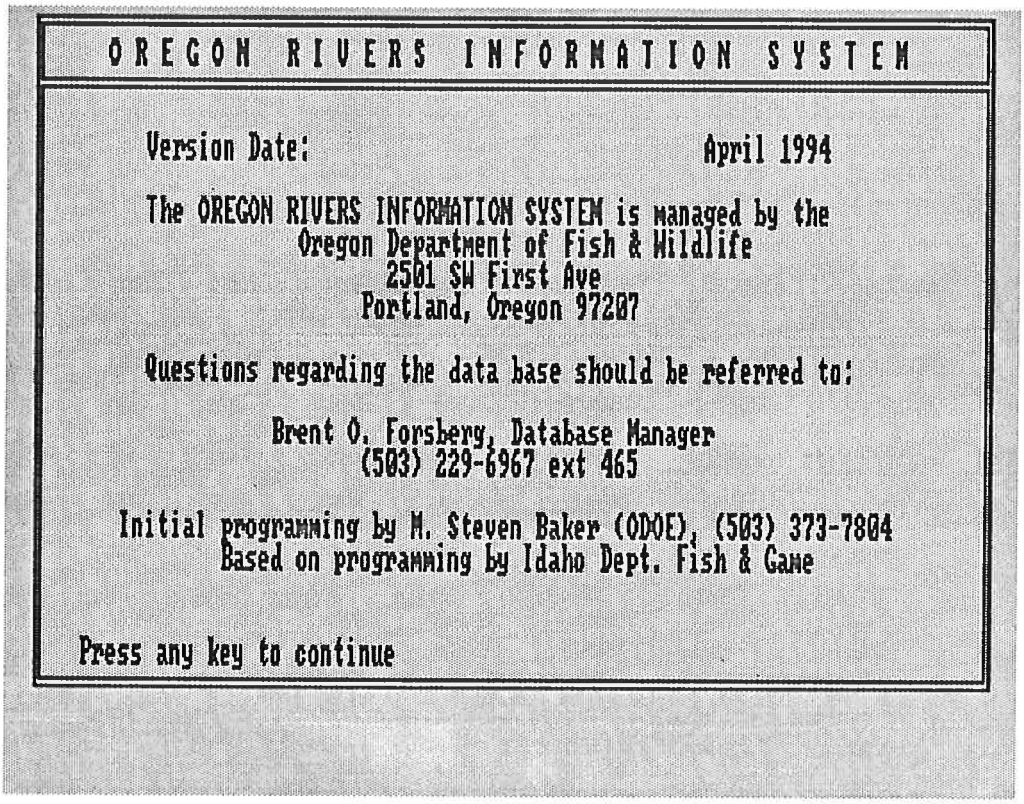
Page Down ..The PgDn key on the numeric keypad, or separate key

Backspace...The Backspace key is usually above the Enter key

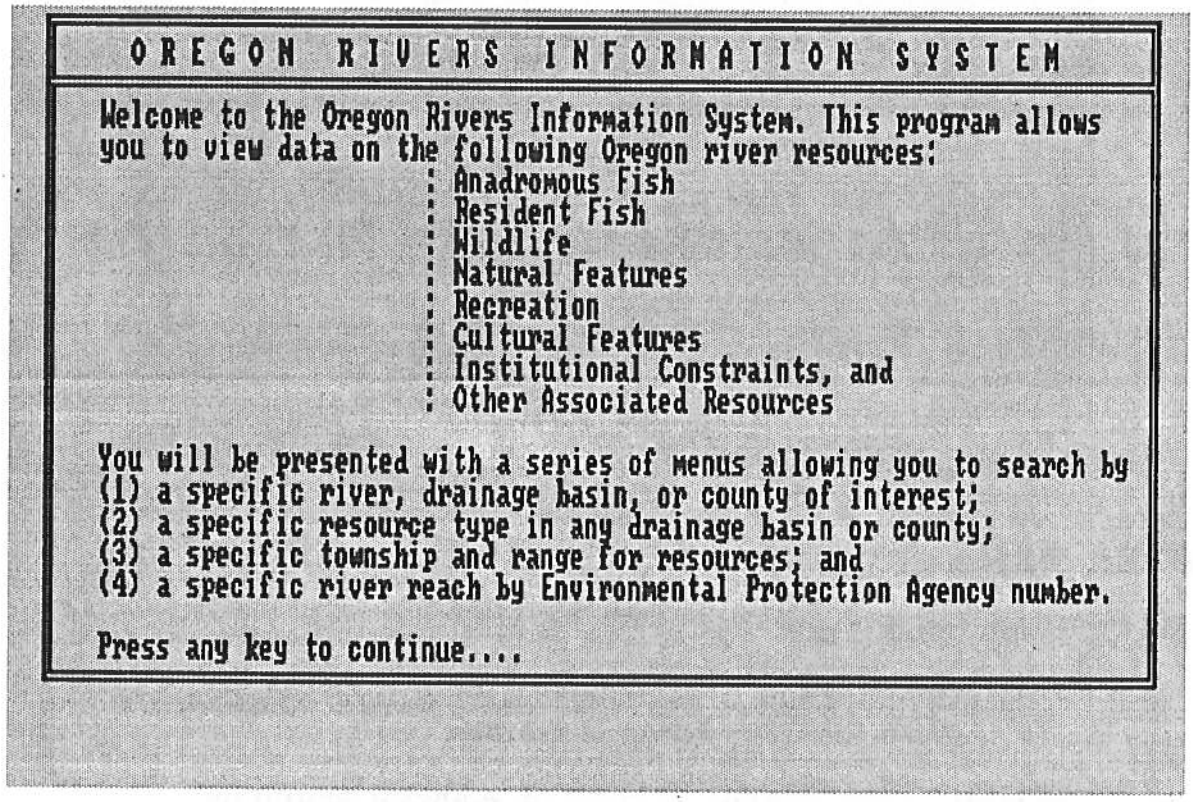
ESC.....The ESCape key is usually the key on the upper left

Tab.....The Tab is usually below the ESCape key

To start the system, type RIVERS at the C:> prompt, which should be the first prompt after starting the computer, and then press <CR>. The first screen, the Credits Screen shown below, will appear. The Credits screen (below) is an introductory screen to the ORIS and lists agency and personnel information. The main purpose of this screen is to notify you that the database is active. This screen will not reappear until the system is again started. Press any key to continue.



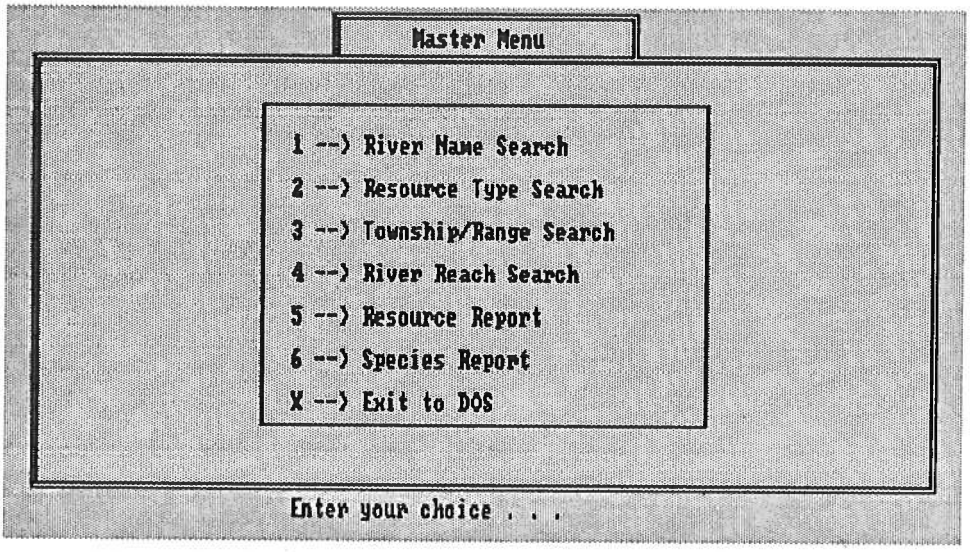
The Welcome screen (below) displays categories of data available in the database as well as options for accessing the information. Press any key to continue to the Master Menu.



The first two screens can be advanced by striking any key, but subsequent screens will require you to enter a number, a name, or a letter. In all screens beyond the introductory ones, you may move around the system by responding to the Menu Bar located at the bottom of the screens.

VI. USING THE SYSTEM

The Master Menu screen (below) lists four options for searching the data files and two report formats. Selection of several of these options will present sub-menus and you will discover the flexibility built into this information system by working your way through the menus.



MASTER MENU OPTIONS

The Master Menu options are:

1 --> River Name Search. This option allows a data search by river name, drainage basin, or county.

2 --> Resource Type Search. This option allows a search by resource type.

3 --> Township/Range Search. This option allows a search of resources within a specified Township and Range.

4 --> View River Reach Data. This option a search by a specific EPA River Reach Number.

5 --> Resource Report. This option produces a report by a selected resource type.

6 --> Species Report. This option produces a report of fish species present in a selected stream, basin, or county.

X --> Exit to DOS. This option exits you from the Oregon Rivers Information System.

All menu selections on the Master Menu respond as soon as the key is pressed. You can always return to the Master Menu by using the "QUIT" option in the Menu Bar at the bottom of subsequent screens. Press a Master Menu choice to continue.

Option 1: RIVER NAME SEARCH

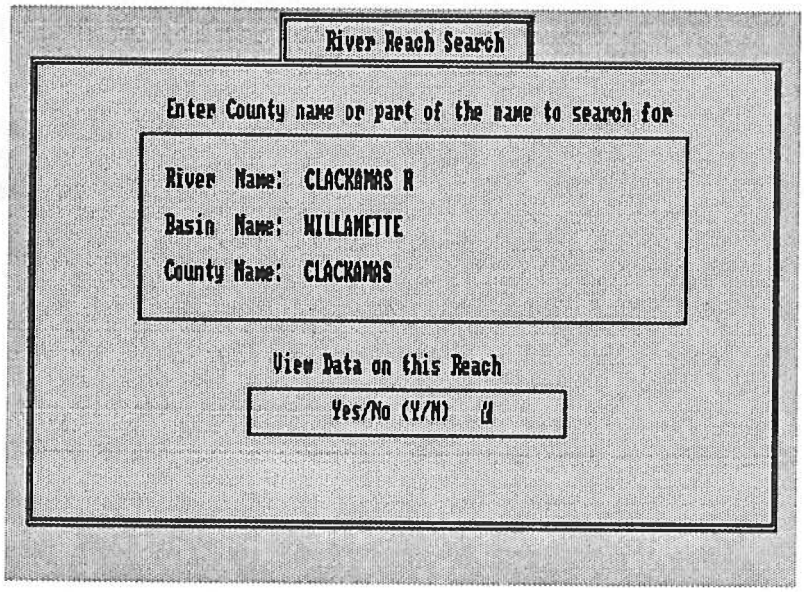
The system has several search options, including searching by river name, basin name, and county name. Most often, you will probably combine these options to limit the scope of your search; such as searching by river name in a particular county or basin.

A river name search allows access to information on a particular river, or reach of that river. After selecting option number 1 on the Master Menu, you can enter the name of the river on the River Name Search screen (below). The naming conventions used for Name Search are:

"R" for River
"CR" for Creek, and
"R, N FK" for the North Fork of a named river.

The program searches for an exact name match or partial name, and if "CLACKAMAS RIVER" is entered, for instance, the program will not find it. It will find "CLACKAMAS R" or just "CLACK", however. Some river names have the words "North" or "South" as a prefix to their name, such as North Umpqua. In this case the exact match would be "N UMPQUA R".

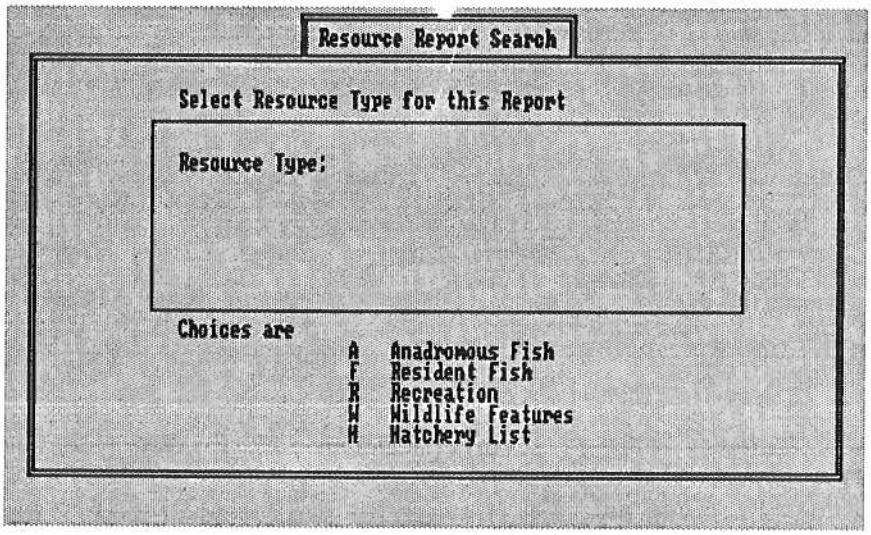
The program will then prompt you for the Water Resources Department (WRD) Basin name (Appendix F) and County name (Appendix G). Enter a basin or county name (or partial name) if you want to limit the search. Otherwise, the program will sequentially display all river reaches with the name you choose in every county and each basin as appropriate. If you do not respond to the stream name prompt, all streams in the basin or county selected will be displayed. If all choices are left blank, then all streams will be selected beginning with the first alphabetical stream name.



The program will also prompt you to see whether or not you want to view the data on the reach you selected, or start over in case of a mistake. Press <CR> for Yes to advance to the View Resource Data screen, or type "N" for No and press <CR> to re-enter another reach name.

Option 2: RESOURCE TYPE SEARCH

You may search for a specific resource type and value by river reach (screen below). You will be prompted to supply the resource type that you want to search. The choices are: "A" for Anadromous Fish; "C" for Cultural Features; "F" for Resident Fish; "N" for Natural Features; "R" for Recreation; "S" for Scenic Rivers Constraints; and "W" for Wildlife.

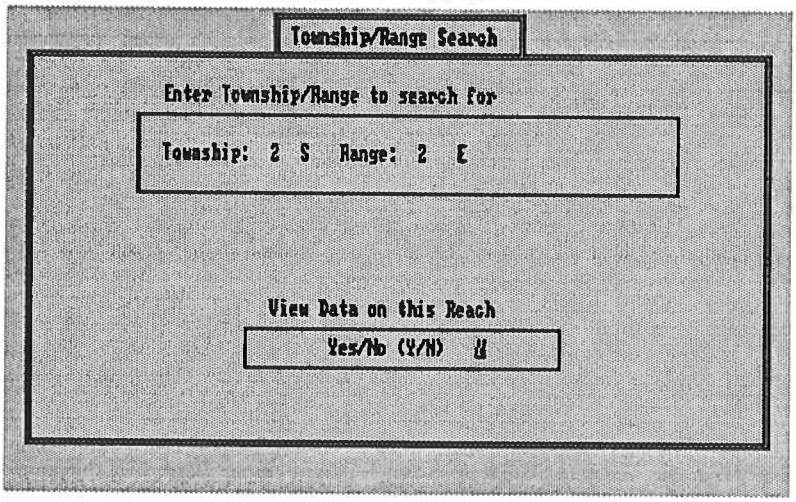


Depending on the Resource Type selected, you will be prompted to supply a value class for a specific search. Value class options, in addition to 1 through 4, might include "U" for Unknown and "N" for Not Present. You will also be prompted for a River Basin Name and the a County Name. If names are not entered, all streams will be displayed with the Resource Type and Value Class selected in alphabetical order.

If the criteria have been entered correctly press <CR> for Yes, and the system will display on the View Resource Data screen the river reaches containing those resources selected , or type "N" for No and press <CR> to re-enter another resource type.

Option 3: TOWNSHIP/RANGE SEARCH

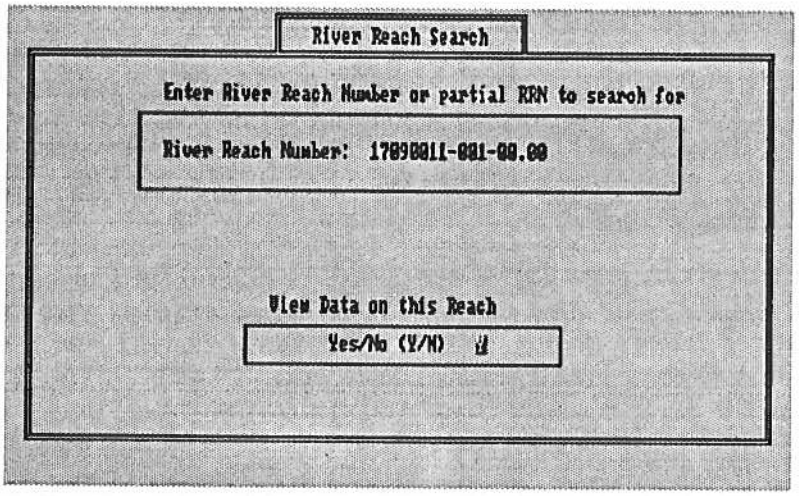
You have the option of searching a given area for it's resources by entering the township and range location. You may enter the township number and its single alphabetic abbreviation for the location "N"orth or "S"outh of the Willamette Meridian. Press <CR> and repeat the process for the range location "E"ast or "W"est of the Willamette Meridian (see below).



If the entry is correct, press <CR> for Yes and the system will display, in alphabetical order, the first stream in the selected area.

Option 4: RIVER NUMBER SEARCH

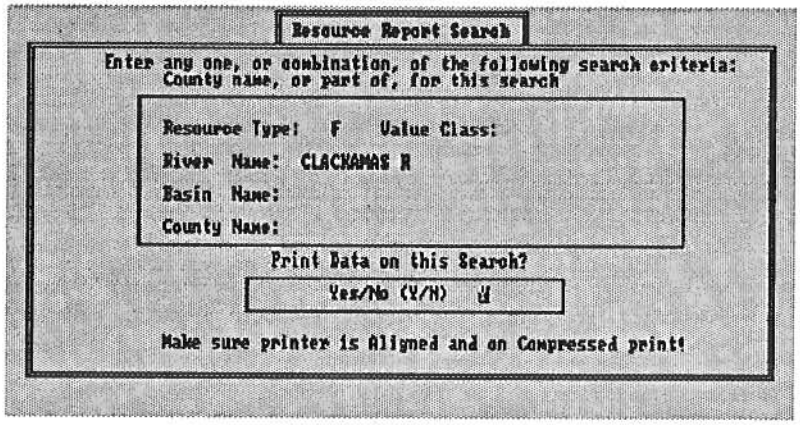
You may search by EPA River Reach Number if you know the precise reach number or enter only the first eight digits if all streams in a specific USGS Hydrologic Unit are desired. The screen below illustrates the River Reach prompt.



Enter the numbers desired, press <CR>, and the system will display the river reach on the View Resource Data screen.

Option 5: RESOURCE REPORT

This menu option is similar to option 2 (Resource Type Search) except that rather than viewing the data on screen a report is generated for the selected resource. This printed report retrieves values for either Anadromous Fish, Resident Fish, Wildlife, Recreation or Hatcheries. You will be prompted to select the resource type, where upon you can select any one or combination of options to specify the Value Class, River Name, Basin Name, or County Name (below). **Remember** to put your printer on compressed print!

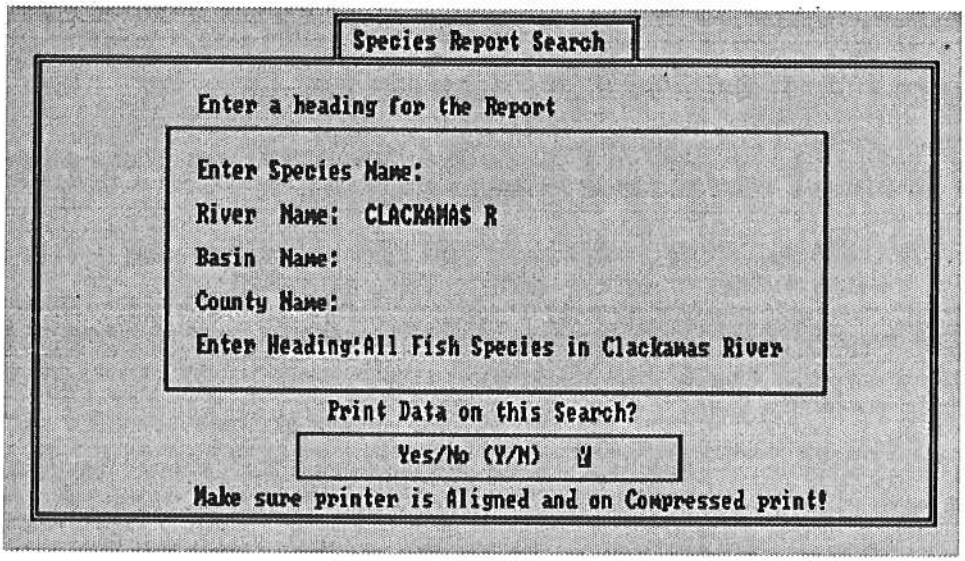


If an option is left blank (<CR>), all values, or all names will be selected. The report includes EPA Reach Number, stream name, lower boundary of each reach, upper reach boundary, and other information depending on the resource selected.

Anadromous Fish: presence by percentage of reach of each species, reach length, and cumulative length from the stream mouth.
Resident Fish: major species, species concern, habitat value, use value, abundance value, stream value class, and reach length (values defined under "Resident Fish Resources").
Wildlife: same information as Resident Fish above (values defined under "Wildlife Resources").
Recreation: the values for power, canoe, drift and sail boating, anadromous, trout, and warmwater fishing, stream value class, and reach length.
Hatchery: name, location, type, fish produced, and water supply.

Option 6: SPECIES REPORT

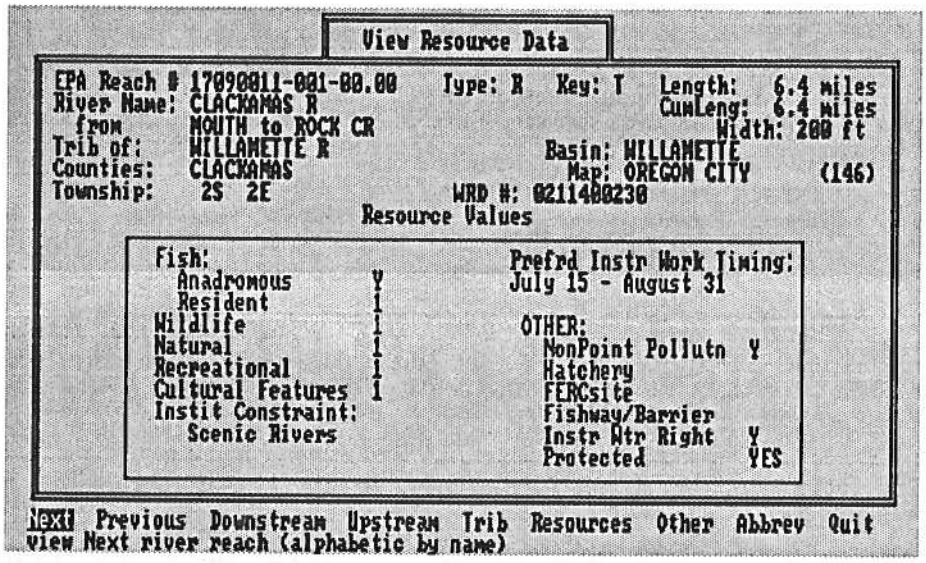
This option produces a report for a specified resident fish species of a selected stream, basin or county, or any combination of selection criteria. The species name can be any portion of its name. Entering "trout" will select all trout (Rainbow Trout, Cutthroat Trout, Bull Trout, etc.) in the selected stream, basin, or county. Since all ODFW wild fish populations have been coded with an asterisk (*), by entering just the asterisk on the species line, the report will search for the ODFW wild fish in the selected stream, basin, or county. The report also allows the user to write a customized heading for the printed report (below). The report program searches the ORFISHD.dbf database and the printing may take a few minutes depending on the speed of your computer; and again, remember to put your printer on compressed print.



The report includes WRD stream number, stream name, the tributary to which it belongs, the species name as it appears in the "Other Species" screen under Resident Fish Resources, and the resident fish value (see Resident Fish Resources) in the selected stream. The WRD stream number appears on this report because the fish species are presently coded to this number, representing the entire stream, rather than each individual river reach as the EPA number does. Consequently the anadromous fish that are presented in this report (and the "Other Species" screen under Resident Fish Resources) do not represent the precise distribution of these species. Those data should be obtained from the Resource Report for anadromous fish.

VIEW RESOURCE DATA

The "View" screen displays location information on the selected stream reach as well as general "Resource Values" from the River Study in an inset window (below).



The location information on the View screen includes:

EPA Reach #: The fifteen digit code for this reach

Type: The EPA Reach designation to describe transport reaches and shoreline reaches (see Appendix C)

Key: The EPA Key tells you where you are on the stream system relative to the headwater or the mouth (see Appendix C)

Length: The length of the displayed reach in miles

River Name: The name of the river and the downstream and upstream reach boundaries (from to)

CumLeng: The cumulative river mileage to the upper end of the displayed reach

Width: The width of the displayed reach in meters

Trib of: The river into which this reach flows

Basin: The WRD river basin where the reach is located

County: The county or counties where this reach is located.

Map: The USGS 1:100,000 scale map name on which this reach is located

Township: The township and range in which the displayed reach is located

WRD #: The Oregon Water Resources Dept. stream code.

RESOURCE VALUES

The numeric resource values on the inner window of the View screen (above) represent the value classes designated by agencies during the River Study for each resource. The range of values include:

1 -- Outstanding resource value
2 -- Substantial resource value
3 -- Moderate resource value
4 -- Limited resource value.

In addition, "U" indicates that the value is Unknown (except for Archaeological values), "N" indicates the resource is Not present, and "Y" indicates, Yes, the resource is present. A blank space indicates that no data is present for the specific value.

Six "Other" resources included on the screen include the presence or absence of Nonpoint Source Pollution information, Hatcheries, Federal Energy Regulatory Commission sites (FERCsites = hydro projects), Fishways or

Barriers, Instream Water Rights, and Protected Areas. The Protected Area designation indicates whether the reach is protected from small hydropower development by the Northwest Power Planning Council (NPPC).

The preferred work periods for instream construction activities (Prefrd Instr Work Timing) are displayed in the upper right corner of the inner window. These work timings are recommended by ODFW biologists and are part of the Administrative Rules for Inwater Blasting Activities.

MENU BAR

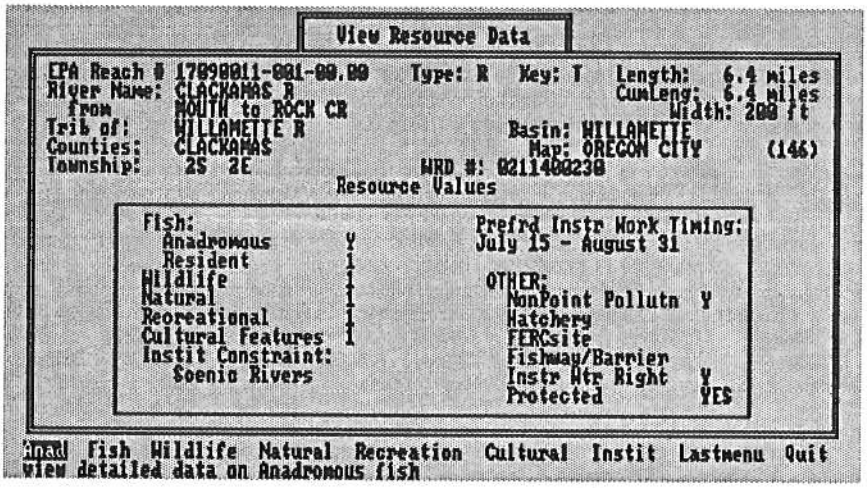
The menu bar options (second line from the bottom) of the View screen are:

Next	View the next river reach upstream or alphabetically if the displayed reach is the upper-most (highest) in the system.
Previous	View the previous river reach downstream or alphabetically if the displayed reach is the lowest in the system.
Downstream	View the next river reach downstream of the displayed reach.
Upstream	View the next river reach upstream of the displayed reach.
Resources	View a detailed listing of resource values for this reach (see page for further detail).
Other	View other detailed information that occur on the displayed reach. "Hatchery" is the only other resource without additional information (see page for further detail).
Abbrev	View any abbreviations used on this screen, such as those used for TYPE and KEY.
Quit	To return to the Master Menu for another selection.

These selections may be chosen by moving the highlighted cursor with the arrow keys, or by pressing the first letter of the selection. The bottom line on the View screen describes the menu selection. You may print these screens at any time by using the print screen option (the Shift/Print Screen key).

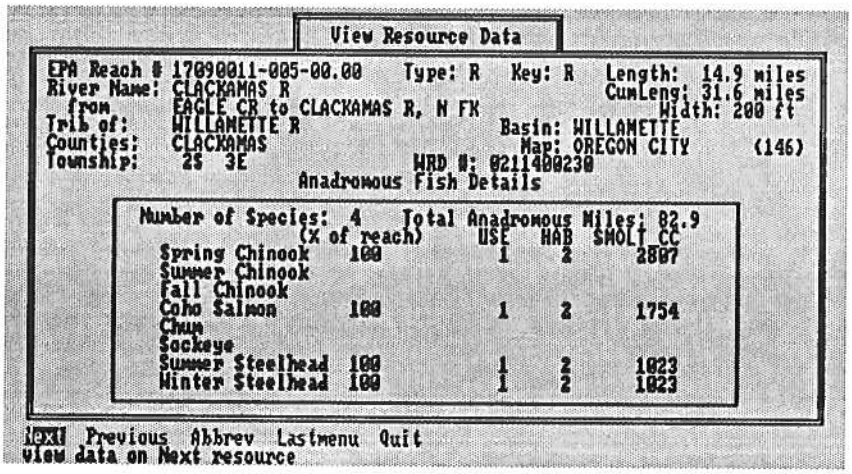
RESOURCES

Select "Resources", on the menu bar at the bottom of the View screen to change and display additional menu bar choices of resource categories (below). Other choices include "Quit" which returns you to the Master Menu and "Lastmenu" which hereafter returns you to the previous menu choices. All river reaches in Oregon have not been evaluated for resource values and the completeness of the evaluations varies among the resources. Detailed information is not available, of course, if the resource is unknown or not present.



ANADROMOUS FISH RESOURCES

Select "Anad" on the Resources menu bar to display "Anadromous Fish Details" on the inset window (below). All of the location information stays the same for the selected reach and the new menu bar choices have the same meanings as described earlier. As a result of the BPA subbasin planning effort in the late 1980's for the Columbia River Basin, ODFW biologists recorded additional data besides just presence/absence. These data include use values and habitat values. Based on these values and the usable area, Duane Anderson (NPPC) developed the Smolt Density Model that estimated the smolt carrying capacity a reach.



The following information is contained in the Anadromous Fish Details window:

Number of Species: The total number of salmon and steeled species present in this reach.

Anadromous Miles: The total miles of this stream occupied by anadromous fish.

% of reach: Percentage of the reach each species occupies.

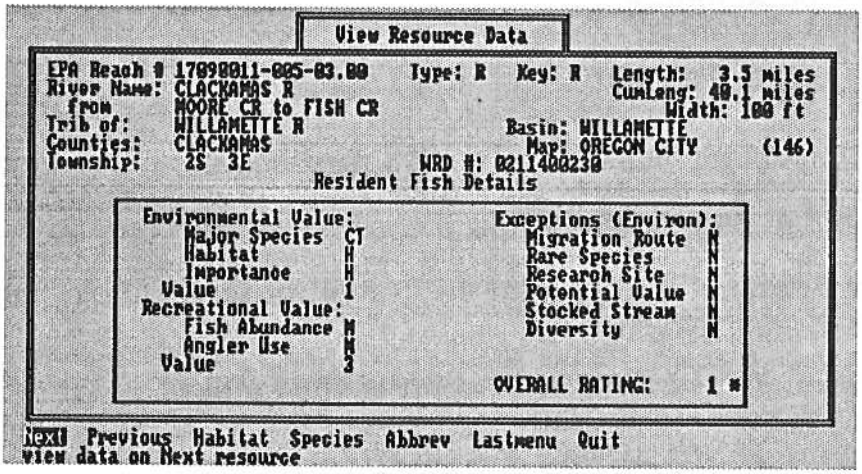
Use Values: 0) no production, 1) spawning & rearing, 3) rearing only.

Habitat Values: 0) species not present, 1) excellent, 2) good, 3) fair, 4) poor.

Smolt_CC: Smolt carrying capacity for the reach based on usable area, use, and habitat values.

RESIDENT FISH RESOURCES

Select "Fish" on the Resource menu bar, to display "Resident Fish Details" on the inset window (below). All of the location information stays the same and the new menu bar choices have the same meanings as described earlier with the exception of "Habitat" and "Species" (explained later).



The following information is contained in the Resident Fish Details window:

Environmental Value: This value is predicated on the major species in the selected river reach and evaluating it in a High-Medium-Low matrix (below) on two criteria; Habitat Quality and Species Importance. This selection and evaluation was determined by biologists from ODFW, Bureau of Land Management (BLM), and US Forest Service (USFS).

EVALUATION MATRIX:

		SPECIES IMPORTANCE H	M	L
HABITAT QUALITY	H	1	2	3
	M	2	3	4
	L	3	3	4

Major Species: The major resident fish species, and chosen on the basis of being the most important present in the selected reach. Select "Abbrev" in the menu bar at the bottom of the screen to see the meaning of the abbreviation.

Habitat: The general evaluation of the habitat quality in the selected reach. Select "Abbrev" in the menu bar for the meaning of the abbreviations.

Importance: The general evaluation of the importance of the major species in the selected reach.

Value: The numerical value result of the general evaluation of Habitat and Importance in the matrix. The numerical values represent:

1 = outstanding
2 = substantial
3 = moderate
4 = limited

Recreation Value: This value is also predicated on the major species by evaluating the criteria; fish abundance and angler use, in a similar High-Medium-Low matrix as for Habitat and Importance.

Fish Abundance: The general evaluation of harvestable fish abundance in the selected reach.

Angler Use: The general evaluation of the amount of time spent angling in the selected reach.

Value: The numerical value result of the general evaluation of fish abundance and angler use. The values are the same as above.

Exceptions: These may have been used to raise or lower one of the above evaluations. A "Y" for Yes indicates the exception criteria is present and "N" for No indicates the criteria is not present.

Migration Route: The reach is a migration route for the major species.

Rare Species: A threatened, endangered, or limited distribution species is present in the reach.

Research Site: Research is being conducted within the reach.

Potential Value: Conditions within the reach are expected to change in the near future.

Stocked Stream: The reach has a high incidence of hatchery stocking to maintain the fishery or natural production.

Diversity: The reach has several species of major importance.

Exceptions were also used for the recreational criteria. When these are present they will appear and represent:

Quality of Recreational Experience: Aesthetic qualities or trophy fish present to greatly enhance the experience.

Economic Importance: Important to the local economy.

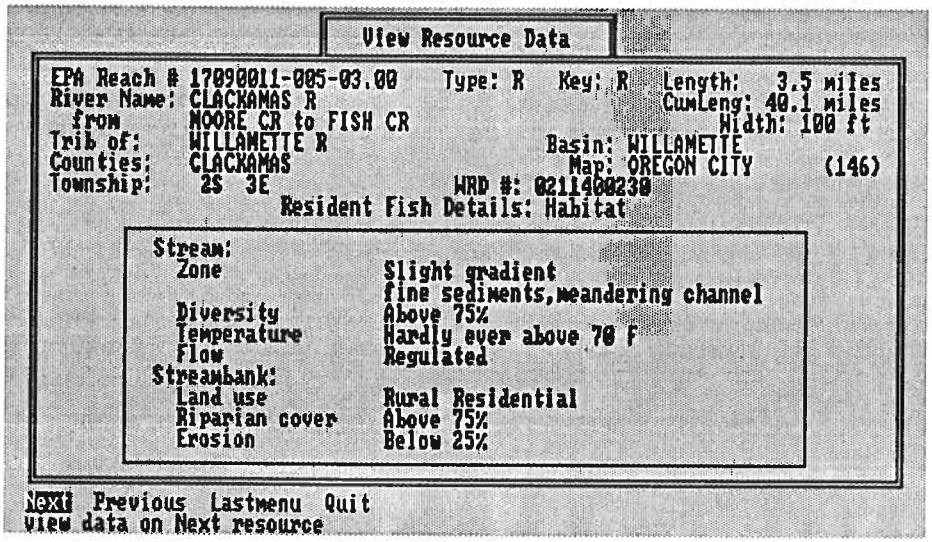
Unique Angling Opportunity: A fishing resource that is unique to the immediate area.

Potential Value: The recreational use is expected to improve significantly in the near future.

Overall Rating: The higher of the two numerical values of either "Environmental Value" or "Recreational Value". An asterisk (*) next to the value indicates a comment is included on the "Abbrev" screen. These comments may be somewhat cryptic. The abbreviation RM or R/M means river mile. Often a comment will indicate that for a river mile range, say 0-34, some condition exists, for example, R/M 0-12 LOW SUMMER FLOW might be a typical special comment.

Fish Habitat

Select "Habitat" on the Resident Fish Details menu bar, to display "Resident Fish Details: Habitat" on the inset window (below).



The following information is contained in this window (see Appendix B, ORFISH.dbf Documentation for data field options):

Stream Zone: A general description of the gradient, sediments, and channel morphology.

Diversity: A general value expressed in percentage of complexity of stream structure, cover, and pool/riffle ratios.

Temperature: A general value for the amount of time stream temperature is above 70 degrees Fahrenheit.

Flow: A general value for the amount of flow regulation or withdrawal on the stream.

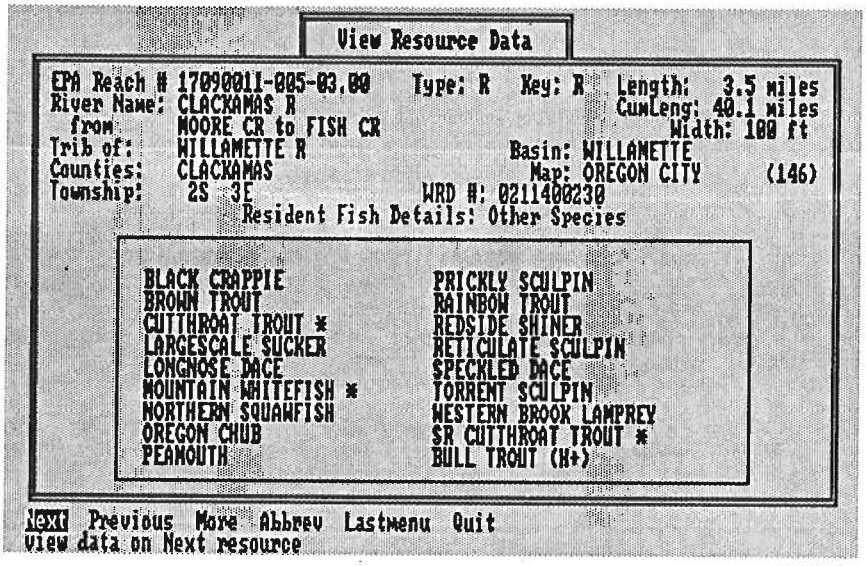
Land Use: The general land use activity adjacent to the stream reach.

Riparian Cover: A general value expressed in percentage of cover along the stream reach bank.

Erosion: A general value expressed in percentage of erosion along the stream reach bank.

Other Species

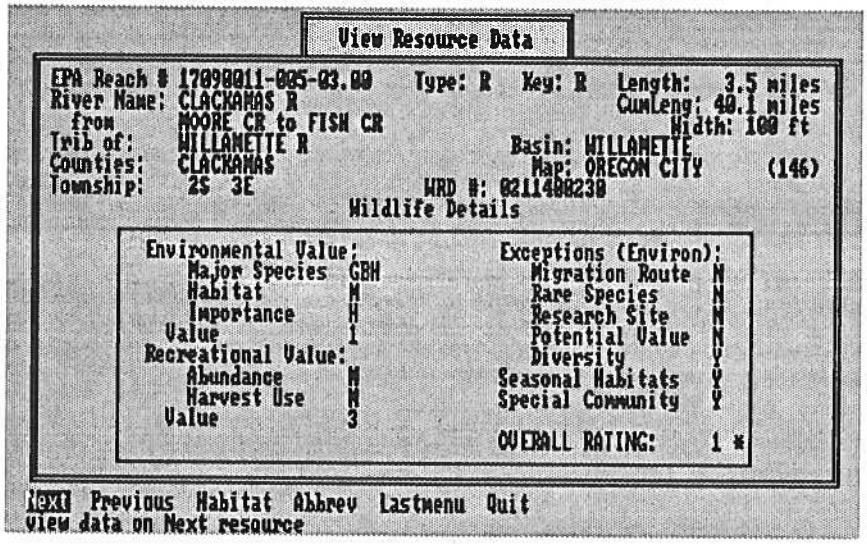
Select "Species" on the Resident Fish Details menu bar, to display "Other Species" present in this stream (below). Not all streams have data for this selection. The data is based on historical collections by the Oregon State University and ODFW designations of wild fish provisional populations, indicated with an asterisk (*). The Species screen has also been enhance by merging fish species from the FERCsite (@) and Instream Water Rights (#) databases to allow the user to go to this location to find all the identified species for a specified river system. As explained previously in "Option 6: SPECIES REPORT", this data is coded to the WRD stream number and indicates species are present in the selected stream, not necessarily in the specific reach.



If there are more fish present than can be displayed on one screen, the "More" message appears in the upper right corner of the screen. By selecting "More" on the menu bar, additional species names are displayed. An abbreviation screen also identifies the notations and sources.

WILDLIFE RESOURCES

Select "Wildlife" on the Resource menu bar to display "Wildlife Details" on the inset window (below). All of the location information stays the same and the new menu bar choices have the same meanings as described earlier with the exception of "Habitat" (explained below). The headings, information, and evaluation in the window are generally the same as those used for Resident Fish (see Appendix B, ORWILD.dbf Documentation for data field options).



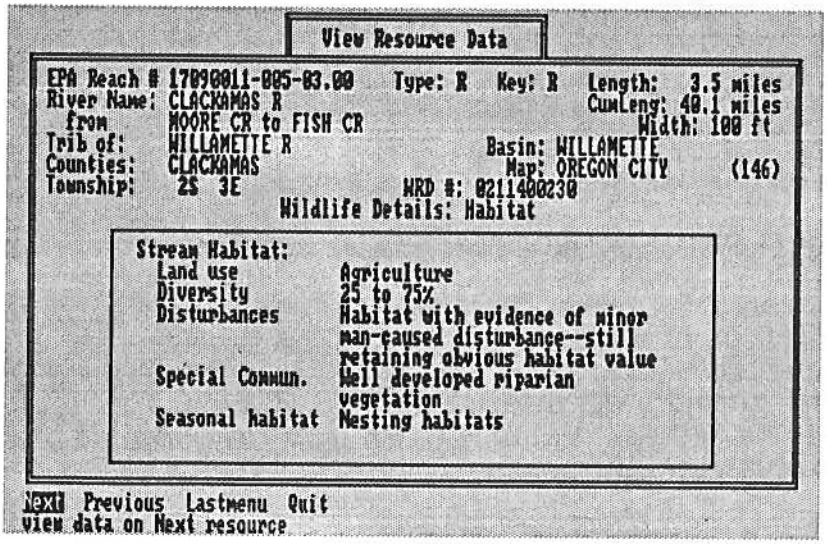
Additional fields in the Wildlife Details window include:

Seasonal Habitats: A "Y" indicates habitat areas that are important to wildlife but are only used seasonally (see "Habitat" screen below).

Special Community: A "Y" indicates habitat communities of special concern for wildlife are present (see "Habitat" screen below).

Wildlife Habitat

Select "Habitat" on the Wildlife Details menu bar to display "Wildlife Details: Habitat" on the inset window (below).

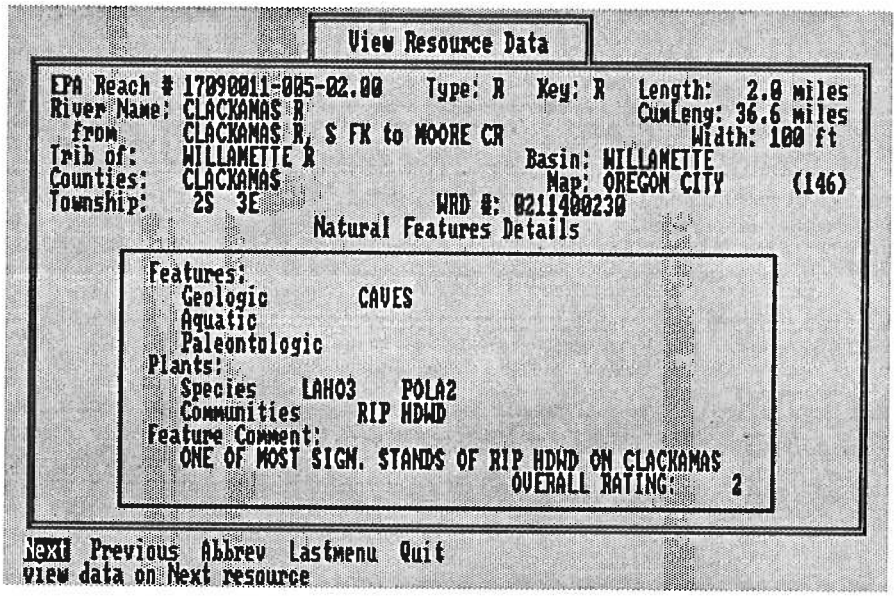


The following information is contained in this window;

Land Use: The general land use activity adjacent to the stream reach.
Diversity: A general value expressed in percentage of complexity of structure, cover, and vegetation types for wildlife habitat.
Disturbances: A general indication of major or minor man-caused disturbances.
Special Commun.: Habitat communities of special concern for wildlife, such as river islands, substantial riparian vegetation, old-growth cottonwood or coniferous bottoms, or wetland.
Seasonal Habitat: Habitat areas that are important to wildlife but are only used seasonally, such as big game winter range, or nesting habitat.

NATURAL RESOURCES

Select "Natural" on the Resource menu bar to display "Natural Features Details" on the inset window which contains a list of unique natural resources present in this reach (below). Geologic features include landforms such as a "canyon", Aquatic features such as "Hotsprings" are listed; and Paleontologic features are noted with "Y" for Yes they are present and "N" for No they are not present. Plant species and communities are also identified on the screen where present. An abbreviation window identifies the plant species coding.

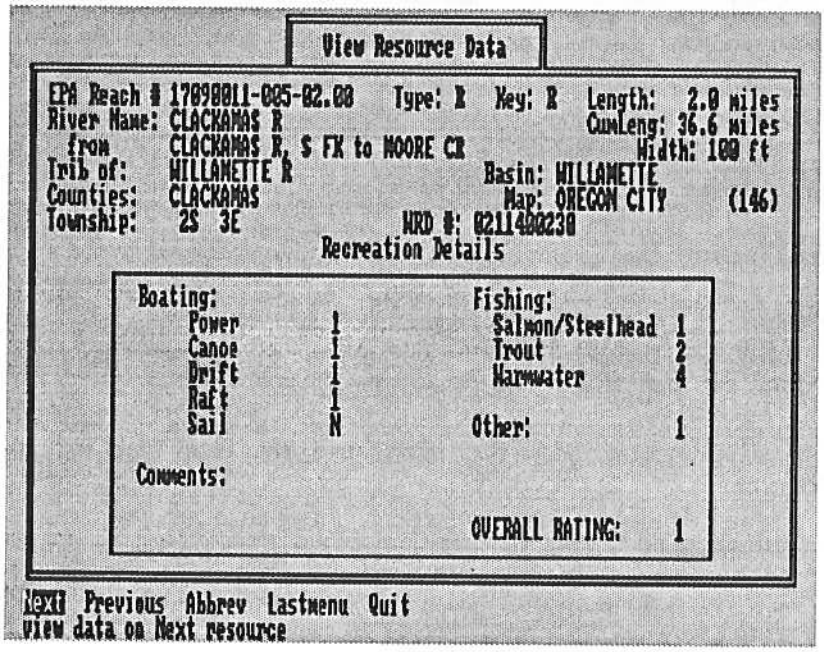


The overall rating is based on four standards: scarcity, vulnerability, quality, and value. Scarcity refers to the quantity of the feature in Oregon and throughout the world. Any feature that was especially vulnerable, of outstanding quality, or of great scientific interest received the highest rating, regardless of its degree of scarcity. Vulnerability is the chance that a natural feature might be harmed or destroyed. Quality is the relative physical condition of a natural feature. Value is the relative importance of the feature to science and for educational purposes.

RECREATIONAL RESOURCES

Select "Recreation" on the Resource menu bar to display "Recreation Details" on the inset window. This window contains value classes that are based on an assessment of nine recreation types, including:

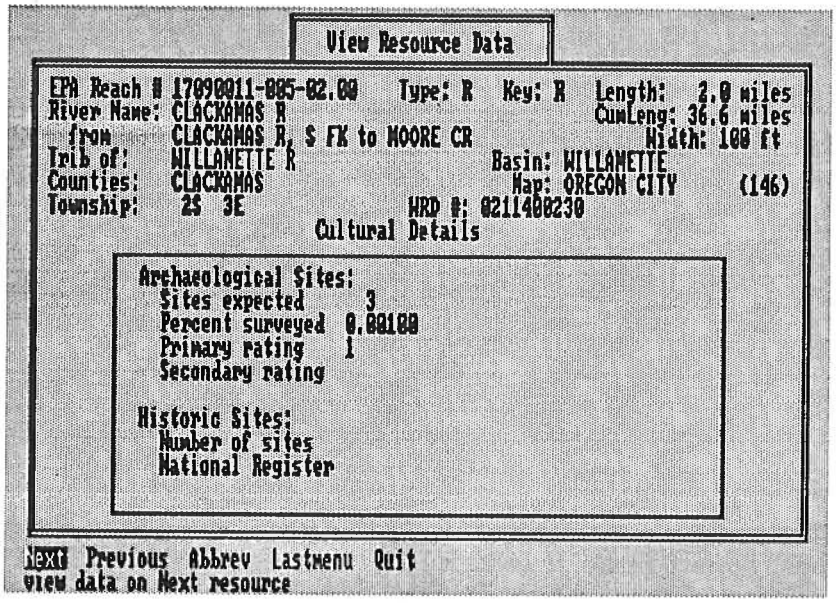
Power Boating
Canoeing/Kayaking
Drift Boating
Rafting
Sailing/Windsurfing
Salmon and Steelhead Fishing
Resident Trout Fishing
Warmwater Gamefish Fishing
Other, such as hiking, swimming, nature study, hunting, camping, biking, or horseback riding.



Value classes are assigned for each recreation type on each reach and the numerical values represent those discussed earlier for resident fish. The Overall Rating is the highest of all recreation types for the reach.

CULTURAL RESOURCES

Select "Cultural" on the Resource menu bar to display the "Cultural Details" for a reach on the inset window (below).



Archaeological Sites include:

Sites Expected: The number of sites expected within the township/range unit as extrapolated from a known number, the survey level, and the unit's potential characteristics.

Sites Surveyed: The percentage of those sites that were actually surveyed.

Primary & Secondary Rating:

1 = Highest Potential
2 = High Potential
3 = Medium Potential
4 = Low Potential
U = Unknown Potential
N = No Potential

The Historic data has not been formatted for use within the ORIS database yet, but will eventually be a combination of Archaeological features. Historic Sites will be the number of sites surveyed in the Township (in the federal Township and Range system) and whether they are on the National Register of Historic Sites.

INSTITUTIONAL CONSTRAINTS

Select "Instit" on the resource menu bar to display "Institutional Details" on the inset window (below). Information on Institutional Constraints will ultimately include data on all federal and state laws, rules, and local ordinances that limit river activities in Oregon. Examples of this data will include parks, wilderness areas, natural areas, etc. At this time, the information is limited to federal and state wild and scenic river designations.

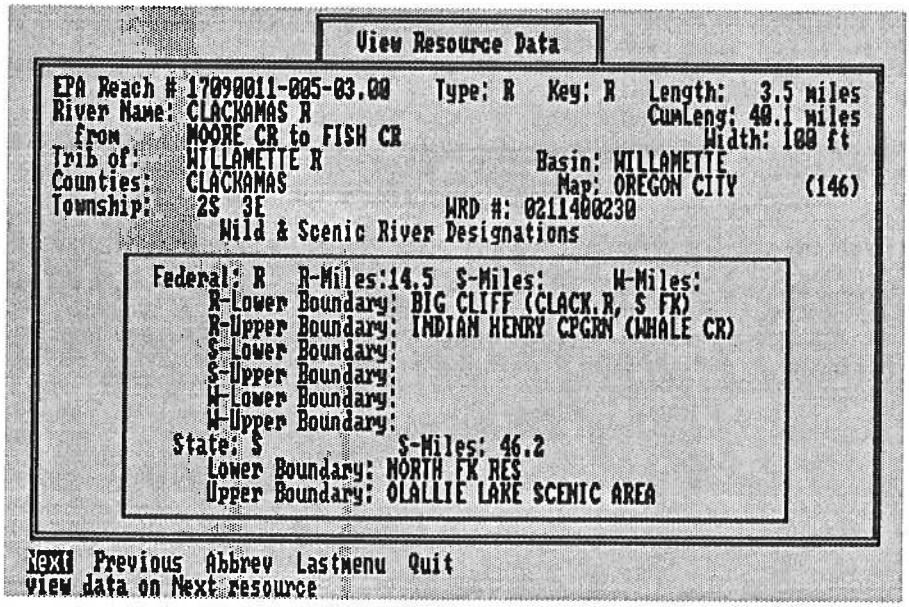
The federal designations include (also see "Abbrev" on the menu bar):

W = Wild
S = Scenic
R = Recreation, or
St = Study area.

The miles for each designation are listed for the total contiguous miles of each designation (not just in the specific reach). These mileage's are listed in federal statute.

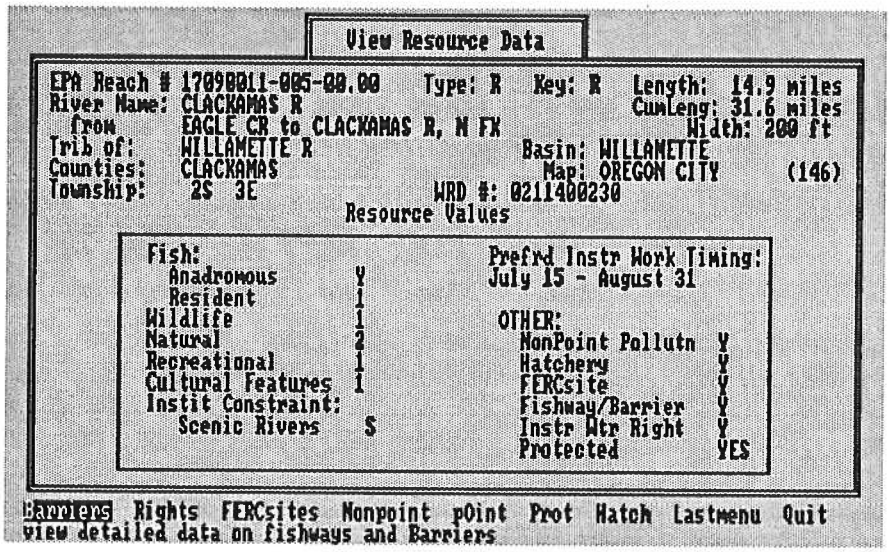
State designations are only Scenic "S", and the total miles are estimated from the reach lengths.

The "Lower Boundary" and "Upper Boundary" of each designation are listed as near as possible to the actual description from statute. Reach features were used in the "Boundary" descriptions whenever possible. Where several federal designations occur within a reach, the alphabetical designations (R, S, or W) are displayed in ascending order of occurrence in the stream.



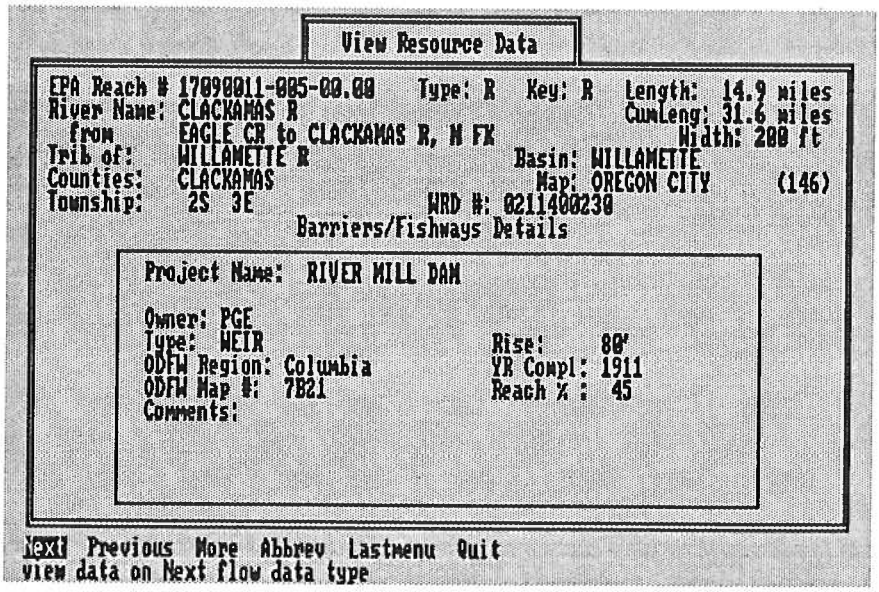
OTHER RESOURCES

If values are present in the "OTHER" resource categories on the general "Resource Values" screen, "Other" may be selected on the menu bar to view detailed information for that resource. Select "Other" to change and display additional menu bar choices (below). "Lastmenu" and "Quit" retain the same functions as discussed earlier. Only one of the menu choices do not have data present for display: "pOint". It serves as an example of additional data that may eventually be included in ORIS. These menu items may be chosen by selecting the first letter of the item or by moving the cursor to the item and pressing return.



BARRIERS

Select "Barriers" on the Other menu bar to display "Barriers/Fishways Details" on the inset window (below).



This window displays information on the fishways maintained by the ODFW and contains:

Project Name: The name of the fishway as given by the ODFW fishway inspector.

Owner: The owner of the fishway.

Type: The type of fishway.

Rise: The height of the fishway.

ODFW Region: The ODFW administrative region where the fishway is located.

YR Compl: The year the fishway construction was completed.

ODFW Map #: A specific location identification used by the ODFW inspector.

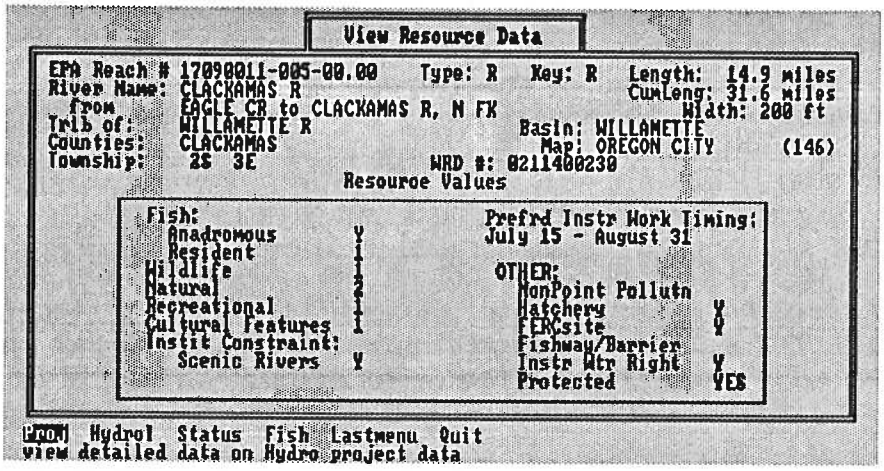
Reach %: The location of the fishway as a percentage of the stream reach length from the lower boundary ("from").

Comments: Specific comments made by the ODFW inspector.

FERCsites

Select "FERCsites" on the Other menu bar to display details on hydropower projects in the reach. These projects include Federal Energy Regulatory Commission (FERC) projects and other Federal projects that are operating, under construction, or identified sites. All of the data displayed in the four hydro windows are part of the Pacific Northwest Hydropower Database developed by the Corps of Engineers in cooperation with the Northwest Power Planning Council and the Bonneville Power Administration. A detailed description of the data items can be obtained in a report (Pacific Northwest Hydropower Database and Analysis System; Data Item Description; June 1986), from the Corps of Engineers.

By selecting "FERCsites", the menu bar changes to display additional choices for specific aspects of a project (below).

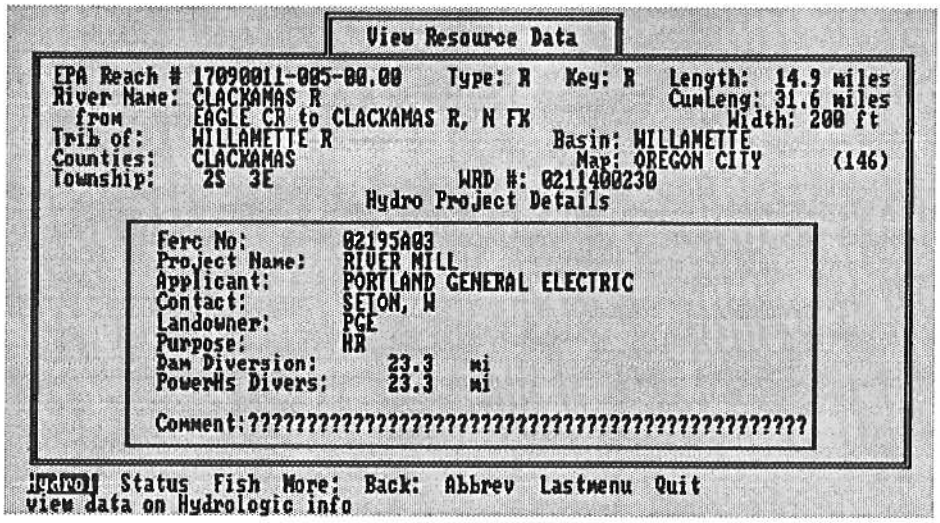


The menu bar options include:

Proj: View the location Hydropower Project Details.
Hydrol: View the Hydrologic Characteristic Details for the project.
Status: View the latest status of the project in the Hydro Status Details window.
Fish: View information on the fish resources and projects power capacity and fish resources on the Hydro Fish & Power Details window.
Lastmenu & Quit: These choices retain the same functions as described earlier.

Project Details

Select "Proj" to change the inset window and display "Hydro Project Details" (below).



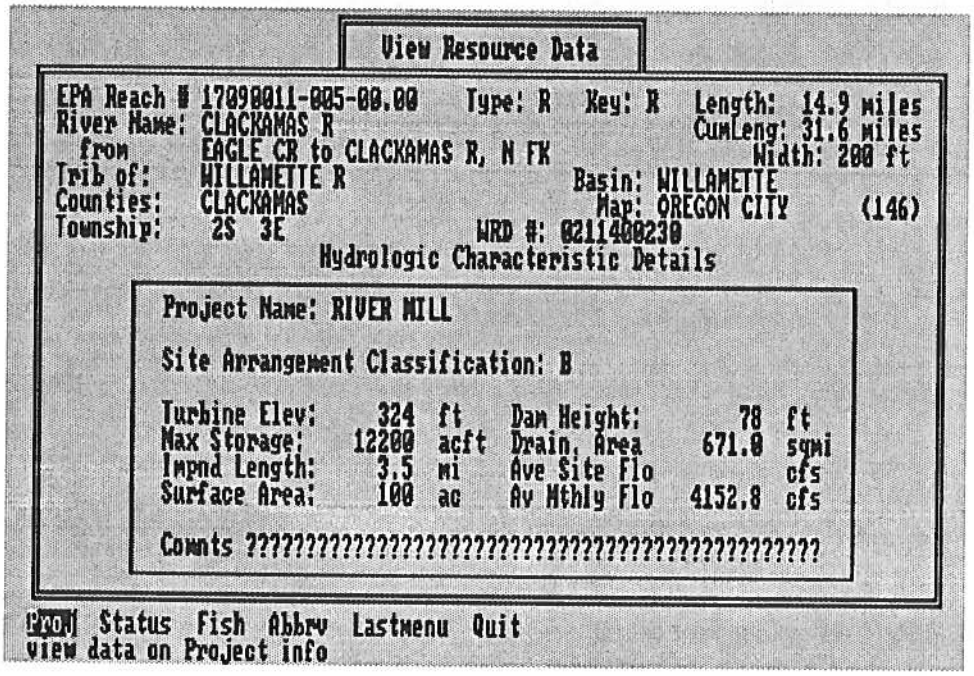
The following information is contained in the Hydro Project Details window:

FERC No: The Federal Energy Regulatory Commission permit number of the project.
Project Name: The hydropower project name. The name is repeated in each of the four hydro windows to maintain orientation.
Applicant: The hydropower permit applicant or developer name.
Contact: The project applicant or developer contact.
Landowner: The landowner where the project is located.
Purpose: The purpose(s) of the project an abbreviation or code. The meaning of the abbreviation can be displayed by selecting "Abbrev" on the menu bar.
Dam Diversion: The dam or diversion location by stream mile.
PowerHs Divers: The powerhouse location by stream mile.
Comments: Comments on the general location of the project.

As the window changes to display the information above, the menu bar also changes to display the other FERC project options. Select "More:" on the menu bar of the "Hydro Project Details" window to display any additional projects within this reach. Select "Back:" to return to the first hydro project displayed on this reach.

Hydrologic Characteristics

Select "Hydrol" to display the "Hydrologic Characteristic Details" on the inset window (below).



The following information is contained in the Hydrologic Characteristic Detail window:

Project Name: Same as before.

Site Arrangement Classification: An abbreviation that describes the layout and physical status of existing and potential hydropower projects. The abbreviation meanings can be displayed in a table by selecting "Abbrev" on the menu bar.

Turbine Elev: The powerhouse turbine elevation in feet.

Max Storage: The maximum storage space in the reservoir in acre feet.

Impnd Length: The length of the impoundment at maximum pool elevation in miles.

Surface Area: The surface area at maximum pool size in acres.

Dam Height: The height of the dam or diversion in feet

Drain. Area: Drainage basin area in square miles above the project dam or diversion.

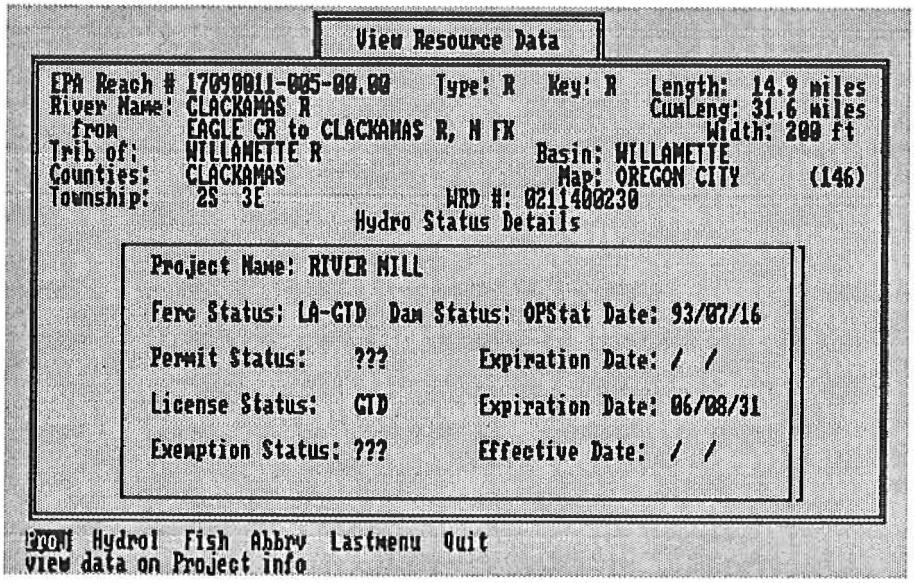
Ave Site Flo: Average annual stream flow in cubic feet per second (cfs) at the project diversion site.

Ave Mthly Flo: Computed aggregate average monthly stream flow in cfs available to the project each month.

Comnts: Comments on the existing dam or power facility.

Status

Select "Status" to display the "Hydro Status Details" inset window (below).



The following information is contained in the Hydro Status Detail window:

Project Name: Same as before.

FERC Status: Current project status, type and action by FERC as an abbreviation. The abbreviation meaning for this and other fields can be displayed by selecting "Abbrev" on the menu bar.

Dam Status: Physical status of the dam or diversion.

Stat Date: Date of the current status as YY/MM/DD.

Permit Status: FERC permit status.

Expiration Date: FERC expiration date for the permit (YY/MM/DD)

License Status: FERC license status.

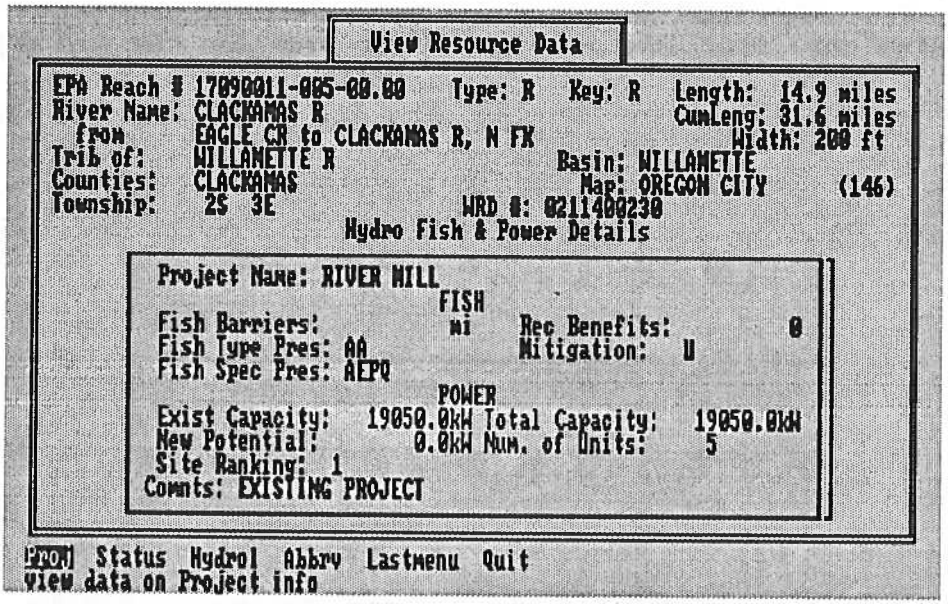
Expiration Date: FERC expiration date for the license (YY/MM/DD)

Exemption Status: FERC exemption status.

Effective Date: Effective date for the FERC exemption (YY/MM/DD)

Fish & Power

Select "Fish" to display the "Hydro Fish & Power Details" inset window (below)



The following information is contained in the Hydro Fish and Power Details window:

Project Name: Same as above.

Fish Barriers: Location of anadromous fish barrier in miles

Fish Type Pres: Abbreviations indicating the type of fish present. The abbreviation meanings for this and other data fields can be displayed by selecting "Abbrev" on the menu bar.

Fish Spec Pres: Abbreviation indicating the type of fish species present.

Rec Benefits: Project benefits for fish and wildlife

Mitigation: Other mitigation required.

Exist Capacity: Installed existing capacity in kilowatts (kW)

New Potential: Installed capacity--new potential, computed in kW

Total Capacity: Installed capacity--total capacity, computed in kW

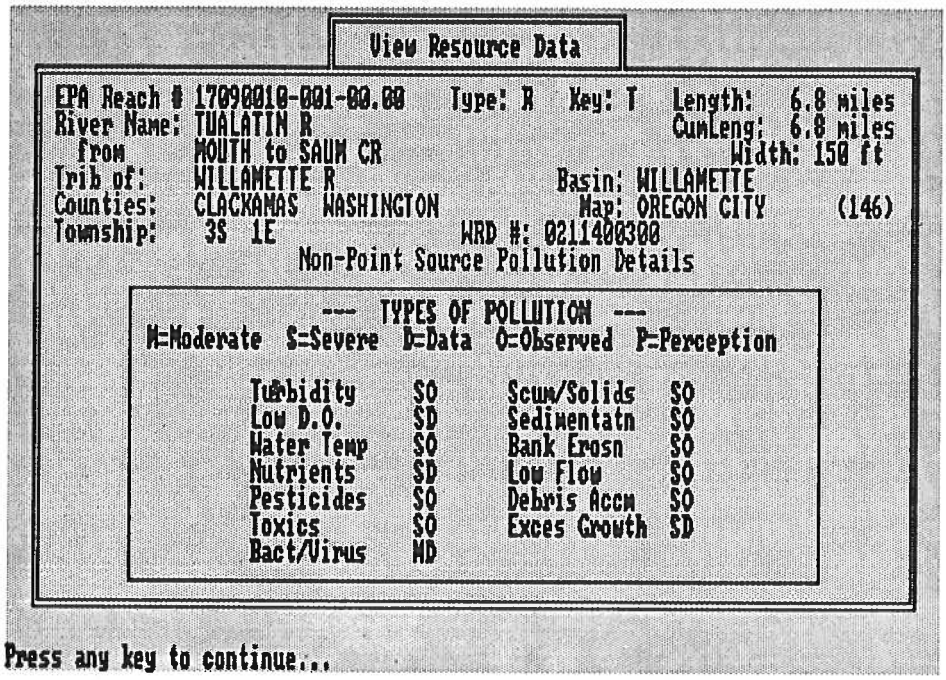
Num. of Units: Number of units installed at a project including existing and potential new units.

Site Ranking: Regional site ranking.

Comnts: Comment on the basis of ranking.

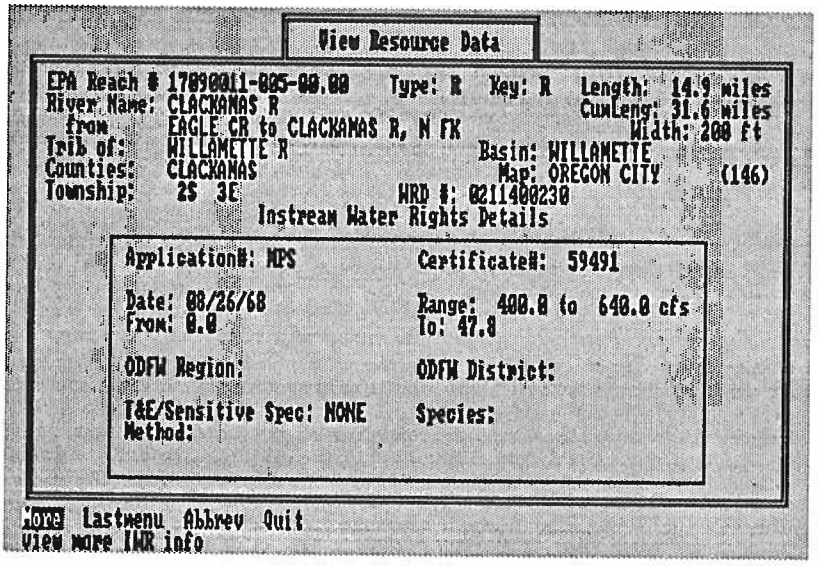
NONPOINT SOURCE POLLUTION

Select "Nonpoint" on the Other menu bar to display Non-Point Source Pollution Details (below). The next four screens represent data on the "Types of Pollution" (keyed on screen to severity and data reliability), "Impacted Beneficial Uses", "Probable Causes", and "Associated Land Uses" (see Appendix B, NPS.dbf Documentation for data field options and descriptions). The data is from the Department of Environmental Quality's (DEQ) 1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution. After the last screen of data, the menu options are either "Lastmenu" that returns to the last menu or "Quit" that returns to the main menu.



INSTREAM WATER RIGHTS

Select "Rights" on the Other menu bar to display instream water rights (below) that have either been applied for by the ODFW or certified by the Water Resources Department (WRD). Instream water rights (IWR) are essentially legal appropriations of specific amounts of water to support fish and wildlife populations and habitats. The amounts reserved vary by month (in some cases, by half-month) based on the needs of fish present in the selected stream reaches. IWRs are subject to the same Prior Appropriations Doctrine (first in time, first in right) that govern the seniority of consumptive water rights.



The Instream Water Rights Details window displays the following information:

Application #: A number assigned by WRD. "MPS" indicates an IWR established by conversion of an established Minimum Perennial Stream flow rather than by application.

Certificate #: The number assigned by WRD to the certified IWR. If a "PND" and number are displayed, it indicates that the Application is based on an MPS and no Certificate number has been assigned yet because it is still pending.

Date: The priority date of the IWR. Water rights for out-of-stream appropriations with earlier dates have priority over the IWR.

Range: The range of flow, in cubic feet per second (cfs), that has been certified. The IWR flow amount requested generally varies between summer low flows (minimum) to winter high flows (maximum).

From: The lower boundary of the instream water right.

To: The upper boundary of the instream water right.

ODFW Region: The ODFW administrative and geographical region in which the IWR occurs.

ODFW District: The ODFW fish district within the region and in which the IWR occurs.

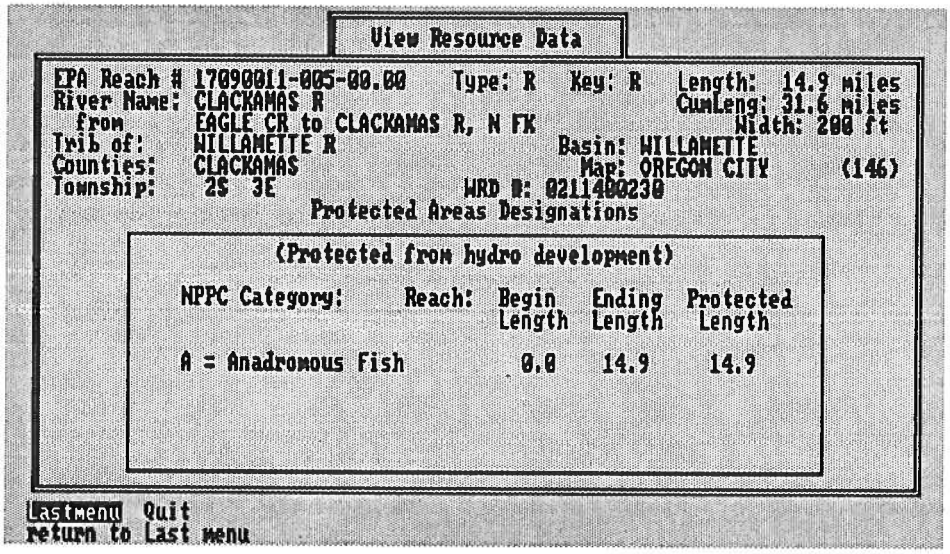
T&E/Sensitive Spec: An indicator of the presence (T=True) of known threatened and endangered or sensitive species, or their absence (NONE=not present)

Species: The abbreviations for the major species (some may not be listed) on which the IWR was based. By selecting "Abbrev" on the menu bar of this screen, the abbreviations for the listed species will be identified on an additional window.

Method: The instream flow method or stream flow data used to establish the instream flow levels required to maintain the identified fish populations and their habitats.

PROTECTED AREAS

Select "Prot" on the Other menu bar to display the Northwest Power Planning Council (NPPC) designated Protected Areas (below). These streams are protected from small hydropower development as defined and qualified by the NPPC.



The Protected Area Detail window displays the following:

NPPC Category: The protected category designation and the resources it represents.

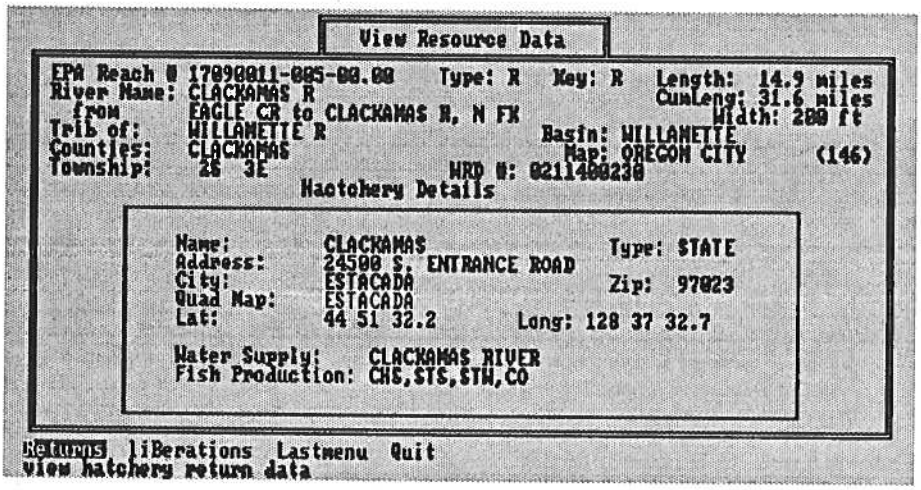
Beginning Length: Within the selected stream reach length, this is the mileage where the protected category starts.

Ending Length: Within the selected stream reach length, this is the mileage where the protected category ends.

Protected Length: Within the selected stream reach length, this is the total mileage protected for the category.

HATCHERY

Select "Hatch' on the Other menu bar to display hatchery information located in the selected reach (below).



The following information is displayed in the Hatchery Detail window:

Name: This is the name of the hatchery or facility in the ODFW records.

Address: mailing address from ODFW records

City: from ODFW records

Zip: from ODFW records

Quad Map: The 7.5 minute quad map on which the facility is located.

Type: Whether the hatchery is a state, federal, or other type of facility.

LAT: Latitude of the facility.

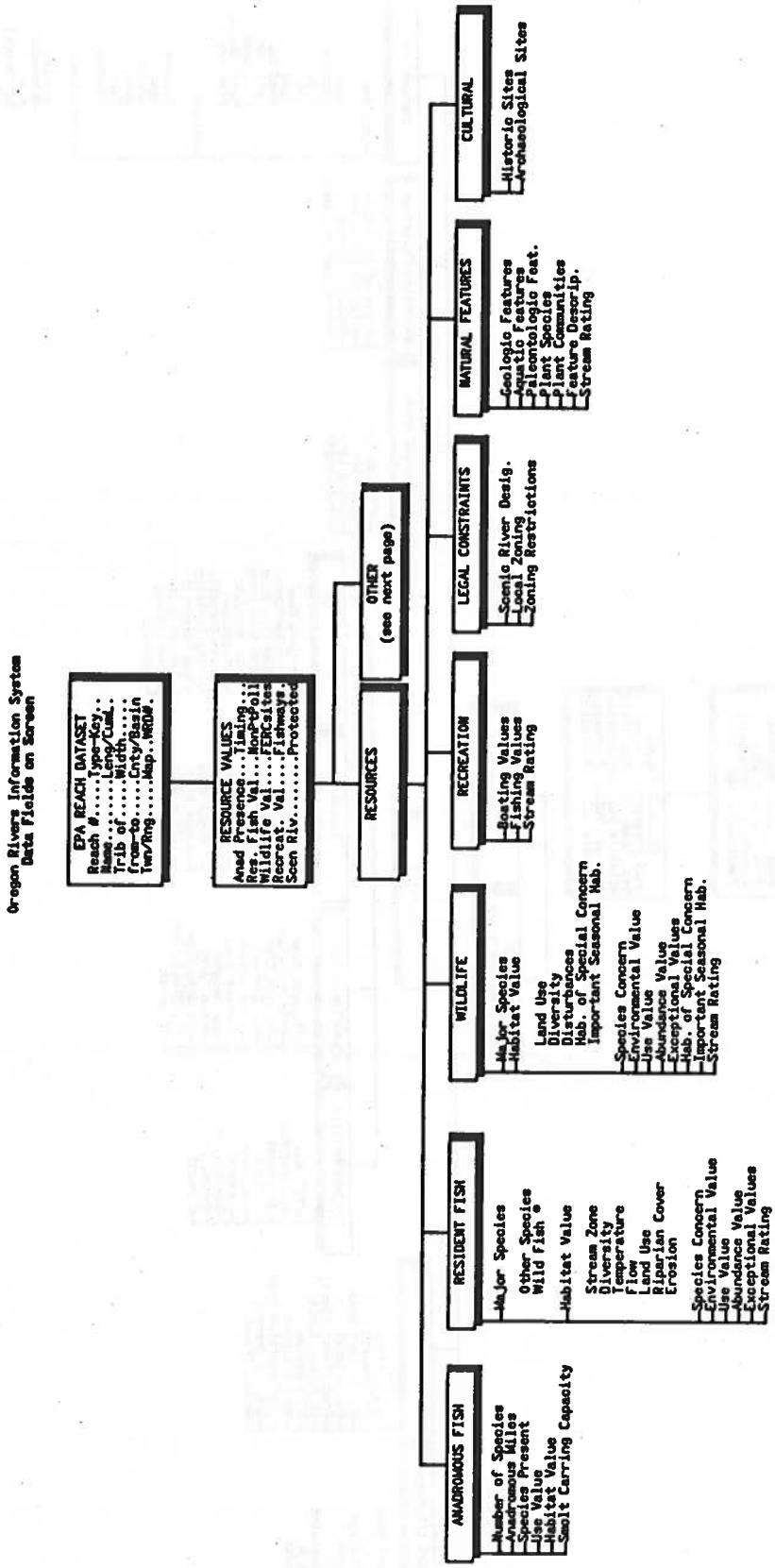
LONG: Longitude of the facility.

Water Supply: The stream from which the facility takes its water.

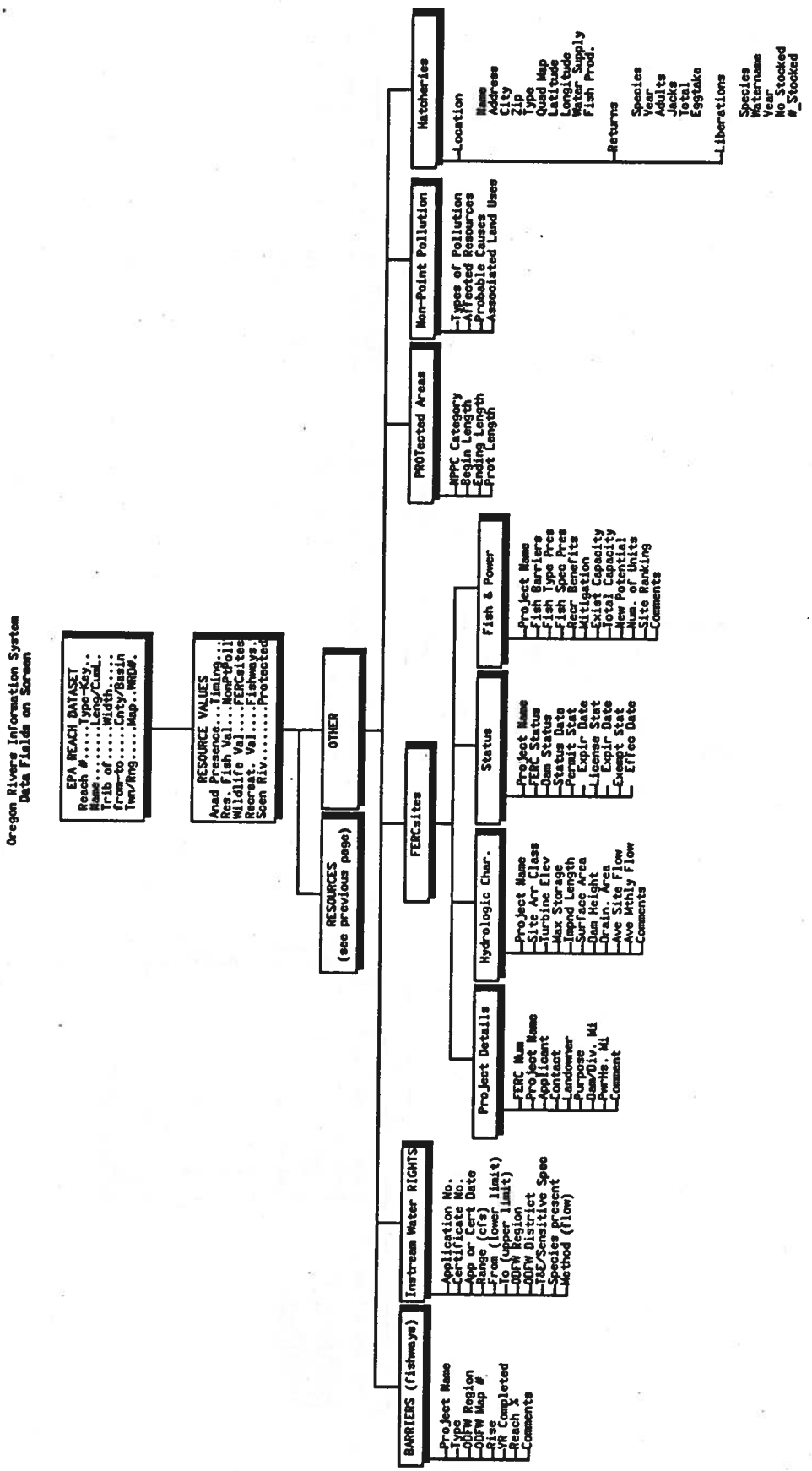
Fish Production: The ODFW codes for species raised at the facility, they are defined in the "Resource Report" print-out for hatcheries on the Main Menu.

The menu bar choices allow the user to view the "Returns" or "liBerations" of the facility by pressing either "R" or "B" respectively. The reports are a summary of the last 10 years of records and allow a print-out of the records after viewing the data. The Return report displays: hatchery name, species returning, year returned, number of adult returns, number of jack returns, total returns, and eggtake for that species. The liBeration report displays: hatchery name, species liberated, liberation water body, the WRD number for the basin of the water body, year of liberation, number stocked, and pounds stocked. **Remember**, your printer must be on compressed print .

APPENDIX A: DATABASE STRUCTURE



APPENDIX A: DATABASE STRUCTURE (continued)



APPENDIX B: OREGON RIVERS INFORMATION SYSTEM DATABASE FILES

Details: This appendix briefly lists the current files comprising the Oregon Rivers Information System.

For more detailed reference see the attached individual file descriptions that follow. Note that the files are listed in alphabetical order by filename. See also the "Pacific Northwest Rivers Study: Assessment Guidelines: Oregon" dated December 1986.

Note: The names, sizes, and structure of these files may change as new EPA River reach data and other resource data is added.

Database FILES	Approximate Size (K bytes)	Description
FISHSPEC.dbf	2	Fish Species abbreviations
IWR.dbf	214	Instream Water Rights
IWRXREF.dbf	85	Link between EPA river reaches & IWRs
LIBS.dbf	878	Oregon hatchery liberations, '83 - '93
NEWALL.dbf	5,626	The main EPA River Reach file
NPS.dbf	1,431	Nonpoint Source Pollution data
ORARCH.dbf	90	Archaeological data
ORANAD.dbf	440	Anadramous fish detailed data
ORBASIN.dbf	1	Oregon basin name and number
ORCORP1.dbf	362	NW Hydro Dbase: location & status
ORCORP2.dbf	183	NW Hydro Dbase: physical & hydrol.
ORCORP3.dbf	213	NW Hydro Dbase: fish & power
ORCOUNTY.dbf	1	County name and FIPS number
ORFISH.dbf	1,172	Resident fish detailed data
ORFISHD.dbf	395	Fish Distribution Dbase from OSU
ORFWAY.dbf	105	Fishway database from ODFW
ORHATCH.dbf	16	Oregon hatchery database
ORMAP.dbf	18	USGS map names and map number
ORNATR.dbf	665	Natural features detailed data
ORPROT.dbf	501	NPPC designated Protected Areas
ORRECR.dbf	226	Recreational features detail data
ORSCEN.dbf	227	Scenic rivers detailed data
ORWILD.dbf	1,128	Wildlife detailed data
RETURNS.dbf	55	Oregon hatchery returns, '83 - '93
TIMING.dbf	2	Preferred work period data
WRDCO.dbf	749	A cross-reference file for reports
WILDSPEC.dbf	2	Wildlife species abbreviations

FISHSPEC.dbf Documentation

Oregon FISH SPECies name and abbreviation file in
Oregon Rivers Information System

Structure for database: FISHSPEC.DBF
Number of data records: 34
Date of last update : 11/05/90

Field	Field Name	Type	Width	Description
1	SPECIES	Character	3	Fish SPECIES abbreviation
2	NAME	Character	30	Fish Species name
3	REV_DATE	Date	8	Revision date for this record
** Total **			42	

IWR.dbf Documentation

Instream Water Rights Database File for the
Oregon Rivers Information System

Structure for database: IWR.dbf
Number of data records: 1219
Date of last update : 10/01/91

Field	Field Name	Type	Width	Description
1	STREAM	Character	35	Stream name
2	SYSTEM	Character	15	Tributary of stream
3	BASIN	Character	2	Water Resources Department (WRD) basin name
4	FROM	Character	15	Upper stream mile or location
5	TO	Character	15	Lower stream mile or location
6	COUNTY	Character	4	First four letters of name
7	DISTRICT	Character	4	ODFW fish district abbreviation
8	REGION	Character	2	ODFW region abbreviation
9	WRD_NO	Character	25	WRD stream number
10	TE_SENS	Logical	1	T&E or sensitive species presence
11	SPECIES	Character	15	Fish species abbreviation
12	PRIORITY	Character	1	H/M/L ODFW application priority
13	DATA	Logical	1	T/F, Oregon Method was used
14	METHOD	Character	4	Flow method or data used to establish flow
15	APP_NO	Character	6	Application # assigned by WRD, or MPS=Minimum Perennial Streamflow
16	CERT_NO	Character	6	Certificate # assigned by WRD
17	MIN	Numeric	6	Minimum streamflow requested in cubic feet per second (cfs)
18	MAX	Numeric	6	Maximum streamflow requested
19	DATE	Date	8	Priority date of the IWR
20	CONTESTED	Character	3	IWR contested by public or WRD
** Total **			175	

IWRXREF.dbf Documentation

Instream Water Rights Cross-Reference Database for the
Oregon Rivers Information System

Structure for database: IWRXREF.dbf
Number of data records: 2938
Date of last update : 09/16/91

Field	Field Name	Type	Width	Description
1	RRN	Character	16	EPA reach number for IWR
2	APP_NO	Character	6	IWR application number
3	CERT_NO	Character	6	IWR certification number
** Total **			29	

LIBS.dbf Documentation

Oregon hatchery liberation database for the
Oregon Rivers Information System

Structure for database: LIBS.DBF
Number of data records: 12357
Date of last update : 03/18/94

Field	Field Name	Type	Width	Description
1	HATCHERY	Character	15	Hatchery name
2	SPECIES	Character	16	Species name liberated
3	WATERNAME	Character	22	Water body name where liberated
4	BASIN	Character	2	WRD water basin number of Watername
5	YEAR	Character	2	Year liberated
6	NO_STOCKED	Character	7	Number of fish liberated of this species
7	PDS_STCKED	Character	6	Pounds of fish liberated of this species
** Total **			71	

NEWALL.dbf Documentation

Main River REACH DATA file in Oregon Rivers Information System

Structure for database: NEWALL.DBF
Number of data records: 14,640
Date of last update : 03/28/91

Field	Field Name	Type	Width	Description
1	RRN	Character	16	EPA River Reach No (RRN)
2	NAME	Character	30	River name
3	WRD	Character	30	Water Resources Department stream code
4	REV_DATE	Date	8	Revision date for this record
5	DLINK	Character	16	Downlink RRN
6	UPLINK1	Character	16	Uplink1 RRN
7	UPLINK2	Character	16	Uplink2 RRN
8	TRIB_OF	Character	30	Name of the stream that the reach flows into
9	OWNAME	Character	30	Open Water Name if open water reach
10	LOBOUN	Character	30	Lower boundary river name
11	UPBOUN1	Character	30	Upper boundary1 river name
12	UPBOUN2	Character	30	Upper boundary2 river name
13	TOWNSHIP	Character	4	Plublic Land Survey (PLS) township number
14	TOWNSH_NS	Character	1	Meridian flay - N or S
15	RANGE	Character	5	PLS Range number
16	RANGE_EW	Character	1	Meridian flag - E or W
17	SECTION	Character	2	PLS Section number
18	BASIN_NUM	Numeric	3	Pacific Northwest Basin Number
19	ORBAS_NUM	Numeric	2	Oregon Basin Number 1 - 16
20	MAP_NUM	Numeric	3	100000 Quad Map number
21	LEVEL	Numeric	1	EPA Stream level
22	TYPE	Character	1	EPA Reach TYPE

- A Artificial Lake Reach (a transport reach) An artificial reach within a lake or reservoir inserted in the file to provide connenction between input and output reaches of the open water.
- B Bi-directional Reach (a transport reach) A reach for which the direction of flow is ambiguous.
- D Dam Reach (a transport reach) A reach which is a dam through which water flows. This is a transport reach; its primary and open water names are the same as for the next reach upstream on the same level.
- F Falls Reach (a transport reach) A reach which is either a waterfall, drop spillway, or a reach of rapids.
- M Artificial Open Water Reach (a transport reach) An artificial reach within any open water, other than a lake or reservoir, to provide connection between input and output reaches of the open water.
- R Regular Reach (a transport reach) A reach which has upstream and downstream reaches connected to it and which is not classified as another type of reach.
- S Start Reach (a transport reach) A headwater reach which has no reaches above it in the reach file. This type of reach has either one or two reaches connected to its downstream end.
- T Terminal Reach (a transport reach) A reach downstream of which there is no other reach (for example, a reach which terminates into an ocean, a land-locked lake, or the ground). This type of reach has either one or two reaches connected to the upstream end.
- V Open Water Terminal Reach (a transport reach) A reach which is both a terminal reach and an artificial open water reach.

X Terminal Start Reach (a transport reach) A reach which is both a terminal reach and an entry reach.
Z Terminal Entry Reach (a transport reach) A reach which is both a terminal reach and an entry reach.

C Continental Shoreline Segment (a shoreline reach) Island Shoreline Segment (a shoreline reach)
L Lake Shoreline Segment (a shoreline reach) A segment which follows the shoreline of a lake other than the Great Lakes.
W Wide-River Shoreline Segment (a shoreline reach) (wide area interior)
X Terminal start reach
R Regular A regular transport reach
T Terminal reach
N Non-connected isolated reach
L Lake shoreline reach (non-transport)
I Island shoreline reach (non-transport)

23 REACH_KEY Character 1 Reach KEY attribute

** NOTE: Reach KEY attribute added to keep track of new reaches, flag original reaches that have changed, and split reaches Values are as follows:

O Original- Unchanged EPA Reach
I Incorrect-An original EPA reach which has been incorrectly digitized
B Base The downstream end of an original reach that has been split (this reach retains all of the original attributes of the reach before it was split (ie length, latitude,longitude, pathmile, etc)
S Split The reach created by the spliting of an original reach by one or more added reaches
A Added An (N+1) reach (a new reach tha flows into an existing reach) that has been added into the main file
C Added An added reach that flows into an "A" type reach
D Dam A reach with a dam site
F Falls A reach with a water falls
Z Terminus A terminal entry reach (both terminus and entry)

24 STREAM_KEY Character 1 Stream KEY
B Start - the uppermost reach of a stream
T Terminal - the lowermost reach of a stream
X Start/End -a single reach which both begins and ends the stream
R Regular - a regular stream that is between the start and end reach of the stream

25 REACH_FLAG Logical 1 Logical Reach flag (T or F) - true for transport reaches and false for non-transport reaches (ie shorelines and coastlines)

26 OW_FLAG Logical 1 Logical open water flag- T or F

**NOTE: Value Classes below are from 1 to 4

1 excellent
2 good
3 fair
4 poor
N resource not present
U Unknown

27	FISHVAL	Character	1		Oregon Resident Fish Value Class for this RRN
28	WILDVAL	Character	1		Oregon Wildlife Value class for this RRN
29	ANAD_FLAG	Character	1		Logical flag indicating presence or absence of Anadramous fish - T or F
30	RECVAL	Character	1		Oregon Recreation Value Class for this RRN
31	NATVAL	Character	1		Oregon Natural Features Value Class for this RRN
32	SCEN_FLAG	Character	1		Scenic Features Flag - T or F
33	ZONING	Character	2		Oregon Zoning Classification abbreviation for this RRN
34	AG_ZONVAL	Character	1		Oregon value class associated with agricultural zoning in this county
35	FOR_ZONVAL	Character	1		Oregon Value Class associated with forestry zoning in this county
36	ARCHEOVAL	Character	1		Oregon Archaeological Value class for this RRN
37	HIST_FLAG	Character	1		Historical Features Flag -T or F
38	FERC_FLAG	Character	1		Ferc Site Flag - T or F
39	DAM_FLAG	Character	1		Dam Site Flag - T or F
40	FWAY_FLAG	Character	1		Fishway Flay - T or F
41	PPOLT_FLAG	Character	1		Point Source Pollution Flag - T or F
42	NPOLT_FLAG	Character	1		Non-Point Source Pollution Flag - T or F
43	RESTR_FLAG	Character	1		ODWR Restriction or With-drawal Flag - T or F
44	HATCH_FLAG	Character	1		Hatchery on this RRN Flag - T or F
45	STOCK_FLAG	Character	1		Stocked Stream Flag - T or F
46	PROT_CAT	Character	1		NWPPC Proposed Protected Class Designation

Classifications are as follows:

A = Protected for Anadramous fish only
C = Protected for Anadramous, Resident Fish, AND Wildlife
D = Protected for Anadramous Fish AND Resident Fish OR Wildlife
F = Protected for Resident Fish Only
W = Protected for Wildlife Only
U = Unprotected
Z = Unprotected (with Scenic River Designation)

**** NOTE the classification designation for protection in Oregon are really either Protected or Unprotected. Even though "A" may be indicated, the river segment was not evaluated for Resident Fish or Wildlife if it would be protected in any case for Anadramous fish

47	PROT_LEN	Numeric	4	1	Protected length in miles for this RRN

**** NOTE this value may be less than the RRN segment length indicating that only part of the river segment (with anadramous fish) is proposed for protection

48	LENGTH	Numeric	4	1	RRN length in miles
49	CUM_LEN	Numeric	4	1	Cumulative river length from mouth
50	WIDTH	Numeric	4		RRN width in feet
51	STREAM_NO	Numeric	5		NWPPC Unique Stream number

52	SEQ_NO	Numeric	8	2	NWPPC Unique Stream index
53	DOWNLAT	Numeric	7	4	Downstream latitude
54	DOWNLON	Numeric	8	4	Downstream longitude
55	OR_FLAG	Logical	1		Logical Flag - T if RRN is in Oregon

**NOTE: An Oregon RRN may be in up to 4 state/counties

56	ST1	Numeric	2	State FIPS No 1 for this RRN
57	CO1	Numeric	3	County FIPS No 1 for this RRN
58	ST2	Numeric	2	State FIPS No 2 for this RRN
59	CO2	Numeric	3	County FIPS No 2 for this RRN
60	ST3	Numeric	2	State FIPS No 3 for this RRN
51	CO3	Numeric	3	County FIPS No 3 for this RRN
52	ST4	Numeric	2	State FIPS No 4 for this RRN
63	CO4	Numeric	3	County FIPS No 4 for this RRN

** Total **		397

NPS.dbf Documentation

Oregon Assessment of Nonpoint Sources of Water Pollution
Department of Environmental Quality Database
file in the Oregon Rivers Information System

Structure for database: F:NPS.dbf
Number of data records: 3347
Date of last update : 12/12/91

Field	Field Name	Type	Width	Description
1	RRN	Character	16	EPA River Reach Number
2	PNAME	Character	30	EPA/DEQ Segment (reach) name
3	RSEROSION	Character	1	Erosion values from River Study
4	DEQ_ID	Character	4	DEQ stream seg link to data table
	********** Types of Pollution **********			
5	TURB	Character	2	Turbidity
6	LOW_DO	Character	2	Low dissolved oxygen
7	TEMP	Character	2	Elev. /Depr. water temperature
8	NUTR	Character	2	Nutrients
9	PEST	Character	2	Pesticides
10	TOXIC	Character	2	Toxics
11	SALT	Character	2	Salt water intrusion
12	B_V	Character	2	Bacteria/viruses
13	RADIO	Character	2	Radioisotopes present
14	GASES	Character	2	Dissolved gasses
15	SOLIDS	Character	2	Scum, film, other floating solids
16	SED	Character	2	Sedimentation
17	EROSION	Character	2	Streambank erosion
18	LOWFLOW	Character	2	Descreased stream flow
19	DEBRIS	Character	2	Excessive debris accumulation
20	STRUCT	Character	2	Insufficient stream structure
21	PLANTS	Character	2	Excessive plant growth
22	OTHER	Character	2	Other pollution types
	********** Impacted Beneficial Uses **********			
23	DWS	Numeric	1	Domestic water supplies
24	MWS	Numeric	1	Municiple water supplies
25	IDS	Numeric	1	Industrial water supplies
26	IRRIG	Numeric	1	Irrigation
27	STOCKWATER	Numeric	1	Livestock watering
28	MINING	Numeric	1	Mining
29	CWF	Numeric	1	Cold water fish
30	WWF	Numeric	1	Warm water fish
31	OTHER_AL	Numeric	1	Other aquatic life
32	WILDLIFE	Numeric	1	Wildlife
33	WATER_REC	Numeric	1	Water contact recreation
34	AESTH	Numeric	1	Aesthetic quality
35	POWER	Numeric	1	Hydro power
36	NAVIG	Numeric	1	Commercial Navigation

********** Probable Causes **********

37	SURF_VEG_D	Numeric	1	Surface & vegetation disturbance
38	SLIDES	Numeric	1	Landslides
39	ERODE	Numeric	1	Surface erosion (gully, etc)
40	SURF_PERM	Numeric	1	Descreased surface permeability
41	FLOW_CHANG	Numeric	1	Changes in ground/surface flow
42	ROAD_RUN	Numeric	1	Pollutants in road runoff
43	IND_COM_RU	Numeric	1	Pollutants in Ind./Comm. site runoff
44	RIPAR_DIS	Numeric	1	Riparian veg. & bank disturbance
45	THERMAL	Numeric	1	Elimination of stream thermal cover
46	TRAFFIC	Numeric	1	Human or animal traffic distrubance
47	VEG_REMOVE	Numeric	1	Vegetation removal
48	ROAD_LOC	Numeric	1	Road location
49	SH_STR_STR	Numeric	1	Shore/streambank structures
50	WATER_TABL	Numeric	1	Decline in alluvial water table
51	FLOW_ALT	Numeric	1	Flow alteration/modification
52	WITHDRAW	Numeric	1	Water withdrawel
53	BASEFLOW_D	Numeric	1	Baseflow depletion
54	RES_STOR_R	Numeric	1	Reservoir storage & releases
55	ALTER_PHYS	Numeric	1	Altered physical stream character
56	PUMPING	Numeric	1	Pumping of aquifers
57	CHAN_ALT	Numeric	1	Stream chan/water body alterations
58	BANKFILL	Numeric	1	Bank filling
59	DREDGE	Numeric	1	Dredging/aggregate removal
60	CHAN_DRAIN	Numeric	1	Channelization/wetland draining
61	INSTR_STRU	Numeric	1	Placement of instream structures
62	BADWELL	Numeric	1	Improper well construction
63	WASTE_DISP	Numeric	1	Diffuse waste disposal
64	DEBR	Numeric	1	Debris/waste pumping
65	ANIMAL	Numeric	1	Animal waste
66	HUMAN	Numeric	1	Human waste
67	IRRIG_RET	Numeric	1	Irrigation return flows
68	LEACHATE	Numeric	1	Landfill leachate
69	LEACH_MINE	Numeric	1	Leaching salts & exposed minerals
70	CHEM_USE	Numeric	1	Chemical usage
71	APPL	Numeric	1	Application of chemicals
72	LEAK_SPILL	Numeric	1	Storage/transportation; leaks/spills
73	DISPOSE	Numeric	1	Disposal
74	OTHER_PC	Numeric	1	Other pollution causes
75	UNK	Numeric	1	Cause unknown

********** Associated Land Use **********

76	AGRI	Numeric	1	Agriculture
77	NON_IRRIG	Numeric	1	Non-irrigated cropland, pastureland
78	IRRIGATE	Numeric	1	Irrigated cropland, pastureland
79	AWM	Numeric	1	Animal waste management
80	N_O_V_CT	Numeric	1	Nurseries, orchards, vinyards, etc
81	RANGE	Numeric	1	Range
82	GRAZE	Numeric	1	Livestock grazing
83	VEG_MGT	Numeric	1	Vegetation management
84	FORESTRY	Numeric	1	Forestry
85	HARVEST	Numeric	1	Forestry harvesting
86	ROAD_CONT	Numeric	1	Road construction/maint./use
87	TM	Numeric	1	Timber management

88	REC	Numeric	1	Recreation
89	BOAT_SWM	Numeric	1	Boating/swimming
90	CAMP_HIKE	Numeric	1	Camping/hiking
91	ORV	Numeric	1	Off road vehicle use
92	MINE	Numeric	1	Mining
93	MINERAL	Numeric	1	Mineral
94	QUARRY	Numeric	1	Quarries (aggregate)
95	IN_STREAM	Numeric	1	Instream mining (aggregate)
96	URBAN	Numeric	1	Urban
97	SWM	Numeric	1	Storm water managment (quantity)
98	SURF_RUNOF	Numeric	1	Surface runoff (quality)
99	SAN_SEWER	Numeric	1	Sanitary sewer leakage
100	CHEM_DISP	Numeric	1	Manuf. chemical storage/disposal
101	SEPTIC_MAI	Numeric	1	Septic tank maintenance
102	LANDFILL	Numeric	1	Landfills
103	CONSTRUCT	Numeric	1	Construction
104	RES	Numeric	1	Residential
105	COMM_IND	Numeric	1	Commercial/industrial
106	TRANS	Numeric	1	Transportation network
107	CONST	Numeric	1	Construction or location
108	TRAN_MAINT	Numeric	1	Transportation maintenance
109	TRAN_RUNOF	Numeric	1	Storm runoff
110	NATURAL	Numeric	1	Natural
111	FIRE	Numeric	1	Fire
112	STORM_FLOO	Numeric	1	Storm/flood
113	DROUGHT	Numeric	1	Drought
114	GEOL_HAZ	Numeric	1	Geologic hazards
115	OTHER_LU	Numeric	1	Other (specified in comments)
116	HYDROPOWER	Numeric	1	Hydropower
117	DAM_RES	Numeric	1	Major dams, reservoirs
118	CHAN_MAINT	Numeric	1	Channel maintenance
119	UNKNOWN	Numeric	1	Unknown
120	COMMMENTS	Character	70	Comments
** Total **			255	

ORARCH.dbf Documentation

Oregon ARCHaeological features data file for
Oregon Rivers Information System

Details: For more detailed reference of the fields in this file see the "Pacific Northwest Rivers Study: Assessment Guidelines: Oregon" dated December 1986.

Structure for database: ORARCH.DBF
Number of data records: 2819
Date of last update : 09/20/90

Field	Field Name	Type	Width	Dec	Description
1	TOWN	Character	5		Township
2	RANGE	Character	5		Range
3	REV_DATE	Date	8		Revision date for this record
4	SITES	Numeric	3		Estimated number of sites
5	RIVPAT	Logical	1		Flag indicating whether river sites were shown on survey maps
6	PERCENT	Numeric	7	5	Percent of estimated sitesthat have been surveyed
7	ARCHEOVAL	Character	1		Primary rating(1 to 6)
7	SECLASS	Character	1		Secondary rating(1 to 6)
** Total **			32		

ORANAD.dbf Documentation
Oregon ANADramous FISH DATA file in Oregon Rivers Information System

Structure for database: ORANAD.DBF
Number of data records: 6982
Date of last update : 11/29/93

Field	Field Name	Type	Width	Dec	Description
1	RRN	Character	16		EPA River Reach No (RRN)
2	REV_DATE	Date	8		Revision date for this record
3	SP_CHIN	Numeric	4	2	% Reach used by SPring CHINook
4	SP_CHIN_U	Character	1		Use value for SPring CHINook in Columbia Basin Values include: 0 = No production 1 = Sapwning and Rearing 2 = Rearing only
5	SP_CHIN_H	Character	1		Habitat value for SPring CHINook; Columbia Basin Values include: 0 = No value(spp. not present) 1 = Excellent 2 = Good 3 = Fair 4 = Poor
6	SP_CHIN_SM	Character	4		Smolt carring capacity; Columbia Basin
7	SU_CHIN	Numeric	4	2	% Reach used by SUmmer CHINook
8	SU_CHIN_U	Character	1		Use value for SUmmer CHINook; Columbia Basin
9	SU_CHIN_H	Character	1		Habitat value for Columbia Basin
10	SU_CHIN_SM	Character	4		Smolt carring capacity for Columbia Basin
11	FA_CHIN	Numeric	4	2	% Reach used by FAll CHINook
12	FA_CHIN_U	Character	1		Use value for FAll CHINook; Columbia Basin
13	FA_CHIN_H	Character	1		Habitat value for Columbia Basin
14	FA_CHIN_SM	Character	4		Smolt carring capacity for Columbia Basin
15	COHO	Numeric	4	2	% Reach used by COHO salmon
16	COHO_U	Character	1		Use value for COHO in the Columbia Basin
17	COHO_H	Character	1		Habitat value for COHO in the Columbia Basin
18	COHO_SM	Character	4		Smolt carring capacity for COHO, Columbia Basin
19	SU_STHD	Numeric	4	2	% Reach used by SUmmer STeelHeaD
20	SU_STHD_U	Character	1		Use value
21	SU_STHD_H	Character	1		Habitat value
22	SU_STHD_SM	Character	4		Smolt carring capacity
23	WI_STHD	Numeric	4	2	% Reach used by WInter STeelHeaD
24	WI_STHD_U	Character	1		Use value
25	WI_STHD_H	Character	1		Habitat value
26	WI_STHD_SM	Character	4		Smolt carring capacity
27	CHUM	Numeric	4	2	% Reach used by CHUM salmon
28	SOCKEYE	Numeric	4	2	% Reach used by SOCKEYE salmon
29	ANAD_MILE	Numeric	5	1	Anadramous miles for entire river
30	NUMSPP	Numeric	1		Number of anadramous species
** Total **			99		

ORBASIN.dbf Documentation

Oregon BASIN name and number DATA file in
Oregon Rivers Information System

Structure for database: ORBASIN.DBF
Number of data records: 18
Date of last update : 06/16/87

Field	Field Name	Type	Width	Description
1	NAME	Character	20	Oregon basin NAME
2	NUMBER	Numeric	2	Oregon basin number used in the main EPA file
** Total **		23		

ORCORP1.dbf Documentation

PACIFIC NORTHWEST HYDROPOWER DATABASE

LOCATION AND IDENTIFICATION, AND PROJECT STATUS DATA

Details: A detailed description of the majority of the fields in the ORCORP databases are contained in the Pacific Northwest Hydropower Database and Analysis System; Data Item Descriptions Manual; US Army Corps of Engineers, North Pacific Division; June 1986. The "Item #" below corresponds to the item number in the manual.

Structure for database: E:ORCORP1.dbf
Number of data records: 1324
Date of last update : 10/23/91

Field Name	Type	Width	Item # and Description
PROJ_ID	Character	10	#101-Project Identification No.
PROJ_NAME	Character	28	#102-Project Name
FERC_NO	Character	8	#109-FERC Project Number
DAM_DIV1	Numeric	8	#141-Dam/Diversion Stream Mile
PWHRS_MI	Numeric	8	#145-Powerhouse Stream Mile
LOC_COMM	Character	48	#158-Comment on General Location
PP_STAT	Character	3	#202-FERC Permit Status
PP_EXP_DAT	Character	8	#204-FERC Permit Expiration Date (y/m/d)
LC_STAT	Character	3	#206-FERC License Status
LC_EXP_DAT	Character	8	#208-FERC License Expiration Date(y/m/d)
EX_STAT	Character	3	#210-FERC Exemption Status
EX_ISSUE_D	Character	8	#211-FERC Exemption Effective Date-y/m/d
APP_DEVNAM	Character	28	#212-FERC Applicant/Developer
APP_CONTAC	Character	28	#213-FERC Applicant/Developer Contact
FERCSTAT	Character	6	#217-Current Project Status
EFF_STAT_D	Character	8	#218-Date of Current Status (y/m/d)
LANDOWNER	Character	28	#219-Landowner
DAM_STATUS	Character	2	#221-Status of Dam
PURPOSE	Character	12	#222-Purposes
REACH_NO1	Character	16	RRN for Powerhouse location
** Total **			
20 Fields		272 Width	

ORCORP2.dbf Documentation

PACIFIC NORTHWEST HYDROPOWER DATABASE

PHYSICAL AND HYDROLOGIC CHARACTERISTICS

Structure for database: ORCORP2.dbf
Number of data records: 1324
Date of last update : 10/23/91

Field Name	Type	Width	Item # and Description
PROJ_ID	Character	10	#101-Project Identification Number
DAM_COMM	Character	48	#232-Comment on Existing Dam/Power Facilities
SITE_ARRAN	Character	1	#301-Site Arrangement Classification
PH_TURB_EL	Numeric	6	#332-Powerhouse Turbine Elevation
MAX_STORAG	Numeric	8	#334-Maximum Storage (ac ft)
IMPOUND_LN	Numeric	8	#335-Length of Impoundment (mi)
MAX_POL_AR	Numeric	8	#342-Surface Area at Top of Maximum Pool (ac)
DRAIN1	Numeric	10	#401-Drainage Area of Principal Stream-1, sq mi
AV_SIT_FLO	Numeric	8	#424-Average Annual Site Flow (cfs)
COMP_FLO1	Numeric	9	#428-Computed Average Monthly Flows (cfs)
DAM_HEGHT1	Numeric	5	#306-Height of Dam/Diversion (ft)
REACH_NO1	Character	16	RRN for Powerhouse location
Total			
12 Fields		138 Width	

ORCORP3.dbf Documentation

PACIFIC NORTHWEST HYDROPOWER DATABASE

OTHER COST, POWER, AND FISH DATA

Structure for database: ORCORP3.dbf
Number of data records: 1324
Date of last update : 10/23/91

Field Name	Type	Width	Item # and Description
PROJ_ID	Character	10	#101-Project Identification Number
FISH_BARRI	Numeric	8	#502-Location of Anadromous Fish Barrier (mi)
FISH_TYPE	Character	2	#503-Type of Fish Present
MITIG_REQ	Character	1	#505-Other Mitigation Required
RANK	Character	8	#508-Regional Site Ranking
RANK_COMM	Character	48	#509-Comment: Basis of Ranking
FISH_PRES	Character	16	#510-Type of Fish Species Present
INBENRECRE	Numeric	10	#729-Project Benefits: Fish & Wildlife
INCAPEXIST	Numeric	10	#808-Installed Capacity: Existing (kW), Input
INCAPNEW	Numeric	10	#809-Installed Capac.: New Potential (kW),Input
INCAPTOT	Numeric	10	#810-Installed Capac.: Total Capacity (kW)Input
UNITS_TOT	Numeric	10	#846-Number of Units-Total
REACH_NO1	Character	16	#159-EPA Stream Reach Code (RRN-Powerhouse)
** Total **13 Fields		160 Width	

ORCOUNTY.dbf Documentation

Oregon COUNTY name and FIPS number DATA file in
Oregon Rivers Information System

Structure for database: ORCOUNTY.DBF
Number of data records: 36
Date of last update : 06/06/88

Field	Field Name	Type	Width	Description
1	NAME	Character	10	County NAME
2	FIPS_STR	Character	5	National state/county FIPS no
3	FIPS_NO	Numeric	2	Oregon county number only
** Total **			18	

ORFISH.dbf Documentation

Oregon resident FISH data file in
Oregon Rivers Information System

Details: For more detailed reference of the fields in this file see the "Pacific Northwest Rivers Study: Assessment Guidelines: Oregon" dated December 1986.

Structure for database: ORFISH.DBF
Number of data records: 14641
Date of last update : 06/19/90

Field	Field Name	Type	Width	Description
1	RRN	Character	16	EPA River Reach No (RRN)
2	REV_DATE	Date	8	Revision date for this record

The following seven fields deal with Habitat Productivity

3 ZONE Character 1 Stream Geo-hydraulic ZONE coded as follows:
A - Steep gradient,boulders,straight channel
B - Moderate gradient, gravel/cobble, braided channel
C - Slight gradient, fine sediments, meandering channel

4 LAND_USE Character 1 Local LAND USE coded as:
A - Agriculture
F - Forestry
G - Grazing
M - Mining
Z - Rural Residential
U - Urban
I - Industrial
R - Recreation

5 DIVERSITY Character 1 Stream DIVERSITY (structure, cover, pool/riffle) coded as:
A - High
B - Moderate
C - Low

6 FLOW Character 1 FLOW regulation coded as:
A - Unregulated
B - Regulated
C - Highly Regulated

7 TEMP Character 1 Water TEMPerature coded as:
A - Hardly ever above 70° F
B - Occasionally above 70° F
C - Often above 70° F

8 RIP Character 1 RIParian cover coded as:
A - Above 75%
B - 25 to 75 %
C - Below 25 %

9	ERO	Character	1	Streambank EROsion coded as: A - Below 25% B - 25 to 75% C - Above 75%

The following fields deal with environmental values classifications

10	SPECIES	Character	3	Major SPECIES

This field refers to primary species occupying this river reach. The field is coded with a three character abbreviation for the SPECIES name -- see FISHSPEC.dbf for the meaning of these abbreviations

11	SPE_CONC	Character	1	The SPEcies CONCern level (Importance) as follows: H - Species of High Concern M - Species of Medium Concern L - Species of Low concern

H would be applied to the following:
(a) game fish of regional importance - see Appendix of GUIDELINES
(b) threatened, endangered, or of limited distribution
M would be applied to the following:
(c) all other game fish in Appendix A of GUIDELINES
(d) Non-game fish of ecological significance
L would be applied to all other non-game species

12	HABITAT	Character	1	HABITAT productivity coded as: H - High M - Medium L - Low

The following six fields are Species/Habitat exceptions

13	MIGR	Logical	1	Is this a MIGRatory corridor?
14	RARE	Logical	1	Are there RARE species?
15	RESEARCH	Logical	1	Are there RESEARCH sites?
16	POTENTIAL	Logical	1	Is there POTENTIAL value?
17	STOCKED	Logical	1	STOCKing of stream required?
18	SPEC_DIVER	Logical	1	Is there SPECies DIVERsity?
19	SPP_VALUE	Character	1	The overall Species/Habitat (environmental) value as 1 = Outstanding resources 2 = Substantual resources 3 = Moderate resources 4 = Limited resources U = Unknown resources N = Resources not present

The following fields deal with recreational value classifications

20	USE	Character	1	Angler Use (H, M, or L)
21	ABUNDANCE	Character	1	Fish abundance (H, M, or L)
22	EXC	Character	1	Use/abundance EXCeptions

There are four exceptions to recreational value code as follows:
1 - Quality of fishing experience (outstanding scenery, large fish)
2 - Economic importance (sport fishery important to local economy)
3 - Fishing opportunity (unique species in area)
4 - Potential value (value to anglers likely to change)

23	USE_VALUE	Character	1	Overall recreational USE VALUE coded same as SPP_VALUE (1,2,3,4,U,N)
24	FISHVAL	Character	1	Overall summary FISH VALue class coded same as SPP_VALUE (1,2,3,4,U,N)
25	DOC	Character	1	Documentation source coded as: P - Published D - Existing Data E - Estimated U - Unknown
26	COMMENTS	Character	30	A comment field
** Total **			80	

ORFISHD.dbf Documentation

Fish Distribution Database File for the
Oregon Rivers Information System

Structure for database: ORFISHD.dbf
Number of data records: 3379
Date of last update : 03/08/91

Field	Field Name	Type	Width	Description
1	RRN	Character	16	River reach number
2	NAME	Character	30	Stream name
3	WRD_NO	Character	30	Water Resources Department stream code
3	SCODE	Character	3	ODFW species code
4	SNAME	Character	25	ODFW common species name
** Total **			105	

ORFWAY.dbf Documentation

Fishways Database File for the
Oregon Rivers Information System

Structure for database: ORFWAY.dbf
Number of data records: 283
Date of last update : 01/24/91

Field	Field Name	Type	Width	Dec	Description
1	RRN	Character	16		River reach number
2	LENGTH	Numeric	4	1	Location in miles from river reach beginning
3	PERCENT	Numeric	3		Location in percent of river reach from beginning
4	REGION	Character	2		ODFW Region number
5	MAP	Character	5		Inspectors map reference
6	SYSTEM	Character	20		Stream to which "Streambran" flows into
7	STREAMBRAN	Character	30		Stream to which "Branch" flows into
8	BRANCH	Character	25		Stream of fishway location
9	NAME	Character	35		Fishway name
10	TOWNSHIP	Character	3		Township
11	RRANGE	Character	3		Range
12	SECTION	Character	3		Section
13	COUNTY	Character	10		County of fishway location
14	YEARCOMP	Character	15		Year of construction completion
15	RISE	Character	5		Rise or height of fishway
16	TYPE	Character	24		Type of fishway
17	COMMENTS	Character	130		Inspectors comments
18	OWNER	Character	30		Owner of fishway
** Total **			364		

ORHATCH.dbf Documentation

Oregon hatcher database for the
Oregon Rivers Information System

Structure for database: ORHATCH.DBF
Number of data records: 50
Date of last update : 03/30/94

Field	Field Name	Type	Width	Description
1	RRN	Character	16	River Reach Number for hatchery location
2	HATCH_NAME	Character	25	Name of the hatchery or rearing facility
3	STR_NAME	Character	30	Stream name of the hatchery location
4	TYPE	Character	7	Type of hatchery State Federal Other
5	FISH	Character	30	Species code of fish produced/reared at the facility
6	ADDRESS	Character	25	Street or Box address of the hatchery
7	NEAR_CITY	Character	20	Nearest city, for address
8	ZIP	Character	10	Zipcode for the hatchery address
9	MANAGER	Character	20	Manager of the hatchery (very changable)
10	TELEPHONE	Character	12	Telephone number for the hatchery
11	COUNTY	Character	14	County of location
12	OFFICE	Character	2	
13	WATER_SUPP	Character	30	Water name for the hatchery water supply
14	SUBBASIN	Character	20	Name of the river or basin of location
15	QUAD_MAP	Character	20	Quad-map (7.5 min) for the location
16	LAT	Character	10	Hatchery latitude
17	LONG	Character	11	Hatchery longitude
** Total **			303	

ORMAP.dbf Documentation

Oregon MAP name and number data file in
Oregon Rivers Information System

Structure for database: ORMAP.DBF
Number of data records: 70
Date of last update : 01/15/88

Field	Field Name	Type	Width	Dec	Description
1	MAPNAME	Character	30		USGS Quad MAP NAME
2	MAP_NUM	Numeric	3		MAP NUMber in main EPA file
3	REV_DATE	Date	8		Revision date for this record the following felds are the coordinates of the map sides
4	NLAT	Numeric	7	4	North LATitude
5	SLAT	Numeric	7	4	South LATitude
6	WLON	Numeric	8	4	West LONGitude
7	ELON	Numeric	8	4	East LONGitude
** Total **			72		

ORNATR.dbf Documentation

Oregon NATural features data file in
Oregon Rivers Information System

Details: For more detailed reference of the fields in this file see the "Pacific Northwest Rivers Study: Assessment Guidelines: Oregon" dated December 1986.
Structure for database: ORNATR.DBF
Number of data records: 1463
Date of last update : 06/21/87

Field	Field Name	Type	Width	Description
1	RRN	Character	16	EPA River Reach No (RRN)
	The following fields have been retained from the original files provided from LCDC (Lloyd Chapman) for backtracking			
2	EPANRECNO	Numeric	3	This field was a pointer to an EPA record in the main file. It has been temporarily left in this file as a backtracking tool until this file can be recreated and checked. Note that these original EPA numbers may have been changed by Duane Anderson of the NWPPC over time.
3	ID	Character	15	Map name and number
4	NAME	Character	20	Stream name (may no match EPAfile stream name)
5	TRIB_OF	Character	20	Tributary of named stream (may not match main EPA file)
6	UPRRN	Character	16	Upper RRN of this natural feature
7	DNRRN	Character	16	The lower RRN of this natural feature (may be same as above or blank)
8	SECSTRA	Character	20	Name of secondary stream A for this natural feature
9	UPRRNA	Character	16	Possible upper RRN of this secondary stream A
10	DNRRNA	Character	16	Possible lower RRN of this secondary stream B
11	SECSTRB	Character	20	Name of secondary stream B for this natural feature
12	RRNB	Character	16	Possible RRN of this secondary stream B
13	ADDED	Logical	1	Did the map identify more streams in this feature?
14	PTLSPP1	Character	8	Plant Species # 1 abbreviated
15	PTLSPP2	Character	8	Plant Species # 2 abbreviated
16	PTLSPP3	Character	8	Plant Species # 3 abbreviated
17	PTLSPP4	Character	8	Plant Species # 4 abbreviated
18	OTHSPP	Logical	1	are there other plant species?
19	PLCOMM1	Character	20	Plant community #1
20	PLCOMM2	Character	20	Plant community #2
21	GEOFEAT	Character	5	Geological feature
22	AQUAFEAT	Character	5	Aquatic feature
23	PALEOFEAT	Logical	1	Paleontological feature
24	FEATCOM	Character	50	Feature comment
25	LOCCOM	Character	120	Comment description
26	VALUE	Character	1	Natural Feature Value Class codes as: 1 = Outstanding resources 2 = Substantual resources 3 = Moderate resources 4 = Limited resources U = Unknown resources N = Resources not present
27	NRECNO	Numeric	3	Natural feature record no.
** Total **			454	

ORPROT.dbf Documentation

Protected Areas Database File for the
Oregon Rivers Information System

Structure for database: ORPROT.dbf
Number of data records: 16707
Date of last update : 04/19/91

Field	Field Name	Type	Width	Description	Reaches	Miles
1	RRN	Character	16	EPA river reach number		
2	PROT	Character	1	NPPC protected category		
	A = Anadromous Fish				5359	11,589
	F = Resident Fish				679	2,685
	W = Wildlife				147	536
	B = Resident Fish and Wildlife				8	55
	C = Anadromous Fish and Resident Fish and Wildlife				0	0
	D = Anadromous Fish and Resident Fish or Wildlife				1548	2,955
	Z = Institutionally Protected				107	0
3	BEG_LEN	Numeric	4	Beginning reach location		
4	END_LEN	Numeric	4	Ending reach location		
5	PROT_LEN	Numeric	4	Total protected length		
** Total **			30			

ORRECR.dbf Documentation

Oregon RECReational features data file in
Oregon Rivers Information System

Details: For more detailed reference of the fields in this file see the "Pacific Northwest Rivers Study: Assessment Guidelines: Oregon" dated December 1986.

Structure for database: ORRECR.DBF
Number of data records: 2373
Date of last update : 07/30/90

Field	Field Name	Type	Width	Description
1	RRN	Character	16	EPA River Reach No (RRN)

The following fields have been retained from the original files provided from LCDC (Lloyd Chapman) for backtracking

2	REV_DATE	Date	8	Revision date for this record
3	EPARID	Numeric	4	EPA rec ID number

This field was a pointer to an EPA record in the main file. It has been temporarily left in this file as a backtracking tool until this file can be recreated and checked. Note that these original EPA numbers may have been changed by Duane Anderson of the NWPPC over time.

4	RIVER	Character	20	Stream name (may not match EPA file stream name)
5	ID	Numeric	4	Pointer to EPA ID number (???)
6	BEGINSEG	Character	16	Beginning RRN of feature
7	ENDSEG	Character	16	Ending RRN of feature

These following fields rate various types of recreation coded as:

1 = Outstanding
2 = Substantial
3 = Moderate
4 = Limited
U = Unknown
N = Little or none

8	POWER	Character	1	POWER boating
9	CANOE	Character	1	CANOEing
10	DRIFT	Character	1	DRIFT boating
11	RAFT	Character	1	RAFTing
12	SAIL	Character	1	SAILing
13	SLST	Character	1	Salmon/Steelhead fishing
14	TROUT	Character	1	TROUT fishing
15	WRMWTR	Character	1	Warm water fishing (bass,etc)
16	RECR	Character	1	Other recreation value (hiking, picnicking, swimming, biking, hunting, horseback riding, camping, nature study)
17	RATING	Character	1	Overall recreation value
** Total **			95	

ORSCEN.dbf Documentation

Oregon SCENic river data file in
Oregon Rivers Information System

Structure for database: ORSCEN.DBF
Number of data records: 724
Date of last update : 09/22/92

Field	Field Name	Type	Width	Description
1	RRN	Character	16	EPA River Reach Number
2	NAME	Character	30	Stream Name
3	FR_LOWBOUN	Character	30	Lower boundary description of federal recreational designation
4	FR_UPBOUN	Character	30	Upper boundary description of federal reacreational designation.
5	FS_LOWBOUN	Character	30	Lower boundary description of federal scenic designation.
6	FS_UPBOUN	Character	30	Upper boundary description of federal scenic designation.
7	FW_LOWBOUN	Character	30	Lower boundary description of federal wild design.
8	FW_UPBOUN	Character	30	Upper boundary description of federal wild design.
9	S_LOWBOUN	Character	30	Lower boundary description of state scenic design.
10	S_UPBOUN	Character	30	Upper boundary description of state scenic design.
11	FDWATER	Character	3	Federal designation: R = Recreation S = Scenic W = Wild St= Study
12	FR_MILES	Character	5	Federal reacreational miles
13	FS_MILES	Character	5	Federal scenic miles
14	FW_MILES	Character	5	Federal wild miles
15	STWATER	Character	3	State designation; S = Scenic
16	S_MILES	Character	5	State scenic miles (estimated)
** Total **			313	

RETURNS.dbf Documentation

Hatchery returns database for the Oregon Rivers Information System

Structure for database: RETURNS.DBF
Number of data records: 858
Date of last update : 03/09/94

Field	Field Name	Type	Width	Description
1	HATCHERY	Character	15	Hatchery name
2	SPECIES	Character	20	Name of returning Species
3	YEAR	Character	2	Year of return
4	ADULTS	Character	6	Number of adult returns of species
5	JACKS	Character	5	Number of jack returns of species
6	TOTALFISH	Character	6	Total returns (adults & jacks)
7	EGGTAKE	Character	9	Number of eggs taken from species
** Total **			64	

TIMING.dbf Documentation

Preferred Instream Work Period data in the
Oregon Rivers Information System

Structure for database: TIMING.DBF
Number of data records: 58
Date of last update : 02/10/92

Field	Field Name	Type	Width	Description
1	CODE	Character	2	Locating code for program
2	TIMING	Character	25	The date ranges for preferred work
** Total **			28	

WRDCO.dbf Documentation

Cross-reference file for Species Report generater of the
Oregon Rivers Information System

Structure for database: WRDCO.DBF
Number of data records: 7191
Date of last update : 01/21/92

Field	Field Name	Type	Width	Description
1	WRD	Character	30	Water Resouces Department stream number
2	NAME	Character	30	Stream name
3	TRIB_OF	Character	30	Stream name that "NAME" flows into
4	FISHVAL	Character	1	Resident Fish value class for the first reach of the selected stream
5	CO1	Numeric	3	County FIPS no1 for stream
6	CO2	Numeric	3	County FIPS no2 for stream
7	CO3	Numeric	3	County FIPS no3 for stream
8	CO4	Numeric	3	County FIPS no4 for stream
** Total **			104	

ORWILD.dbf Documentation

Oregon WILDlife data file in Oregon Rivers Information System

Details: For more detailed reference of the fields in this file see the "Pacific Northwest Rivers Study: Assessment Guidelines: Oregon" dated December 1986 referred to as GUIDELINES in text below.

Structure for database: ORWILD.DBF
Number of data records: 14,641
Date of last update : 06/08/88

Field	Field Name	Type	Width	Description
1	RRN	Character	16	EPA River Reach No (RRN)
2	REV_DATE	Date	8	Revision date for this record
	The following five fields deal with Habitat Productivity and are not currently displayed by the MENU system			
3	LAND_USE	Character	1	Local LAND USE coded as: A - Agriculture F - Forestry G - Grazing M - Mining Z - Rural Residential U - Urban I - Industrial R - Recreation
4	DIVERSITY	Character	1	Stream DIVERSITY (habitat and wildlife) coded as: A - High B - Moderate C - Low
5	COMM	Character	1	COMMunities of Special Concern coded as follows:: A - River islands B - Well developed riparian vegetation C - Old-growth cottonwood bottoms D - Old-growth coniferous bottoms E - Ox-bow sloughs F - Other
6	SHAB	Character	1	Important Seasonal HABitats coded as follows: A - Occupied by T & E or limited distribution B - Big game winter range C - Nesting habitats D - Occupied by species of special concern E - Other
7	DIS	Character	1	DISturbances (major or minor)

The following fields deal with environmental values classifications

8 SPECIES Character 3 Major SPECIES
This field refers to primary species occupying this river reach. The field is coded with a three character abbreviation for the SPECIES name -- see WILDSPEC.dbf for the meaning of these abbreviations

9 SPE_CONC Character 1 The SPEcies CONCern level (Importance) coded as:
H - Species of High Concern
M - Species of Medium Concern
L - Species of Low concern

H would be applied to the following:
(e) game and furbearing animals of regional importance - see Appendix of GUIDELINES
(f) threatened, endangered, or of limited distribution

M would be applied to the following:
(g) all other game and furbearing animals in Appendix A of GUIDELINES
(h) Non-game species of local concern

L would be applied to all other non-game species

10 HABITAT Character 1 HABITAT productivity coded as:
H - High
M - Moderate
L - Low

The following six fields are Species/Habitat exceptions

11 MIGR Logical 1 Is this a MIGRatory corridor?
12 RARE Logical 1 Are there RARE species?
13 RESEARCH Logical 1 Are there RESEARCH sites?
14 POTENTIAL Logical 1 Is there POTENTIAL value?
15 SPEC_DIVER Logical 1 Is there SPECies DIVERsity?

16 SPP_VALUE Character 1 The overall Species/Habitat (environmental) value as:
1 = Outstanding resources
2 = Substantual resources
3 = Moderate resources
4 = Limited resources
U = Unknown resources
N = Resources not present

The following fields deal with recreational value classifications

17 USE Character 1 Harvest Use (H, M, or L)
18 ABUNDANCE Character 1 Wildlife abundance (H, M, or L)
19 EXC Character 1 Use/abundance EXCeptions

There are four exceptions to recreational value code as follows:
1 - Quality of wildlife experience (outstanding scenery, large or trophy animals)
2 - Economic importance (special hunts or animals important to local economy)
3 - Fishing success (unique species in area)
4 - Potential value (value to hunters likely to change)

20	USE_VALUE	Character	1	Overall recreational USE VALUE coded same as SPP_VALUE
21	WILDVAL	Character	1	Overall summary WILDlife VALue class coded same as SPP_VALUE (1,2,3,4,U,N)
22	DOC	Character	1	Documentation source coded as: P - Published D - Existing Data E - Estimated U - Unknown
23	COMMENTS	Character	30	A comment field
** Total **			77	

WILDSPEC.dbf Documentation

Orgon WILDlife SPECies name and abbreviation file in
Oregon Rivers Information System

Structure for database: WILDSPEC.DBF
Number of data records: 49
Date of last update : 07/09/90

Field	Field Name	Type	Width	Description
1	SPECIES	Character	3	Wildlife SPECIES abbreviation
2	NAME	Character	30	Wildlife Species name
3	REV_DATE	Date	8	Revision date for this record
** Total **			42	

APPENDIX C: EPA REACH FILE DESCRIPTION

The Reach File, EPA's national database of surface water features, meets five objectives in water support programs:

1. It provides data on the Nation's surface waters, including names, and other identifiers and locators of stream and other hydrologic features.

2. It provides a unified surface water identification system which is essential for integrating water databases for common analyses within a hydrologic framework, and it does so in a manner which is consistent with the existing standard USGS/FIPS basin codes.

3. It provides hydrologic structure to the computer representation of surface waters in a manner needed for water body modeling and database traversal of streams and water bodies in hydrological order.

4. It provides data for graphical display of streams, lakes, reservoirs, estuaries, and other surface water features anywhere in the nation.

5. It provides information on the characteristics of streams, water bodies, and watersheds to aid in water quality analysis and reporting.

Various other water resource databases have been linked with the Reach File in the EPA Office of Water to provide for combined analyses of water supplies, hydrology, water quality standards, and pollutant sources.

The EPA Reach File contains many more attributes than are apparent to the user. Several tables are provided below to describe the keys used for two attributes: reach type and reach key.

<u>REACH TYPE:</u>

S - Start Reach (a transport reach).
A headwater reach which has no reaches above it in the reach file. This type of reach has either one or two reaches connected to its downstream end.

R - Regular reach (a transport reach).
A reach which has upstream and downstream reaches connected to it.

A - Artificial Lake Reach (a transport reach).
An artificial reach within a lake or reservoir inserted in the file to provide connection between input and output reaches of the open water.

M - Artificial Open Water Reach (a transport reach).
An artificial reach within any open water, other than a lake or reservoir, to provide connection between input and output reaches of the open water.

X - Terminal Start Reach (a transport reach).
A reach which is both a terminal and start reach.

T - Terminal Reach (a transport reach).
A reach downstream of which there is no other reach (for example, a reach which terminates into an ocean, a land-locked lake, or the ground). This type of reach has either one or two reaches connected to its upstream end.

N - Non-Connected Isolated Reach (a transport reach).
A reach not having codes to link it to other reaches.

L - Lake Shoreline Segment (a shoreline reach).
A segment which follows the shoreline of a lake; lake boundary.

I - Island Shoreline Segment (a shoreline reach).

C - Continental Shoreline Segment (a shoreline reach).

STREAM-KEY:

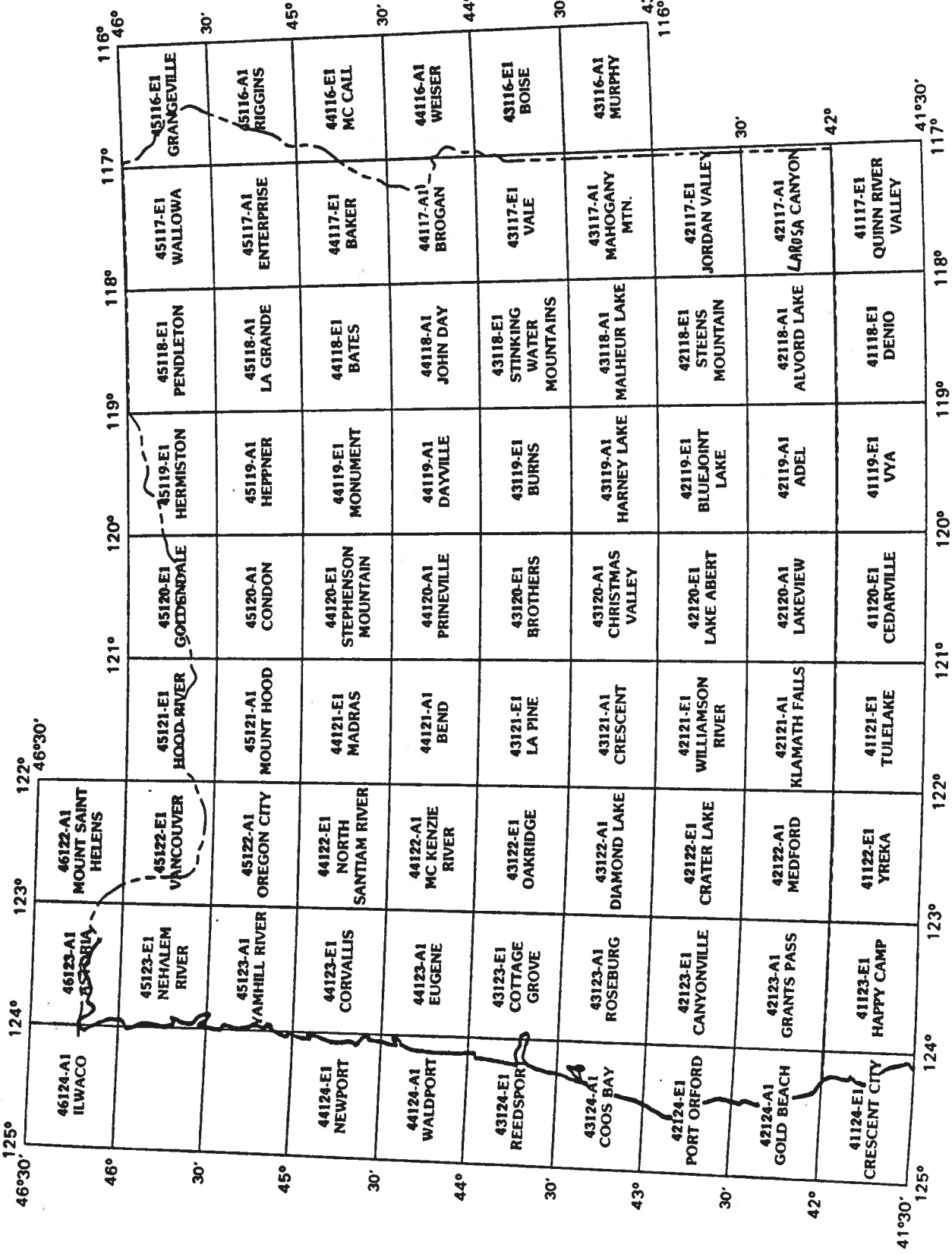
X - Start/End Reach; a single reach of a stream which both begins and ends the stream.

T - Terminal Reach; the lowermost reach of a stream.
Similar to TYPE="T" for terminal reaches but includes stream reaches which end a stream by flowing into another stream.

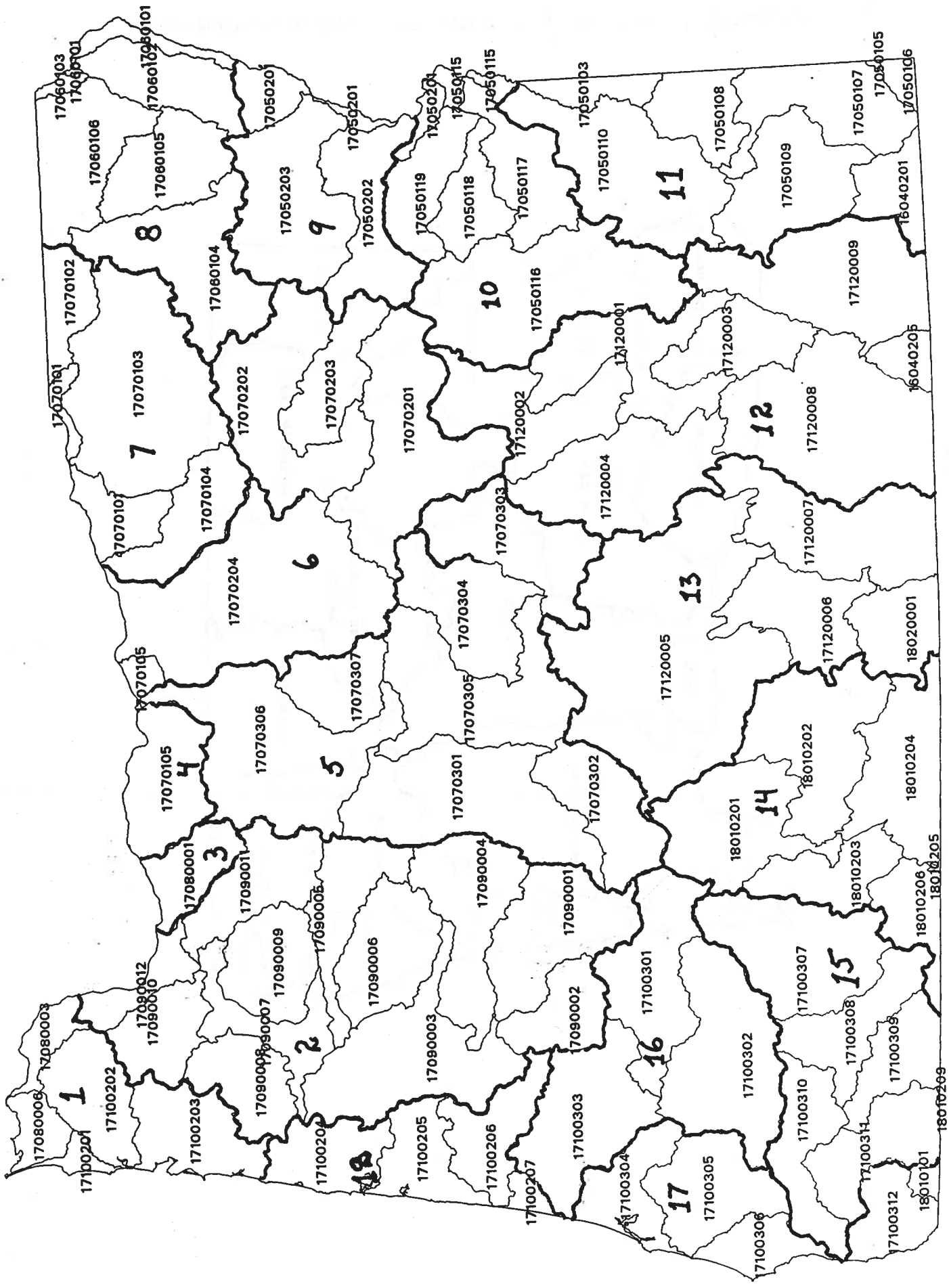
R - Regular reach; a reach of a stream that is between the start and end reach of the stream.

H - Headwater reach; the uppermost reach of a stream, same as the TYPE="S" reach.

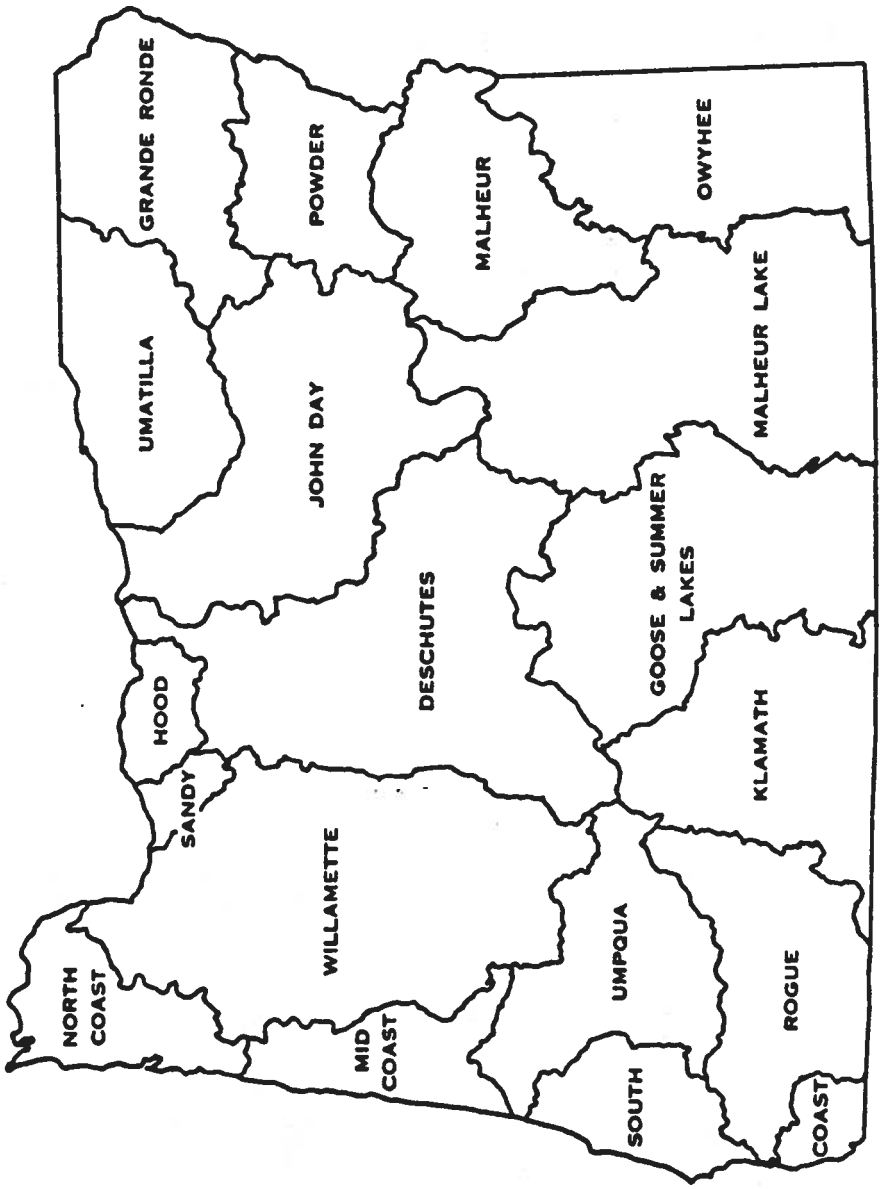
APPENDIX D: 1:100,000 SCALE USGS MAP LOCATIONS



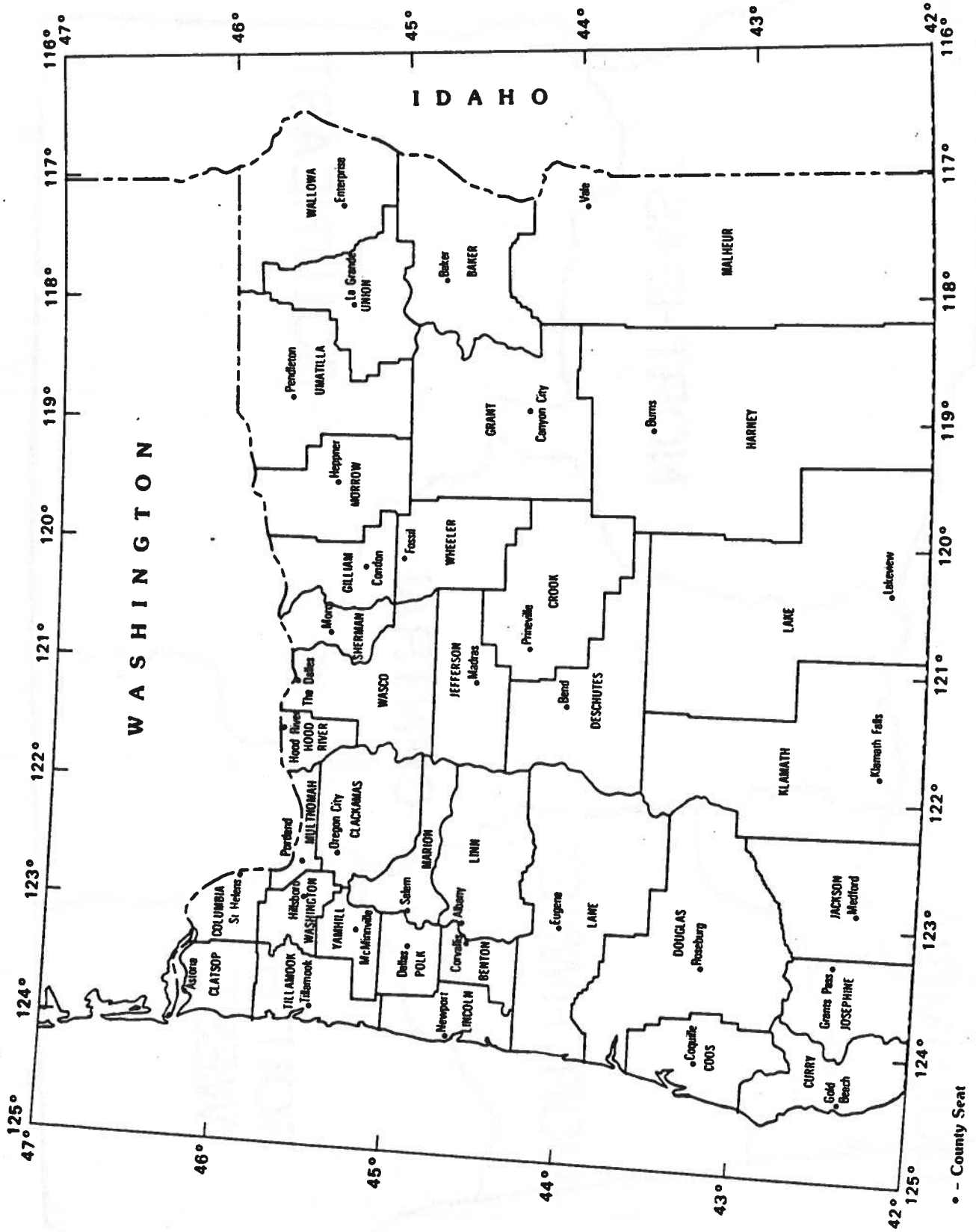
APPENDIX E: USGS HYDROLOGIC UNIT and WRD BASIN NUMBERS FOR OREGON



APPENDIX F: WATER RESOURCES DEPARTMENT BASIN MAPS



APPENDIX G: MAP OF OREGON COUNTIES



APPENDIX H: OREGON DEPARTMENT OF FISH & WILDLIFE REGIONS