

USERS MANUAL FOR THE PROTECTED AREAS

DATA ACCESS SYSTEM

Northwest Power Planning Council, Fish & Wildlife Database Division

September 20, 1989

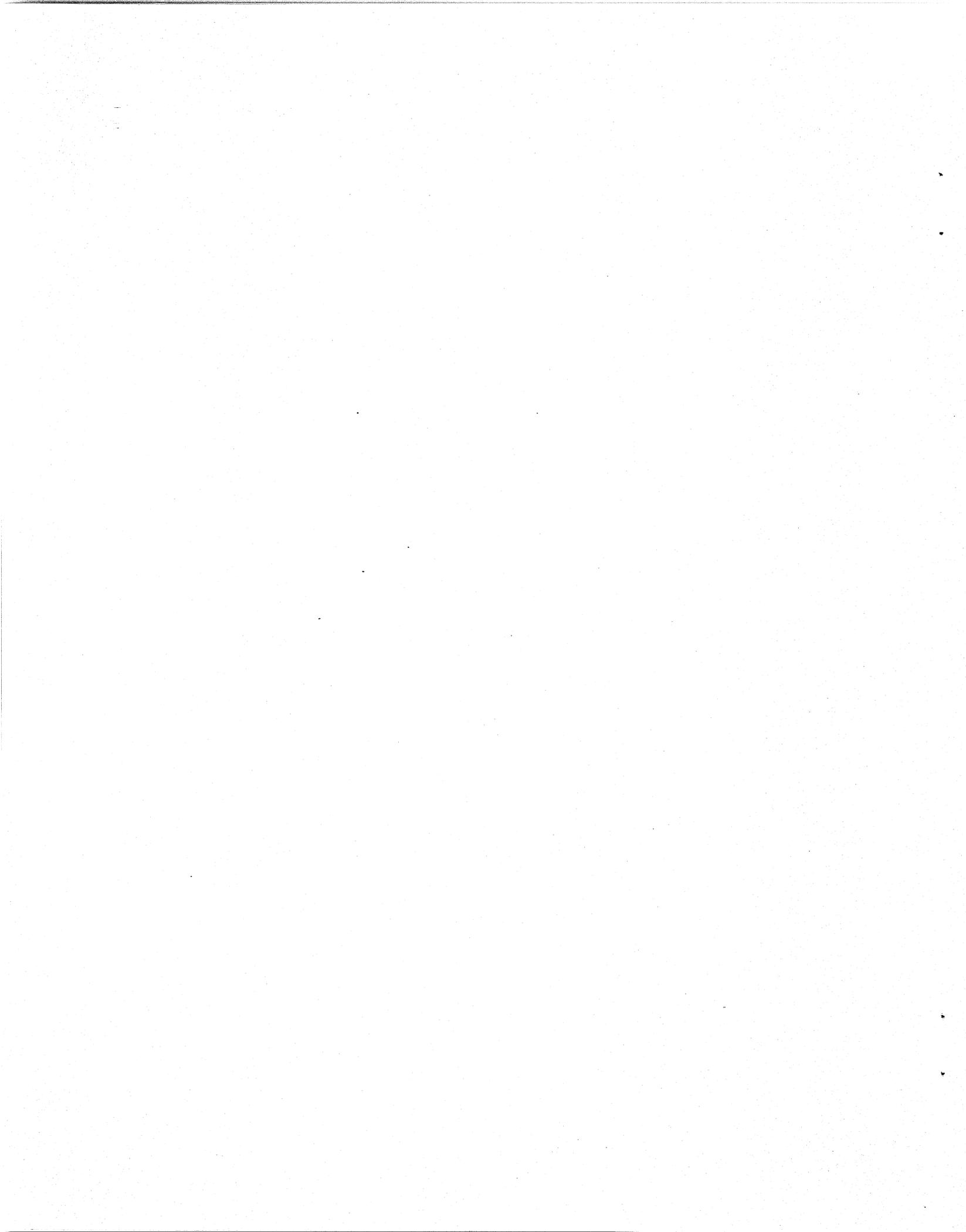
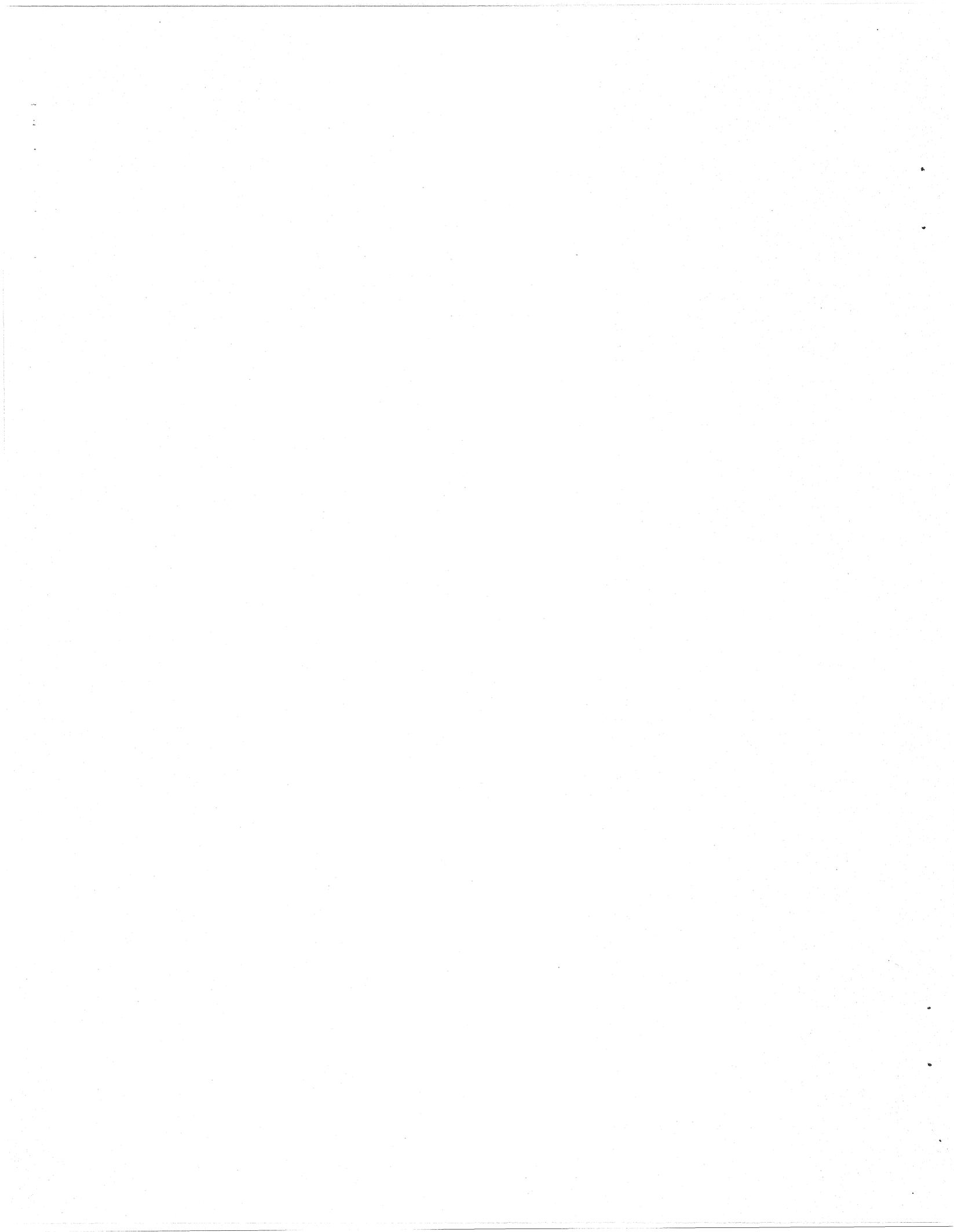


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INTRODUCTION

In accordance with the Northwest Power Act, the Northwest Power Planning Council sought recommendations for the development of the Columbia Basin Fish and Wildlife Program in the fall of 1981, published and took comment on these recommendations and in November of 1982, published the first Fish and Wildlife Program. A substantial number of these recommendations requested that the Council preserve from hydroelectric development certain unaltered streams with priority wildlife habitat areas. The Council, in the 1982 Program, agreed with this concept and began a process of studying, with the review and participation of fish and wildlife agencies, Indian tribes, a means of protecting a system of critical fish and wildlife habitat areas in the Columbia River Basin. In Action Items 14.2 and 14.3 of the 1983 Power Plan, the Council began the process of designing a study to identify and rank potential hydropower sites in the region (inside as well as outside the Columbia Basin) and restated its commitment to continue its efforts to refine the database on existing and potential hydropower sites that are environmentally sound and cost-effective.

In 1983 the Council created the Hydropower Assessment Steering Committee (HASC). The purposes of HASC were (1) to help collect the information necessary to designate areas to be protected from hydroelectric development in the Columbia Basin; (2) to provide the Council with information to be used in the hydropower site ranking; and (3) to provide information on environmentally-sound hydroelectric sites which the Council needed to improve the hydropower supply curve.

In order to meet these objectives, the Council initiated a project to assess the significance of river segments (or reaches) for a variety of environmental values. The expressed purpose of the project is to identify environmental and institutional considerations which might have a bearing on hydropower development in the Northwest. Information produced through this project will provide input into a variety of regional and state power planning and resource management activities. The resource assessment produced both tabular information regarding each reach in the state and a series of maps identifying the location for reaches. Each reach was assigned a series of resource value classes depending on its relative significance within a given resource category. The resource categories selected are:

- Anadromous Fish
- Resident Fish
- Wildlife
- Natural Features
- Cultural Features
- Recreational Value

The anadromous fish study was conducted at the regional level and characterized stream reaches on the basis of their productivity (emphasizing potential productivity over actual productivity), their importance as migratory routes, their habitat value, and their significance to tribal entities. The data for this characterization was provided by the state and federal fish and wildlife agencies, tribes, land management agencies and utilities. The Council contracted with the Oregon Department of Fish and Wildlife; the Idaho Department of Fish and Game; the Washington Department of Fish; the Washington Department of Game; the Northwest Indian Fisheries Commission; the Columbia River Inter Tribal Fish Commission; the U.S. Bureau of Land Management; the U.S. Forest Service; the National Marine Fisheries Service; the Upper Columbia United Tribes; the Yakima Tribe and the Umatilla Tribe. The purpose of these contracts was to provide the Council with current fish harvest and escapement records, hatchery information including release data, spawning survey information and other pertinent information indicating anadromous species presence or absence.

A parallel study for the non-anadromous counterpart was conducted by BPA through the Pacific Northwest Rivers Study. In order to effectively respond to existing policies and programs as well as to reflect differences in river character, data availability, and public concerns, the project was organized into four state level studies. The remaining resource categories were chosen to reflect the overall value of rivers and streams as natural resources, the interests of public agencies and private interest groups, and to acknowledge the resource responsibilities of the Tribes, states, and federal agencies, as well as to reflect the priorities of the Pacific Northwest Electric Power Planning and Conservation Act. (For more information regarding the assessment guidelines for the Pacific Northwest Rivers Study, refer to the Assessment Guidelines in Appendix A.)

After compiling data from the various contracts, the resulting base of information data was sent back to the agencies and tribes to review for accuracy. During this time, HASC was developing the criterion to be used for designating protected areas. A joint decision was made by the states and HASC to not consider natural features, cultural significance, or recreational value as a basis protected area designation. Each state was then asked to indicate those reaches proposed for protected area status - either for anadromous fish, resident fish, wildlife or any combination of these resources. The Council's database is a result of all the compiled information available, and provides the information base for the Menu Program.

The hydrosite data component of the Program consists of site-specific information on those hydropower projects currently in the Federal Energy Regulatory Commission's licensing/exemption process or those existing projects and previously identified sites without current or previous FERC status. The initial data compilation for projects with FERC licensing/exemption status was completed using information contained in applications filed by the developer with FERC. Initial data compilation for non-FERC or National Hydropower Study projects was completely based on the findings of the NHS completed by the US Army Corps of Engineers in 1981. Data on newly proposed FERC and non-FERC projects, plus license/exemption status changes will be added or updated on a periodic basis to maintain the Hydropower Database in a current status. This information is used by the Council and BPA in making power resources supply forecasts and in providing site-specific data needed to rank potential hydroelectric projects.

GENERAL INFORMATION

The user should become familiar with the information that follows before attempting to use the Menu Program. The first section outlines the naming conventions used by the Northwest Power Planning Council. It is essential that the user follow these guidelines when entering data into the various search elements since the Program will find only those records in the database that exactly match the parameters entered. The second section describes the various codes and abbreviations used in the output screens and search type menus. State specific terms used in various Rivers Study functions are explained in the third section.

Northwest Power Planning Council Naming Conventions

When the information collected from the anadromous study and Rivers Study was received by the Council, it came in various forms, each using different codes and naming methods in its data management system. With data coming from so many different sources, the Council was faced with the problem of coming up with a system of naming guidelines to be used in the database.

The following abbreviations are used:

N	=	NORTH
S	=	SOUTH
E	=	EAST
W	=	WEST
M	=	MIDDLE
L	=	LAKE
R	=	RIVER
CR	=	CREEK
FK	=	FORK
BR	=	BRANCH
RES	=	RESERVOIR

An exception to these conventions would be, for example:

East Creek = EAST CR not E CR.

The following are spelled out:

BAY	DRAIN	LITTLE
BROOK	DRAW	OCEAN
CANAL	DRY	POND
CANYON	GULCH	PRONG
CHANNEL	HOLLOW	SLOUGH
COULEE	LEFT	

The proper order for "Forks" is following the stream name and separated by a comma:

WILLAMETTE R, N FK

The little north fork of the north fork of the Nehalem River would be represented as:

NEHALEM R, N FK, LITTLE N FK

The south fork of the east fork of the Salmon River would be represented as:

SALMON R, E FK, S FK

If more than one abbreviation is called for in a name, abbreviate only the last case. For example, the Blue River would be represented as BLUE R, whereas the Blue River Reservoir would be represented as BLUE RIVER RES, not BLUE R RES. Burnt Fork Creek would be represented as BURNT FORK CR, not BURNT FK CR.

Other than a few special cases, the normal input is simply the name of the body of water followed by the type of water it is:

COOS R	COUGAR RES	FLATHEAD L
DRY GULCH	SOUTH SLOUGH	BURNT FORK CR,E FK
LION CR	ALDER BROOK	L WASHINGTON SHIP CANAL

The field length for attribute NAME is 30 characters and is sufficient for most cases encountered in the database, although some exceptions may occur.

Explanations For Output Codes And Abbreviations

The following is a list of attribute names, search elements, and output codes and labels used in Protected Area and FERC screens and input search menus. For a list explaining codes and attributes used by each state in the Rivers Study, see the section below titled Rivers Study.

BASIN: Name of the subbasin drainage where the stream is located. Subbasins are defined and named according to Council conventions. 20 character field. See Appendix B for list of subbasins.

CAP(MW): Sustained peaking capacity under adverse water and load conditions expected for the project. Both user input and computed estimates of existing, potential, and total capacities installed at project. User input estimates are taken from FERC applications on proposed projects. Computer estimates are developed using the Corps' Hydropower Analysis Model.

CONSTRAINTS: Level of authority of laws or policies regarding the protected status of a reach administered by federal, state, or local agencies. An entry of "NONE" means there are no governmental policies protecting the reach and that the reach's protected status category is that recommended by the Council.

CONTACT: The person or entity identified on the FERC application as the contact for the project.

COSTS: User input/Computed. User input estimates provide a record of the developer's estimate of project costs. The computer generated estimates are developed using the Corps of Engineers' Hydropower Analysis Model. The purpose of the computed estimates is to provide a common basis estimate of costs that can be used to establish the relative economic ranking of projects - not to estimate the actual construction costs. -0.0 indicates that no information was available.

TOTAL COST: Total construction cost plus the cost of engineering & design, and supervision & administration.

OM&R: Annual operation, maintenance and replacement including ongoing project security, project monitoring, preventive maintenance, sediment removal, debris removal, equipment replacement, sinking fund, insurance, accounting and administration.

OTHER COST: Includes annual royalty payments or charges placed on a project by a utility, etc.

BASE PRICE YEAR: The price level year of the cost estimate input to the database. All user input cost data is a consistent price level. Costs for machine estimates are based on October 1983 prices.

COUNTY: Name of the county or counties through which the stream flows.

DAM STATUS: Indicates physical status of dam as it currently exists, regardless of its current use.

IS	Identified Site
UC	Under Construction
OP	Project in Operation

DEVELOPER: Name of the applicant/developer of a FERC project. Taken from FERC application.

DEVELOPER CODE: Code used in sorting projects by category of applicant. See Appendix C for list of Developer Codes.

FACILITY STATUS: Physical status of the power facility.

NE	Non-Existing
UC	Under Construction
OL	On Line

FERC #: The eight character project number assigned to each project application accepted by FERC. It is essential that the format shown is strictly followed when entering a FERC number as a search element. For projects with FERC numbers below 10000-00, a leading zero MUST be used.

Example: 06956-00 EGIN CANAL DIVERSION

The last two digits of the code show the current number of revisions to the original application.

Example: 06617-03 SILVER CR HYDROELEC PROJECT

Projects with multiple powerplants will have basically the same FERC number except the dashed character will be replaced with a letter (beginning with A) to indicate the different records.

Example: 10190A00 DAN CREEK LOWER
10190B00 DAN CREEK UPPER

FROM/TO: The lower and upper stream boundaries of a reach. (From confluence to confluence). Follows Council naming conventions. 30 character field.

ID_NUM: A unique 5 digit number assigned to each reach as a means of identification.

INBASIN: Logical field indicating a stream's location relative to the Columbia River Basin - either inside or outside the drainage.

LAT/LON: Refers to the latitude and longitude coordinates of the downstream end of the reach. Site Lat/Lon refers to the location of the FERC site project.

LEVEL: Refers to the hydrologic order of the reach. Stream levels are determined relative to the terminal reach of the stream system. For a given stream system, the terminal reach and the mainstem reaches have the lowest level. Reaches tributary to that given reach are one level higher than that reach.

Example: The Columbia River has a stream level of 1 and the Willamette River, which is a tributary to the Columbia, has a level of 2. The Coast Fork of the Willamette River has a level of 3.

LINE OWNER: The name of the owner of the existing transmission line to which the project would be connected.

NEAREST TOWN: Name of town located nearest to the project site.

P-O-L DATE: Power on Line. The date (year and month) when the project first began producing power.

POWER PURCHASER: Name of the power purchaser if a contract has been negotiated for a proposed project or if a power sales contract is in effect for an operating project. User input from FERC application.

PROD(AMW): Annual energy produced under the most adverse water conditions expected. Both user input and computer generated estimates are given. User input values are taken from the FERC application and computed values are generated by the Corps' Hydropower Analysis Model. Average MW Hours.

PROJECT NAME: Identification name of existing or potential dam or water management project. This attribute does not follow the Council's naming conventions - the project name is as it appears on the FERC application.

PROJECT STATUS/DATE: The current status of the project and the reference date indicating how recent the status is. This attribute is updated periodically according to FERC notices or project status listings and Federal agency reports. See Appendix D for list of FERC status codes.

PROTECTED CATEGORY: Two character code describing the Protected Area status of the reach. The first character indicates why the reach is protected and the second character indicates the jurisdiction of the protected status.

First Character

A	Anadromous fish only
B	Resident fish and wildlife
C	Anadromous fish and resident fish and wildlife
D	Anadromous fish and resident fish or wildlife
F	Resident fish only
U	Unprotected
W	Wildlife only

*Now stored in separate
Array - one to many relationships.*

Second Character

F	Federal
S	State
L	Local
N	None

PROTECTED STATUS: Logical entry. T/F if reach is protected or not.

Gone!

REACH LENGTH: Length in miles of the reach.

RIVER LENGTH: Length in miles of the whole stream/river to which a reach is a segment.

RRN: The EPA river reach number is the unique 16 digit identifier of transport reaches and shoreline reaches.

OF REACHES: Refers to the number of reaches in the selection set.

STATE: State through which the stream flows. Standard 2 letter abbreviation. (ID, OR, MT, WA).

STREAM NAME: Name of the specific body of water to be examined. Follows Council naming conventions outlined earlier. 30 character field.

STRUCTURE: Identifies the type of dam or diversion structure located on the reach.

TRIB OF: Name of that body of water into which the target stream flows or to which it is a tributary. Follows Council naming conventions. 30 character field.

TYPE: One character code which has been assigned to each reach to categorize transport reaches and shoreline reaches. See Appendix E for a list of Reach Types.

USGS MAP: Name of the USGS 1:100,000 quad where the reach is located.

Explanations For Rivers Study Attributes

The following section explain each state's choice of attributes and output codes used in the Pacific Northwest Rivers Study. Although some terms are used by more than one state, it is not correct to assume that each state uses the term in the same manner. These terms are presented in the FISH data and WILD data screens of the Rivers Study option and provide specific species and habitat information regarding the reach.

Rivers Study: Idaho

ABUNDANCE: Levels of species abundance are correlated with catch per unit effort (fish), or actual population size estimates based on field sampling data.

ABUNDANCE/USE VALUE: Sport fishery value of a reach as defined by a combination of Species Abundance and Angler Use values using a matrix value system.

ANGLER USE: Level of angler use expressed as fisherman days/unit area.

BALD EAGLE USE: Due to extensive and apparently increasing occurrence of bald eagles in Idaho, this category has been created to provide a means of evaluating the intensity of use by bald eagles for a particular stream.

BIG GAME USE: This category gives recognition to the fact that big game (elk, mule deer, white tailed deer, pronghorn) herds are of immense interest to IDFG and of importance to the state's economy.

COMMENT: Provided as a space to list specific stream considerations or exceptions. (presence of migration corridor, multiple species habitat, etc.)

COVER COMMENT: Provided as a space to list specific cover types or special considerations.

COVER TYPE: Descriptive category covering the gross morphology of the vegetation within 300m of the stream bank.

HABITAT RATING: Quality of habitat is defined as those areas which provide optimum, satisfactory, or poor environmental conditions, for the species in question. Includes water quality, instream flow, substrate composition, availability of instream cover, food abundance, and quality of riparian habitat.

HABITAT/SPECIES VALUE: This value is a combination of Habitat Rating and Species Abundance values using a matrix system.

INSTITUTIONAL CONSTRAINTS: Class descriptions comprised of laws or policies with direct implications for hydropower development. Imposed and/or administered by Federal, state or local government agencies or by the Tribes.

LEGAL ACCESS: Lists any limitations regarding access to a reach due to land ownership.

LEVEL OF CONCERN: Indicates relative ecological importance of resident fish species present.

HIGH: endangered, threatened, or species of special concern as defined by IDFG; or wild

native game fish species of regional importance.

MODERATE: all Idaho game fish except those of high concern; all native non-game species in natural, unconfined environments; exotic non-game populations that serve as a forage base for a species of high concern.

LOW: all exotic non-game species not included above; native non-game populations in altered habitats.

MAJOR SPECIES/MAMMALIAN/AVIAN/HERPTILIAN: Major resident fish species, mammalian, avian, or herptilian species present in the reach.

OVERALL RATING: Final value class assigned to the reach according to a matrix value incorporating stream and species values.

PHYSICAL ACCESS: Rates the physical ease in which a stream may be reached.

RECREATIONAL USE: Based on a qualitative ranking system including access, hunting, and wildlife viewing. Recognition also is given for state, regional, or national importance where a reach was important for scientific study or recreation. Recognition also is awarded for aesthetics of a reach that contributed to the recreational setting.

SPECIES COMMENT: Provided for the purpose of clarification of any ambiguous entries concerning wildlife species or for entering information that does not lend itself to standardization.

SPECIES INDEX RATING: A character index dependent on the kinds of wildlife species present.

- Species on Federal or State endangered species list.
- Species on Federal or State threatened species list.
- Species proposed for either Federal or State endangered or threatened species registers; or species designated by appropriate government agencies as species of special concern.
- Species of limited occurrence within the state or region although they may be common elsewhere. Rare species.
- All other wildlife species.

Rivers Study: Montana

REASONS FOR PROTECTED DESIGNATIONS: Lists resident fish and/or wildlife species associated with the reach.

Rivers Study: Oregon

COMMENT: Field for any other pertinent information concerning the reach that is not easily categorized elsewhere.

DISTURBANCE: Level of human-caused disturbance.

DOCUMENTATION: Status of reference material used in the study.

EROSION: Relative amount of streambank erosion.

HABITAT DIVERSITY: Relative variety of habitats (in stream structure, cover, pool/riffle, etc.) and/or communities within the riparian zone.

HABITAT PRODUCTIVITY: Amount of primary productivity the reach supports.

LAND USE: Current use of the land adjacent to the reach.

LEVEL OF CONCERN: Relative ecological importance of the species present.

HIGH: All game, furbearing mammals or game fish of regional importance; OR species listed as threatened or endangered or of limited distribution.

MODERATE: All other game, furbearing mammals or game fish; OR non-game species of local concern or ecological significance.

LOW: All other non-game species.

MAJOR SPECIES: Major resident fish or wildlife species present in reach. If more than 1 species of importance is present, the ODFW species code will be listed in the Comment field.

OTHER USE: Secondary use of land adjacent to the reach.

RECREATIONAL USE: Standards used for this value were the species abundance and angler use of game fish in the reach or wildlife harvest adjacent to the reach. Assessment based on stream surveys, creel censuses, harvest records, access to wildlife, recreation records and the knowledge of district biologists.

SPECIAL CONCERNS: Provides space to list any communities of special interest in the reach.

SPECIES ABUNDANCE: Relative abundance of the species in question.

SPECIES/HABITAT COMMENT: Provides space to list any special seasonal habitats or to give more detailed information concerning the major species or habitat.

SPECIES/HABITAT EXCEPTIONS: The following are exceptions which may have increased the value rating of the reach in question.

Migration Corridor - part of a migration route for wildlife or spawning fish.

Rare Species - threatened, endangered or species of limited distribution are present.

Research Site - reach is being used in a research study.

Potential Value - the condition of the reach or importance of a species present in the reach is likely to change soon.

Stocked Stream - stream needed hatchery stocking in order to maintain fish numbers.

Species Diversity - reach has several species of high or moderate concern.

SPECIES/HABITAT VALUE: This value is a combination of the overall species value and habitat value of the stream using a matrix system.

STREAM COVER: Relative amount of riparian coverage over stream.

STREAM FLOW: The degree of stream flow regulation (by dam, diversion structure, etc.)

STREAM TEMP: Annual mean high temperature of the stream.

STREAM VALUE: Overall value class assigned to the reach taking all factors into consideration.

STREAM ZONE: The geo-hydraulic category of the reach.

- Steep gradient, boulders, straight channel
- Moderate gradient, gravel/cobble, braided channel
- Slight gradient, fine sediments, meandering channel

Rivers Study: Washington

ANGLE USE: Relative use of the reach for recreational fishing, according to published information and file data.

HABITAT CONCERN: Habitat level of concern.

HABITAT FEATURES: Those qualities or characteristics occurring within 1000 ft of the stream bank which make the habitat distinct or unique.

HABITAT QUALITY: The relative degree of environmental conditions within a 1000 ft corridor on both sides of the reach for the species in question.

HABITAT SPECIES: Refers to those resident fish species present in the reach.

HABITAT VALUE: The value of the type of habitat present and its quantity, quality and importance to species of special concern.

KEY SPECIES: Those wildlife species of importance present within 1000 ft of the stream bank for a given reach.

RECREATIONAL VALUE: Estimate of actual recreational use, potential use or local community importance of the reach.

SPECIES VALUE: The relative importance of species occurrence in or use of corridors along the reach.

SPORT ABUNDANCE: Relative abundance of resident gamefish.

SPORT SPECIES: Refers to those resident fish species of sport or recreational value present in the reach.

STREAM VALUE: Value used to characterize each reach in terms of its relative significance to resident fish/wildlife.

STARTING THE MENU PROGRAM

At the s1032 prompt, type USE START, then press <ENTER>.

This opens all datasets and libraries required to run the program, then presents the title screen of the Menu Program when all initiating commands have been executed.

Note the "Press <PF2> or <F2> key for HELP". Use this key throughout the Program for HELP messages.

Press <ENTER> from the Title screen, and the DATA TYPE menu will appear.

The **Protected Areas Designation** option provides a summary of protected mileages for the streams in the selection set, lists mileages for each protected area category, and notes the presence of any active FERC hydrosites within the selection set and indicates whether they will be affected by a protected status. The user then has the option of viewing anadromous presence/absence data for the reach; Rivers Study findings that resulted in a protected status assignment to the reach; or of viewing FERC site data for any hydrosites present in the selection set.

The **FERC Site Data** option allows the user to view U.S. Army Corps of Engineers data concerning hydrosite proposals - site location, applicant/developer information, power summary, etc.

NOTE

Information concerning FERC hydroelectric development sites is provided through both options; when entering the Program through the **Protected Areas Designations** option only those sites with an active project status are located (a Preliminary Permit pending, granted, or unknown; a License pending, granted, or unknown; or an Exception pending or unknown). To access Corps information concerning any site under FERC jurisdiction -- with an active or inactive status -- enter the Program through the **FERC Site Data** option.

Move the TAB or BACKSPACE key to position cursor in front of desired option, then press <ENTER>.

Protected Areas Designations Option

This option accesses data from the Council's Fish & Wildlife Database, which consists of 23 datasets containing information concerning all facets of the river resource in the Pacific Northwest. This option is primarily concerned with the status of and reasons for protected area designations. In this regard, the user will have the option of accessing the anadromous data and Rivers Study findings that resulted in the designation of a protected area status to certain reaches. If any active FERC sites are located within the scope of the user's search, information will be available from the U.S. Army Corps of Engineers' Hydropower Database. The user will have the option of then viewing the hydrosite data.

For a full explanation of output codes, abbreviations, and a definition of terms, refer to the EXPLANATION FOR OUTPUT CODES AND ABBREVIATIONS section in this manual.

If the Protected Areas Designations option was selected, the SEARCH ELEMENTS menu will appear.

This menu allows the user to supply information regarding the scope of the search by entering as little or as much information as is known about a particular reach or group of reaches. HELP messages are available at each element to explain formats and naming conventions required for proper data entry. For an explanation of each search element, consult the General Information section of the Users Manual. Information concerning Council naming conventions is also outlined under General Information.

The cursor will be located at the "Stream Name" element when the SEARCH ELEMENTS menu is presented. If the scope of the search does not include a search by stream name, use the TAB or BACKSPACE key to position the cursor at the element(s) to be filled.

A "Wildcard" option is available for "Stream Name", "Trib of", "Reach No", and "FERC #" search elements. This allows the search procedure to locate records based on some portion of the value of a text attribute. The asterisk character [*] can be used to match any number of any text characters or spaces. It can also match no characters, if none are found in the attribute value. For example, a search initiated by entering SKYK* in the "Stream Name" search element would locate the following records with a stream name of:

SKYKOMISH R
SKYKOMISH R, N FK
SKYKOMISH R, S FK
SKYKOMISH SLOUGH.

Notice that pressing the <ENTER> key after entering an element does not initiate the search. Until an X is first entered at the message entry and <ENTER> is pressed, the user may cursor around the various search elements, making corrections as needed.

After entering the various elements concerning the scope of the search, enter an X value at the "Enter X Here _" entry, and press <ENTER> to initiate the search procedure. At this point a PROCEDURE IN PROGRESS message will appear.

The PROTECTED SUMMARY screen will appear when the search is complete.

This screen indicates the number of reaches/streams that have been selected, their protected mileages, protected area category mileages, and the number, if any, of active FERC sites located on a reach within the selection set. If a site has been proposed on a reach with a protected status, it is considered to be an affected site.

The VIEWING OPTIONS menu is located at the bottom of the screen.

From this menu, the user has the option of viewing detailed Anadromous, Rivers Study, or FERC data or of generating any of the printed reports available. To initiate a new search, select the "New Search" option; the SEARCH ELEMENTS menu will appear. To

quit the program or to select the **Ferc Site Data** option, select the "Main Menu" option; the **DATA TYPE** menu will appear.

Use the **TAB** or **BACKSPACE** key to position the cursor to the option that is desired and press **<ENTER>**.

Anadromous Data

This option provides information concerning the presence of anadromous stocks in the Columbia River Basin and coastal Washington and Oregon drainages. The information is a compilation of data resulting from a regional anadromous fish study. The assessment identified those reaches, either as migration corridors or as having spawning or rearing capacities, in which anadromous fish are present at some stage of their life.

To access this data, use the **TAB** or **BACKSPACE** key to place the cursor at the "Anadromous" option of the **VIEWING OPTIONS** menu and press **<ENTER>**. The **DISPLAY FORMAT** menu will appear. This menu allows the user to select how the data will be presented.

The "Each Record" options put the selection set into a single record mode, meaning that each record in the selection set will be presented individually. The only difference between the "By Stream" and the "In Hydrologic Order" options is the method in which the records are sorted. "By Stream" will present each record comprising a stream in order moving upstream, then move on to the next stream in the selection set. "In Hydrologic Order" will present each record in the selection set in a sequential manner starting from the terminal reach of the system and moving upstream.

The "Summary" options will group the data either by stream or for the entire selection set, depending on which option is selected.

Select the display option desired by placing the cursor in front of the proper option and press **<ENTER>**.

Depending on the display option chose, the screen will present species presence/absence data by reach mileage or by percent reach occupied. If an "Each Record" option was selected, detailed reach location information will also be provided. If a "Summary" function was selected, stream location data will be presented as it pertains to the selection set or the stream as a whole, depending on the summary option selected.

The **VIEWING OPTIONS** menu is located at the bottom of the screen.

If an "Each Record" or "Summary by Stream" option was chosen, other records in the selection set can be examined by selecting the "Next Record" or "Previous Record" options. The "Summary for All" display option will produce only one record for the entire selection set.

If at some point, a different display format is desired - the user may first want to see a summary for a particular stream, then want to examine each reach of the stream individually - select the "Format" option at the **VIEWING OPTIONS** menu. The user will be returned to the **DISPLAY FORMAT** menu, where an "Each Record" viewing option may be selected.

If a report is desired after viewing the various data, return to the Protected Areas screen to obtain access to the "Print Options" selection of the VIEWING OPTIONS menu. For more information regarding reports, consult the PRINT OPTIONS section below.

To return to the Protected Summary screen, select the "Return to Prot Areas" option.

To return to the Main Menu or to exit the program, chose the "Main Menu" option.

Use the TAB or BACKSPACE key to position the cursor at the desired option, then press <ENTER>.

Rivers Study Data

This option displays the five Rivers Study resource categories values: Resident Fish, Wildlife, Cultural Features, Natural Features, and Recreation - plus the Anadromous Fish value from the anadromous fish study - according to the state's evaluation of the reach. For more information regarding the scope of the Rivers Study, refer to the PACIFIC NORTHWEST RIVERS STUDY ASSESSMENT GUIDELINES section of this manual.

Depending on the display format chosen at the DISPLAY FORMAT menu, varying degrees of information describing the reach/stream/selection set will be provided along with the Rivers Study data. For "Summary" functions, the resource categories will be displayed in mileages per value rating (i.e., 19.3 of Outstanding Resident Fish habitat). "Each Record" functions will simply list the resource category and its value class (Resident Fish = Outstanding) since the reach mileage is already provided in the stream description.

The VIEW DATA menu will appear at the bottom of the screen.

If an "Each Record" or "Summary by Stream" display option was chosen, use the "Next" or "Last" options to view other records in the selection set. The "Summary for All" option provides one record only for the selection set.

The "FISH Data" and "WILD Data" options will display detailed species data and habitat information about the reach. The data is displayed as it was provided by each state, therefore, there will be differences in the presentation and quality of data between each state. These options are available only from an "Each Record" mode since the fish and wildlife data was gathered on a reach by reach basis not for the stream/river as a whole. If the current display option is a "Summary" mode, select the "Format" option from the VIEW DATA menu then select an "Each Record" mode at the DISPLAY FORMAT menu. Now it is possible to view the fish and wildlife data for the reach. For a full description of terms used by each state in the Rivers Study, refer to the RIVERS STUDY section of the GENERAL INFORMATION.

To generate a report, initiate a new search, or view other types of data, select the "Return to Prot Areas" option. You will be returned to the Protected Areas summary screen and the VIEWING OPTIONS menu. For more information about generating reports, see the PRINTING OPTIONS section below.

Use the TAB or BACKSPACE key to position the cursor at the desired option and press <ENTER>.

Ferc Data

This option provides information from the Corps Hydropower Database concerning any active hydroelectric development projects located in the selection set. Site location information (including the EPA river reach number where the site is located or has been proposed), project status, project developer/applicant and a power summary are provided for each hydrosite.

The VIEWING OPTIONS menu will appear at the bottom of the screen.

If more than one site was located in the selection set, use the "Next Record" or "Last Record" options to view the other records in the selection set.

To create a report, initiate a new search, or to view other types of data, return to the Protected Areas screen and the VIEWING OPTIONS menu. For more information concerning generating reports, see the PRINT OPTIONS below.

To exit the Program or enter the FERC Site Data option, select the "Main Menu" option.

Use the TAB or BACKSPACE key to position the cursor at the desired option and press <ENTER>.

Print Options

This option allows the user to select from the four reports available through the Menu Program. Report descriptions are listed below and sample reports are provided in Appendix F.

After selecting "Print Options" from the VIEWING OPTIONS menu, the PRINT OPTIONS menu will appear.

Protected Areas Report. This report provides a comprehensive summary of all data available for the selected reach - Protected Summary (category mileages, miles protected, % protected), Rivers Study Summary (resource category mileages/value class), and an Anadromous Summary (species mileages), plus general information describing the reach(es). If the selection set includes only one reach, detailed resident fish, wildlife, and habitat information will also be included, just as it was presented on the screen at the "Rivers Study" option. If the selection set includes several reaches or streams, a list of protected area designations for each reach in the selection set will be presented. This section will list each reach, its stream ID number, its upper and lower boundaries (FROM:/TO:), the name of the stream to which it is a tributary, the county and state in which it is located, the protected status of the reach, and the segment's total length and its protected length. If there is a FERC site present on the reach - with either an active or inactive status -an asterisk will appear next to the ID number of the reach. This ID number can then be entered as a search element in the SEARCH ELEMENTS menu to obtain a report with detailed information concerning that reach.

FERC Report. This report provides specific data for the selected project site - detailed

site location information, project status, developer/applicant information, cost and power summaries, and a protected summary for the reach.

List of FERC Sites in Selection Set. This report provides a list of all FERC sites located within the selection set, including some general information about each site (stream name, RRN, FERC #, project status, power data) and whether or not it will be affected by a protected status. A protected summary for the selection set is also included, indicating protected category mileages and % protected.

List of Anadromous Presence/Absence. This report lists each stream in the selection set along with the species name and the corresponding species mileage for the stream along with the stream length, width and the name of the stream to which it is a tributary. This is a summary function - the selection set is listed stream by stream, not reach by reach.

The Protected Areas, List of FERC Sites, and List of Anadromous Presence/Absence reports will be compiled for the whole selection set. If reports are needed for one specific reach, the user should provide enough information in the SEARCH ELEMENTS menu to ensure that just that one reach is located in the selection set. The FERC Site report provides information only for that reach on which the site has been proposed or is already located. After a FERC site report has been generated (but not necessarily printed), it is possible to obtain a Protected Areas report for just that reach, even if the selection set contains more than one record.

For example, BLUE R is entered in the "Stream Name" search element and OR is entered for "State". The Blue River, tributary to the McKenzie River is located. The selection set consists of 8 reaches and has a FERC site proposed on one of them. If a Protected Areas report is created at this point, it will be for the entire river and will contain a list of each reach comprising the river, its protected area category and its protected length. The reach with the proposed site on it will be flagged with an asterisk. If the user decides to first view the FERC site data and then decides to create a Protected Areas report, it will be for just that reach on which the site is proposed and will contain detailed resident fish, wildlife, and habitat information related to its protected area status. In this way it is possible to obtain two Protected Areas reports; one providing information concerning the whole river, and the other with specific data concerning the protected areas designation of the reach.

*****NOTE*****

Any time FERC data is required, either to view on the screen or to generate a report, the selection set is put into single record mode, which makes it possible to create reports just for that one record, even though the selection set may contain many records. If other types of data are then viewed (Anadromous or Rivers Study), the whole selection set will be restored.

If more than one FERC site is located within the selection set, it is possible to create reports for any of the sites list. After selecting the "FERC data" option to view the site data, simply use the "Next Record" or "Last Record" options to select the desired site on the screen. Since reports can only be

generated through the "Print Options" selection, it is necessary to return to the protected areas screen. By now choosing the "Print Options" selection the user can chose the FERC Site report option to create a report for the site of interest.

After selecting the desired report option, the PROCEDURE IN PROGRESS message will appear. When the report has been created, another menu will appear with options to view the report before it is printed, to print the report, or to return to the PRINT OPTIONS menu to select another type of report.

Ferc Site Data Option

This option accesses any hydrodevelopment project - FERC or non-FERC, active or inactive status - located in the U.S. Army Corps of Engineers' Hydropower Database. This database consists of site-specific data for hydrodevelopment projects currently in the FERC licensing/exemption process; and existing projects and previously identified sites without current or previous FERC status. These latter projects and sites consist of:

- existing federally owned power projects (federal projects are not subject to FERC jurisdiction)
- existing federally owned non-power projects with power potential
- existing non-federal dams and other water control structures with power potential, but which have not been proposed for development through an application filed with FERC
- undeveloped sites for which power potential has been previously studied

Data on newly proposed FERC and non-FERC projects as well as license/exemption status will be added or updated on a periodic basis to maintain the database in a current status.

After selecting the FERC Site Data option, the FERC SEARCH TYPE menu will appear.

At present FERC site searches are available only by FERC Number or Project Name. FERC numbers must follow the form 00000-00. If a site has a number of less than 10000-00, a leading 0 must be used. Project names do not follow the Council's naming conventions, but are printed exactly as they are submitted on the FERC application. Wildcard searches are possible for either search element.

After filling in either the FERC # or the Project Name, press <ENTER> to initiate the search.

The FERC Site Data screen will appear when the search is complete. For a description of the output items, refer to the EXPLANATIONS FOR OUTPUT CODES AND ABBREVIATIONS section of the manual.

If a FERC site is proposed on a stream that is not included in the Council's database, it will be cross-referenced to the reach closest to the proposed site, but with the RRN ending with 99.99. In such a case as this, no Protected Areas report could be generated since there is no true cross-referenced stream in the database. An error message will be printed on the screen if a Protected Areas report is attempted for such a site.

The VIEWING OPTIONS menu is located at the bottom of the screen.

The number of records selected will appear in the right corner of the Project Status box. To view other records in the selection set, use the "Next Record"/"Last Record" options accordingly.

To create a report, use the "Print Options" selection to bring up the PRINT OPTIONS menu. Any of the four report types are available.

To initiate a new search, select the "New Search" option and the FERC SEARCH TYPE menu will appear.

To enter the Program through the Protected Areas Designations option, select the "Main Menu" option to return to the DATA TYPE menu.

To exit the Menu Program, select the "Quit" option. Control will be returned to the s1032 prompt.

Use the TAB or BACKSPACE key to position the cursor at the desired option and press <ENTER>.

SAMPLE RUN FOR MENU PROGRAM

The following section takes the user through the Menu Program using three different examples to demonstrate how each section of the Program works, how to go between the different sections, and how to create the various reports that are available. The Cispus River was chosen because there are currently four active FERC sites proposed on it. The user will be able to access the resident fish and wildlife data from the Pacific Northwest Rivers Study results for each reach on the Cispus, as well as the FERC site data from the U.S. Corps of Engineers' Hydrosite Database for each of the proposed sites. Creating FERC site reports and both types of Protected Areas reports will also be demonstrated. Because there are no anadromous fish present in the Cispus River system, the Wind River subbasin was chosen to demonstrate how the Anadromous portion of the program works as well as demonstrating how to create an Anadromous Presence/Absence report. For the FERC Site Data portion of the Program, a Wildcard FERC # was chosen to demonstrate how this function works. Explanations for output codes and terms can be found in the EXPLANATIONS section of this manual.

At the VMS prompt, type:

```
SET DEF [JD.WORKING] <ENTER>
S1032 <ENTER>
```

At the 1032 prompt, type:

```
USE START <ENTER>
```

It will take a few moments for all the datasets and libraries to be opened. The title screen will appear when the program is ready for use.

```
--- << NORTHWEST POWER PLANNING COUNCIL RIVERS DATABASE >> ---

Protected Area Designations
Anadromous Presence/Absence Data
River Study Information
FERC Site Data

Questions regarding the database should be referred to
Duane Anderson, Database Manager
(503) 222-9620

VERSION 5.0                               SEPTEMBER 1989

Use the <PF2> or <F2> keys for help
```

Press <ENTER> to continue. . . .

Press <ENTER> to proceed to the DATA TYPE menu

<p style="text-align: center;">DATA TYPE</p> <p style="text-align: center;">Protected Areas Designations with options to view Anadromous Data Rivers Study Data</p> <p>FERC Site Data</p> <p>Exit Program</p>
--

Position the cursor, using the TAB or BACKSPACE key, in front of the **Protected Areas Designation** selection, then press <ENTER>. The **SEARCH ELEMENTS** menu will appear.

<p style="text-align: center;">SEARCH ELEMENTS</p> <p>STREAM NAME: TRIB OF: REACH NO: COUNTY: STATE: SUBBASIN: INBASIN?: STREAM ID #: FERC #:</p>
--

ENTER X HERE _ THEN PRESS <ENTER> TO INITIATE SEARCH

In order to review data concerning the Cispus River, **CISPUS R** should be entered at the **STREAM NAME** entry. Use the **TAB** or **BACKSPACE** key to move the cursor to the next entry, **TRIB OF**. If the stream to which the Cispus River is a tributary of is known, enter that here - although it is not absolutely necessary since the Cispus River is a unique name in the database. Press the **TAB** key three more times to position the cursor at the **STATE** entry. Again, an entry here is not absolutely necessary, but entering a value of **WA** for **STATE** will speed the search procedure, since the search will only examine those records of streams located in Washington. Press the **TAB** key twice to position the cursor at **INBASIN?**. Entering a **T**, (for true, the stream in question is located within the Columbia River Basin) although not necessary, will also speed the search procedure by only considering those streams located within the Columbia Basin. Move the cursor to the **ENTER X HERE _** entry and enter an **X** then press <ENTER>. The **PROCEDURE IN PROGRESS** message will appear.

It is entirely up to the user to decide how little or how much information to enter at the **SEARCH ELEMENTS** menu. For this particular search, the stream name would be enough to ensure that only

records for the Cispus River would be located since there is only one Cispus River in the database. A more common stream name such as the White River, for example, would require more information to ensure that the right White River is located. By entering more information, the time required by the program to locate those records is lessened. In this particular case, entering values at the STATE and INBASIN? entries would start the search from a base of about 2300 records - only those reaches located within the state of Washington that are also tributary to the Columbia River - rather than the 33,346 records that comprise the whole database.

The following protected areas report will appear when the search is complete.

SEARCH ELEMENTS			
Stream: CISPUS R	Basin: COWLITZ		
Trib of COWLITZ R	Reach #:	ID #	
County: LEWIS	State: WA	Inbasin: T	FERC #

PROTECTED SUMMARY						
1 streams in selection set				Reaches	Miles	
CATEGORY	CONSTRAINTS			Protected	7	30
	None	Federal	State	Total	14	50
Anadromous Only	0	0	0	% Protected	50	60
Resident Fish Only	0	0	0	4 Active FERC sites		
Wildlife Only	0	0	0	Affected	Unaffected	
Res Fish & Wild	30	6	0	# Sites	2	2
Anad & Fish & Wild	0	0	0	Cap(MW)	48.0	28.4
Anad & (Fish or Wild)	0	0	0	Prod(AMW)	39.0	21.3
Unprotected	13	0	0			

VIEWING OPTIONS					
Anadromous	Rivers Study	FERC Data	Print Options	New Search	Main Menu

Because the Cispus River is a unique name to the database, the BASIN, TRIB OF, and COUNTY elements were filled in as well as those entries filled by the user at the SEARCH ELEMENTS menu. The PROTECTED SUMMARY indicates that only one stream has been located in the database that matches those search parameters exactly as entered by the user. The river consists of 14 reaches, 7 of which are protected, and is 50 miles long, 36 of which have a protected status -- 30 miles under the Council's recommendation, and 6 miles under Federal protection. Four FERC sites with active statuses are located on the river with two sites proposed in protected areas (affected) and two sites proposed in unprotected areas (unaffected).

If a Protected Areas Report including a listing of protected categories and mileages for each reach in the selection set is desired at this point, position the cursor at the "Print Options" selection and press <ENTER>. The PRINT OPTIONS menu will appear.

PRINT OPTIONS

Protected Areas Report
FERC Site Report
List of FERC Sites in Selection Set
List of Anadromous Presence/Absence

Return to Program

Move the cursor to the Protected Areas Report option and press <ENTER>. A message will appear stating that a list of reaches in the selection set will be included in the report. When the report has been created, a screen will appear which will allow the user to view the report before it is actually printed. A copy of the actual report is included in Appendix F.

PROCEDURE COMPLETE

View Data
Print Report
Return to Program

If the user selects the View Data option, the data report will remain on the screen for about 10 seconds. During this time, do not press the <ENTER> key or any other key to clear the screen - the screen will clear itself after the designated time period. The user may use the Scroll or Pause key to hold the report on the screen longer than the 10 second viewing time if so desired.

After viewing the data or printing the report, select the Return to Program option and press <ENTER>. The user will be returned to the PRINT OPTIONS menu. Now move the cursor to the Return to Program option of this menu and press <ENTER>. The user now will be returned to the Protected Areas screen.

To view Rivers Study data, position the cursor at the Rivers Study selection and press <ENTER>. The DISPLAY FORMAT menu will appear.

DISPLAY FORMAT

Each Record, by Stream
Each Record, in Hydrologic Order
Summary by Stream
Summary for All Records

In order to view specific resident fish and wildlife data for each reach, an Each Record mode must be selected. If a Summary mode is chosen only the protected area category mileages will be presented - the specific fish and wildlife data will not be presented. Select the "Summary by Stream" option now and press <ENTER>. The following screen will appear.

Summary by Stream

EPA REACH SUMMARY DATA		Rec # 1	of 1
Stream: CISPUS R			
Trib of COWLITZ R	From MOUTH		
State: WA	To HEADWATERS		
County: LEWIS	Level: 3		
Basin: COWLITZ	No. Reaches: 14		
Map: MOUNT ST HELENS	River Len: 50.40		

River Study Summary						
Tot Miles	50.4	FISH	WILD	CULT	NATU	RECR
Outstanding		45.3	27.7	0.0	3.1	6.8
Substantial		0.0	17.6	8.6	0.0	0.0
Moderate		0.0	0.0	0.0	2.7	0.0
Limited		0.0	0.0	0.0	0.0	0.0
Unknown		0.0	0.0	36.7	39.5	38.5
Not Present		5.1	5.1	5.1	5.1	5.1

VIEW DATA					
Next	Last	FISH Data	WILD Data	Format	Return to Prot Areas

A brief stream summary provides information concerning the location, length, and level of the stream. The Rivers Study Summary lists the mileages for each resource class according to its assigned significance rating. The VIEW DATA menu at the bottom of the screen provides the user with viewing options. Since there is only one stream in this selection set, the Next and Last options will print an error message indicating that either the end or the beginning of the selection set has been reached. Selecting the FISH or WILD options will produce an error message explaining that the individual state fish and wildlife specifications can be viewed only from an "Each Record" mode. Try any of these options now to view these messages.

The "Format" option will return the user to the DISPLAY FORMAT menu, where an "Each Record" mode selection may be chosen. The "Return to Prot Areas" option will return the user to the Protected Summary screen. Select the Format option now and press <ENTER>. The DISPLAY FORMAT will appear. Chose the "Each Record, By Stream" and press <ENTER>. The following screen will appear.

Each Record, By Stream

EPA REACH DATA			
Stream: CISPUS R	FERC site: True	Rec # 1 of 14	
Trib of COWLITZ R	From MOUTH		
EPA Reach # 1708000400100.00	To QUARTZ CR		
State: WA	ID_NUM: 500	and	
County: LEWIS	Level: 3	Type: R	Protected Category: UN
Basin: COWLITZ	Reach Len: 4.10	No. Reaches: 14	
Map: MOUNT ST HELENS	River Len: 50.40	Lat: 46.480	Lon: 122.1000

RIVER STUDY VALUES		
Resident Fish	1	1 = Outstanding
Wildlife	2	2 = Substantial
Cultural	5	3 = Moderate
Natural	5	4 = Limited
Recreational	1	5 = Unknown
Anadromous	6	6 = Not Present

VIEW DATA				
Next	Last	FISH Data	WILD Data	Format Return to Prot Areas

Detailed reach location information is provided along with reach length, river length, stream level, stream type, number of reaches comprising the stream, protected area status, and a T/F flag for the presence of a FERC site on the reach. Rivers Study values are simply listed next to the resource category. To view state fish and wildlife specifications, select either the FISH or WILD option. If the FISH option was chosen, the following screen will appear. (The following screen configuration is used only for Washington data. Fish and wildlife screens will vary slightly from state to state.)

FISH data

Washington Resident Fish Specification			
Habitat Species	Sport Species	Hab Quality	Outstanding
RAINBOW TROUT	RAINBOW TROUT	Hab Concern	Outstanding
CUTTHROAT TROUT	CUTTHROAT TROUT	Hab Value	Outstanding
		Hab Abun	Outstanding
		Angler Use	Moderate
		Species Val	Substantial
		Stream Val	Outstanding

Press <ENTER> to continue. . . .

Press <ENTER> to return to the VIEW DATA menu. Now chose the WILD option. The following screen will appear.

WILD data

Washington Wildlife Specifications	
Habitat Features	Key Species
Moderate deer winter range	ROOSEVELT ELK
Moderate elk winter range	FURBEARERS
Good riparian habitat	BLACKTAIL DEER
Habitat Value Substantial	Recreational Value Unknown
Species Value Substantial	Overall Stream Value Substantial
Comm:	

Press <ENTER> to continue. . . .

Press <ENTER> to return to the VIEW DATA menu. To view fish and wildlife data for other reaches in the selection set, use the Next and Last options to select other reaches, then use the FISH and WILD options to view their specifications. When viewing data is complete, select the "Return to Prot Areas" option and press <ENTER> to return to the Protected Summary screen.

Four FERC sites are present on reaches within the selection set. To view the Corps data on these sites, position the cursor at the FERC data option and press <ENTER>. This option uses a fixed format in the presentation of the records, which are sorted by FERC number. The first record to appear is CISPUS RIVER NO 3.

Site Location Info			
Project CISPUS RIVER NO 3	Reach No 1708000400301.00	Lat 46 26 57	
Stream CISPUS R	FERC # 10568-00	Lon 121 53 21	
County LEWIS	State WA	Town RANDLE	Inbasin T

Project Status			
Developer BARRISH + SORENSON HYDROELEC	DevCode	Rec # 1	of 4
Contact BARRISH, S P	Phone 206 254-2423	P-O-L Date /	
Line Owner LEWIS CO PUD	Proj Status PP-GTD	As of 88/11/18	
Power Purchaser TACOMA P+L, PUGET SOUND P+L	Dam Status IS	Facility Status NE	

Protected Status			
Location	Prot ?	Category	Constraints
POWERHOUSE	YES	RESIDENT FISH & WILDLIFE	NONE
1st DAM/DIV	YES	RESIDENT FISH & WILDLIFE	NONE
2nd DAM/DIV			
3rd DAM/DIV			

Press <ENTER> for more information

	Installed Capacity (MW)		Total Capacity
	Existing	New Potential	
User Input	0.0	23.3	23.3
Computed	0.0	0.0	0.0

	Average Annual Energy (AMW)		Total Capacity
	Existing	New Potential	
User Input	0.0	18.9	18.9
Computer	0.0	0.0	0.0

	Project Costs			
	Total Cost	OM&R	Other	Price Year
User Input	-1.0	-1.0	-1.0	-1
Computed	-1.0	-1.0	-1.0	-1

VIEWING OPTIONS				
Next Record	Previous Record	Format	Return to Prot Areas	Main Menu

To view the other records in the selection set, use the "Next Record" or "Previous Record" options accordingly. After viewing all four records, the user decides to create a report for the CISPUS RIVER NO 2 project. Use the "Next Record" or "Last Record" selections to present that record on the screen. Now select the "Return to Prot Areas" option and press <ENTER>. The user will be returned to the Protected Summary and the VIEWING OPTIONS menu. Cursor over to the "Print Options" selection and press <ENTER>. The PRINT OPTIONS menu will appear. Place the cursor in front of the "FERC Site Report" option and press <ENTER>. The PROCEDURE IN PROGRESS message will appear. When the procedure is complete, another menu will appear which gives the user the option of viewing the report before it is actually printed. Selecting the "Return to Program" option will return the user to the PRINT OPTIONS menu.

At this point, a second Protected Areas Report can be created that will include information only for the reach on which the CISPUS RIVER NO 2 project is located. This report will include the state's specifications for resident fish and wildlife resource categories. Position the cursor in front of the Protected Areas Report option and press <ENTER>. When the report has been created, the user will have the option of viewing it before it is printed.

To create a report listing all four FERC sites on the Cispus River, return to the PRINT OPTIONS menu and select the "List of FERC Sites in Selection Set" option. Again, when the procedure has been completed, the user will have the option of viewing the data before the report is actually printed. All three of these reports are included in Appendix F.

Return now to the Protected Summary and the VIEWING OPTIONS menu. Select the "New Search" option and press <ENTER>. The SEARCH ELEMENTS menu will appear. Cursor down to the SUBBASIN entry and enter WIND. Enter an X at the X field and press <ENTER>. The following Protected Summary screen will appear.

SEARCH ELEMENTS			
Stream:		Basin: WIND	
Trib of		Reach #	ID #
County:		State:	Inbasin: FERC #

PROTECTED SUMMARY						
24 streams in selection set				Reaches	Miles	
	CONSTRAINTS			Protected	43	111
CATEGORY	None	Federal	State	Total	48	157
Anadromous Fish Only	65	0	0	% Protected	90	71
Resident Fish Only	0	0	0			
Wildlife Only	0	0	0	0 Active FERC sites		
Res Fish & Wildlife	6	0	0	Affected Unaffected		
Anad & Fish & Wildlife	36	5	0	# Sites		
Anad & (Fish or Wild)	4	14	0	Cap(MW)		
Unprotected	6	0	0	Prod(AMW)		

VIEWING OPTIONS					
Anadromous	Rivers Study	FERC Data	Print Options	New Search	Main Menu

There are 24 streams in the Wind River drainage comprised of 48 reaches, 43 of which are protected, and totaling 157 miles, 111 of which are proposed by the Council for protection and 19 of which are protected under Federal policy. The Category breakdown indicates that 65 miles are protected for anadromous fish only; 6 miles for resident fish and wildlife; 36 for anadromous fish, resident fish, and wildlife; 4 miles for anadromous fish and resident fish or wildlife; and 6 miles as unprotected under the Council's proposed protected areas. Currently, only 19 miles are actually protected under Federal jurisdiction. No FERC sites with an active status are present in the Wind River drainage. To find out more about the species of anadromous fish present in the drainage, select the Anadromous option from the VIEWING OPTIONS menu and press <ENTER>. The DISPLAY OPTION menu will appear. Select the "Summary For All" option and press <ENTER>. The following screen will appear.

Summary for All

Anadromous Summary		
Spring Chinook: 83.3	Summer Steelhead: 114.6	Anad Miles: 114.6
Summer Chinook: 0.0	Winter Steelhead: 30.8	River Miles: 156.8
Fall Chinook: 30.8	Chum: 0.0	
Coho: 57.5	Sockeye: 0.0	# Reaches: 48
Total Anadromous Miles (by species)		

This screen gives a summary in miles for all anadromous species within the Wind River drainage. The total river mileage for the drainage is 156.8 miles, 114.6 of which is occupied by anadromous fish at some point in their life cycle. Select the Format option to return to the DISPLAY FORMAT menu. Choose the "Summary by Stream" option. This function provides the same summary format as the "Summary for All" option, except that each stream in the selection set is presented individually.

Summary by Stream

EPA REACH SUMMARY DATA		Rec # 1	of 24
Stream: WIND			
Trib of COLUMBIA R	From MOUTH		
State: WA	To HEADWATERS		
County: SKAMANIA	Level: 2		
Basin: WIND	No. Reaches: 13		
Map: HOOD RIVER	River Len: 30.80		

Anadromous Summary			
Spring Chinook:	30.8	Summer Steelhead:	30.8
Summer Chinook:	0.0	Winter Steelhead:	30.8
Fall Chinook:	30.8	Chum:	0.0
Coho:	21.8	Sockeye:	0.0
Total Anadromous Miles (by species)		# Reaches:	13
		Anad Miles:	30.8
		River Miles:	30.8

For this display mode, the records are sorted sequentially - as if walking up the mainstem and meeting each tributary as it empties into the river. In this case, the Wind River is the first record presented of the 24 records. The Little Wind River is the next record, as it is the first tributary to the mainstem.

To view anadromous data for each reach rather than each stream, return to the DISPLAY FORMAT menu and select an "Each Record" mode.

Each Reach, By Stream

EPA REACH DATA			
Stream: WIND R	FERC site:	Rec # 2	of 48
Trib of COLUMBIA R	From MOUTH		
EPA Reach # 1707010506700.00	To LITTLE WIND R		
State: WA	ID_NUM: 3658	and	
County: SKAMANIA	Level: 2	Type: R	Protected Category: C
Basin: WIND	Reach Len: 1.20	No. Reaches: 13	
Map: HOOD RIVER	River Len: 30.80	Lat: 45.710	Lon: 121.7900

Anadromous Data			
Spring Chinook:	1.00	Summer Steelhead:	1.00
Summer Chinook:	0.00	Winter Steelhead:	1.00
Fall Chinook:	1.00	Chum:	0.00
Coho:	1.00	Sockeye:	0.00
Values Represent Percentages		Tot Anad Miles:	1.20
		# of Species:	5
		River Width:	61
		Blocked:	F
		Dams:	1

The "Each Record" provides detailed location information, reach length, river length, reach type,

protected area category, stream level, and a T/F flag for the presence of a FERC site on the reach. The anadromous data is represented by percent occupation rather than by mile of occupation for each reach. The total anadromous mileage for the reach is also provided. Use the Next Record and Last Record options to view the other records in the selection set.

To create a Presence/Absence report, return now to the Protected Areas screen by selecting the "Return to Prot Areas" option at the bottom of the screen. Now choose the Print Options selection at the VIEWING OPTIONS menu. The PRINT OPTIONS menu will appear. Select the "List of Anadromous Presence/Absence" option and press <ENTER>. The PROCEDURE IN PROGRESS message will appear. When the report has been created, another menu will appear, allowing the user to view the report before it is printed. This report is included in Appendix F.

Return now to the Protected Areas screen by selecting the "Return to Program" selection at the PRINT OPTIONS menu. Position the cursor in front of the Main Menu selection and press <ENTER>. The DATA TYPE menu will now appear. Select the FERC Site Data option and press <ENTER>. The FERC SEARCH TYPE menu will appear.

<p>FERC SEARCH TYPE</p> <p>FERC # Project Name:</p>
--

For this search menu, only one of the elements needs to be filled -- either a FERC # OR a Project Name. Enter 1010* at the FERC # entry and press <ENTER>. The asterisk will initiate a wildcard search - this allows the search procedure to locate records based on some portion of the value of the attribute, in this case, the first 4 characters of the FERC identification number. Wildcard searches are also possible for Project Name searches. The following screen will appear.

Site Location Info			
Project IRENE CREEK	Reach No 1711000501499.99	Lat 48 30 43	
Stream IRENE CR	FERC # 10100-00	Lon 121 18 17	
County SKAGIT	State WA	Town MARBLEMOUNT	Inbasin

Project Status		
Developer CASCADE RIVER HYDRO	DevCode	Rec # 1 of 4
Contact MCMURTREY, L J	Phone 206 885-3986	P-O-L Date /
Line Owner	Proj Status PP-GTD	As of 87/06/30
Power Purchaser	Dam Status NR	Facility Status NE

Protected Status			
Location	Prot ?	Category	Constraints
POWERHOUSE	YES	RESIDENT FISH & WILDLIFE	NONE
1st DAM/DIV	YES	RESIDENT FISH & WILDLIFE	NONE
2nd DAM/DIV			
3rd DAM/DIV			

Press <ENTER> for more information

Installed Capacity (MW)			
	Existing	New Potential	Total Capacity
User Input	0.0	3.7	3.7
Computed	0.0	0.0	0.0

Average Annual Energy (AMW)			
	Existing	New Potential	Total Capacity
User Input	0.0	1.8	1.8
Computed	0.0	0.0	0.0

Projects Costs				
	Total Cost	OM&R	Other	Price Year
User Input	-1.0	-1.0	-1.0	-1
Computed	-1.0	-1.0	-1.0	-1

VIEWING OPTIONS					
Next Record	Previous Rec	Print Options	New Search	Main Menu	Quit

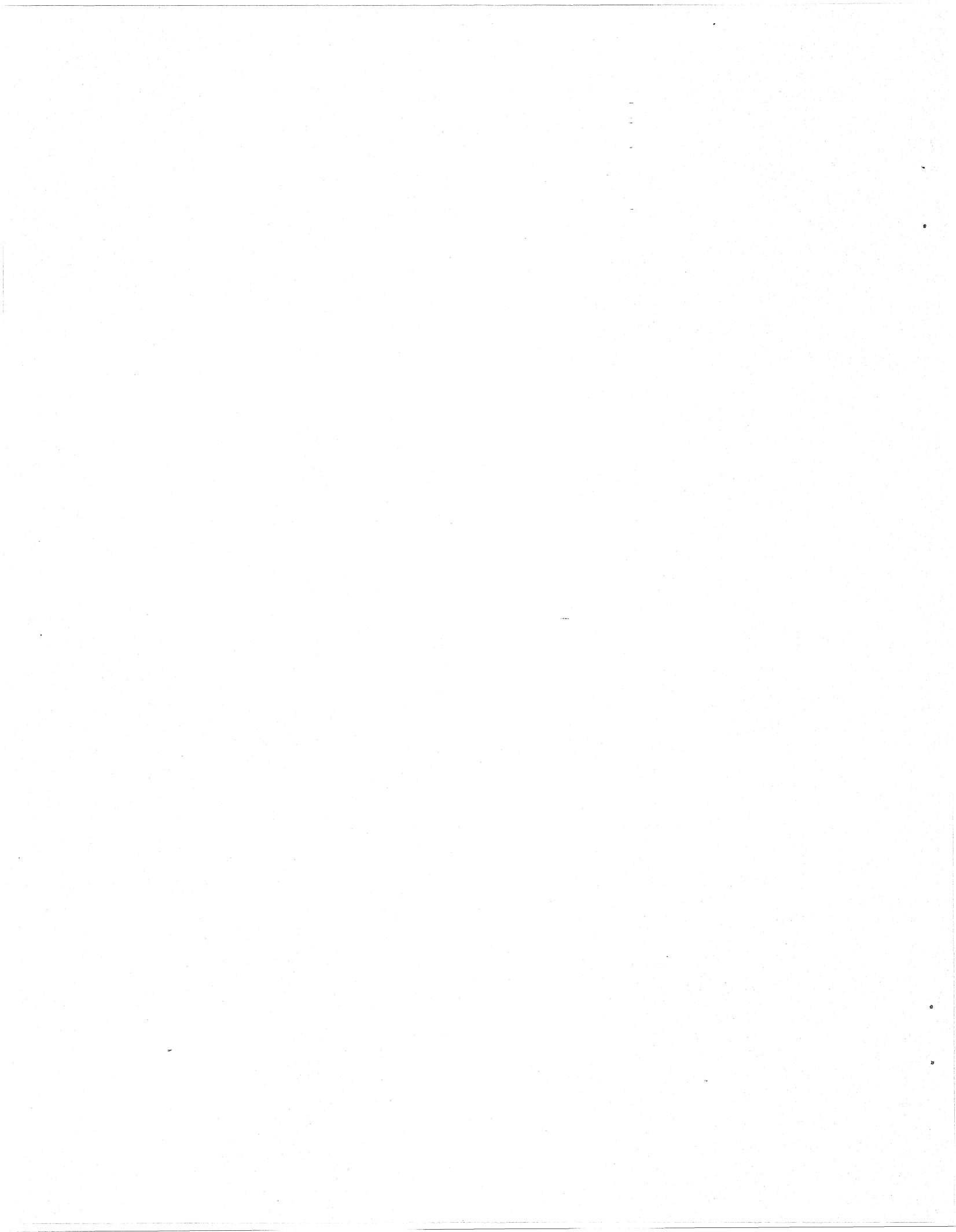
This is the same screen format as is used in the FERC portion of the Protected Areas option. Notice that the Reach No for this site ends with 99.99. This means that the site is not cross referenced to any reach in the database - that stream on which the site is located is not included in the Council's stream inventory. In a case such as this, the reach in the database closest to the actual location of the site is used as a pseudo-cross reference number solely as a means of indicating the general area as to

where the site is located. Since there is no true cross reference at present for the site, EPA/Stream data is not available. A FERC report for this site would include only information concerning the site - information only from the Corps' database. Try the Print Options selection and create a FERC report for this site. A message will print across the screen while the report is being created indicating that the site is not cross referenced to any particular reach in the Council's database. Now view the data. All of the stream location information values are missing, but information concerning the FERC applicant/developer, facility status, and cost and power summaries are all present.

Return now to the Program. Select the "New Search" option and press <ENTER>. The FERC SEARCH TYPE menu will appear. Enter CISPUS* at the Project Name entry and press <ENTER>. Notice that five records were located - recall that only four records were located when the Program was entered through the Protected Areas Designations option and the CISPUS R was selected. This is because the Protected Areas Designations option only locates those sites with an active status. The FERC Site Data option accesses any site in the Corps' database under FERC jurisdiction. The project with FERC # 10567-00 has a status of PP-DND, an inactive status, and thus is not identified through the Protected Areas Designations option. Reports are available for any FERC site in the Corps' hydrosite database, regardless of its project status.

At this point, select the "Quit" option from the VIEWING OPTIONS menu and press <ENTER>. The user will be returned to the 1032 prompt. To reenter the Program, type "CALL START" and press <ENTER>. The title screen will appear.

APPENDIX A



APPENDIX A: PACIFIC NORTHWEST RIVERS STUDY ASSESSMENT GUIDELINES

This section describes the process that participants followed to complete the Pacific Northwest Rivers Study. It identifies assessment methods for each river resource category, the types of data collected, and the criteria for the evaluation and ranking of river reaches. For specific detailed evaluation criterion for each state (i.e., what constitutes a warm water non-game fish in Idaho), consult individual state Assessment Guidelines documents, available through BPA.

The Rivers Study was designed to produce a consistent and verifiable river resource database. While this information may prove useful for a variety of applications, the purpose of the project was to identify resource considerations which might affect hydropower development. The intent is to use this information to identify areas where minimal impact can be anticipated and thus where development might be appropriate. The study responds to the expressed need for resource information for the following:

1. Energy Supply Forecasting: BPA and NPPC
2. Protected Areas: NPPC - 1984 Columbia River Basin Fish & Wildlife Program
3. Site Ranking: NPPC - Northwest Conservation and Electric Power Plan

It was not the intent of this study to circumvent the existing management responsibilities of any participating agency. The study was undertaken as a cooperative planning effort which will benefit all participants. Results do not constitute official policy and by themselves imply no specific action by any participant.

The Rivers Study was an 18 month regional effort with funding of approximately 1.0 million dollars provided by the BPA. Concurrently, the NPCC provided \$540,000 to evaluate anadromous fish resources and Indian cultural and archaeological values. Rivers Study activities and goals, budgets, and time schedules are listed in the September 1984 Pacific Northwest Rivers Study Plan available from BPA. The actual assessment was conducted between May and December of 1985. Review of preliminary findings was completed by May 1986 and information entered into a computerized information system by October 1986. Continual update of the information is occurring at the present time.

RIVER ASSESSMENT PROCESS

The goal of the study was to evaluate and document the significance of individual river segments and systems for a variety of natural resources. Comparative assessment was a major feature of this process. The process did not, however, result in rivers being ranked in numerical order. Rather, each stream reach was given one of four significance ratings for each of five resource categories along with ranking of land-use restrictions which would affect hydroelectric development. The study relied on currently available information and evaluation by recognized resource experts. The states, Tribes, and federal agencies were represented in the evaluation process commensurate with their legal authorities and management duties.

The following is a summary description of the assessment process.

STEP 1: Identification of River Resource Categories

Categories were chosen to:

- reflect the overall value of rivers and streams as natural resources;
- reflect the interests of public agencies and private interest groups;
- acknowledge the resource responsibilities of the Tribes, the states, and federal agencies; and
- reflect the priorities of the Pacific Northwest Electric Power Planning and Conservation Act, (Regional Act) P.L. 96-501.

The categories selected included resident fish, wildlife, cultural features, natural features, recreation, and institutional constraints. Anadromous fish and tribal cultural and archaeological values were included through a separate NPPC contract.

A senior resource expert and cooperating experts were designated in each state to oversee activities related to each resource category. Cooperating experts provided the senior resource expert.

STEP 2: Inventory of Information and Identification of Experts

Each state task force inventoried the availability of expertise and information for each of the resource categories. Agencies, groups, individuals, or other sources that had or could produce useful data within the study period were identified.

STEP 3: Criteria and Standards Development

For each river resource category, evaluation criteria and standards were developed. An effort was made to standardize criteria for all state level studies in order to ensure region wide consistency. Criteria were, however, refined at the state level to meet the specific circumstances of each state. The development of criteria and standards was the responsibility of regional and state project staff. Review and commentary was provided by participating federal agencies and Indian tribes as well as the interested public.

In order to standardize the assessment process among resource categories, a list was developed that included all river segments that would be in the assessment. The list included all major rivers and significant tributaries.

STEP 4: Individual Resource Category Evaluation

An independent inventory was undertaken for each resource category. Under the direction of designated senior resource experts, rivers and streams meeting minimum standards were assessed by field level specialists using the criteria and assessment procedures noted in Step 3.

Resource experts assigned a value class to each river segment on maps and data forms. The terms "Outstanding", "Substantial", "Moderate", "Limited", "Unknown" or "Not Present" were noted. River segment descriptions and rules governing treatment of tributaries were determined by the state level project management staff. The number of river segments to be included in each value class was determined by resource experts. No regionwide guidelines were given.

Results were compared for consistency, and river segments were grouped according to overall significance. The final result of the resource assessment was the identification of all river areas which possess a particular fish, wildlife, cultural, natural, or recreational value and the relative significance of each area. The final result of the institutional constraint assessment was an identification of rivers and streams where existing legal designations or administrative programs might constrain the development of new hydropower facilities.

STEP 5: Display and Review of Resource Category Findings

For each resource category a set of data forms was completed with the final significance ratings given to individual river segments and the documentation used to substantiate these ratings. Final ratings were also depicted on color coded 1:100,000 scale maps. Information from the data forms was subsequently entered into a computer.

Findings were then reviewed by designated senior resource experts and agency and Tribal participants. Results were revised as appropriate by the senior resource experts in consultation with regional project management. A chance to review results and provide comments was given to private groups and citizens through a series of public meetings. A special effort was made to document the significance of reaches and streams found to have high and/or unique resource values, as well as those reaches reflecting the priorities of the Regional Act.

STEP 6: Information Synthesis

Rankings from resource categories were combined in order to display all resource values of a given stream segment. This synthesis was achieved by means of a computerized data management system. Using this system a matrix can be created which lists all river segments in a given basin and depicts all final resource ratings associated with each segment. (See 1986 Final Report.)

STEP 7: Presentation and Documentation

An information packet was prepared which summarized findings for all resource categories. This information, as well as printouts from the study's computerized information system, were made available to interested persons. Graphic representations of data were prepared using computer mapping techniques provided by BPA. Examples of these computer maps are also available. Public meetings and agency briefings were conducted to further inform interested parties regarding study findings.

General information is available through the 1986 Final Report, which describes findings from the individual state's portion of the study.

PRODUCTION GUIDELINES

In order to standardize the assessment process and the resulting products, a number of regionwide production guidelines were established. Included were the following:

I. Factors to be Evaluated

A. Resident Fish

- cold water game and non-game fish
- warm water game and non-game fish
- spawning, rearing, and migration areas
- Indian subsistence fishery
- threatened and endangered species
- species of special concern

B. Wildlife

- migratory birds
- resident birds
- big game
- fur bearers
- small mammals
- endangered and threatened species
- species of special concern

C. Natural Features

- endangered and threatened plants
- unique plant communities and other recognized natural areas
- undeveloped and free flowing segments
- sensitive riparian wetlands
- gorges, waterfalls, rapids, miscellaneous geologic features

D. Cultural Features

- historic trails and sites
- archaeological sites
- river related architectural sites

E. Recreation

- white water boating
- flat water boating
- river camping
- river related shoreline activities
- public use sites

F. Legal Constraints

1. Federal

- wild and scenic rivers
- wilderness areas
- research natural areas
- national parks
- roadless areas
- national fish hatcheries
- national wildlife refuges

2. State: as applicable
3. Local: as applicable

Each river resource category was to be evaluated separately. Assessments were to be conducted independently without reference to other resource values. For example, river reaches were evaluated for recreational boating without reference to their value for wildlife or historic features.

II. Geographic Scope

As a guide, participants were asked to evaluate rivers and streams which appear on 1:100,000 scale maps. In practice, any river segment with a significant resource value could be included. Stream segments not evaluated included:

- intermittent streams
- small tributaries
- those under federal institutional constraints (e.g., National Parks, etc.)
- stream segments currently impounded for hydropower or other purposes

In addition a corridor width of 1000 feet was recommended for those resources categories associated with riparian areas.

III. River Reach Determination

A standardized list of river reaches was designated for use within each state. This system was based on hydrologic configuration though some physical and/or social landmarks were used. While a given resource category could deviate from this reach system, every effort was made to adhere to this system. Each state coding system was also cross referenced to the EPA river reach coding system in order to standardize at the regional level.

IV. Value Classes

Value class refers to the resource significance rating assigned to each river segment for a given resource category. All resource category findings were to be reported using the same value class system as follows:

- | | |
|-----|--------------------------------|
| 1 = | unique or outstanding resource |
| 2 = | substantial resource |
| 3 = | moderate resource |
| 4 = | limited resource |
| 5 = | unknown or unclassified |
| 6 = | resource not present |

V. Data Presentation

A. Data Entry Forms

In order to facilitate the assessment process as well as to document findings, rating forms were prepared for each resource category. In most instances forms followed a matrix format with river reaches arrayed along one axis and evaluation criteria arrayed along the other. Using these forms individual river segments could be evaluated for each specific criterion and a final rating determined based upon the sum of individual criterion ratings. As appropriate, additional descriptive information could also be displayed.

B. Maps

Maps were used to graphically display river values. Sets of 1:100,000 scale mats and a supply of 1:500,000 scale hydrologic unit maps were provided by BPA.

One set of 1:100,000 scale maps was used to depict findings for each resource category. Value significance was recorded in colored pen using the following color scheme:

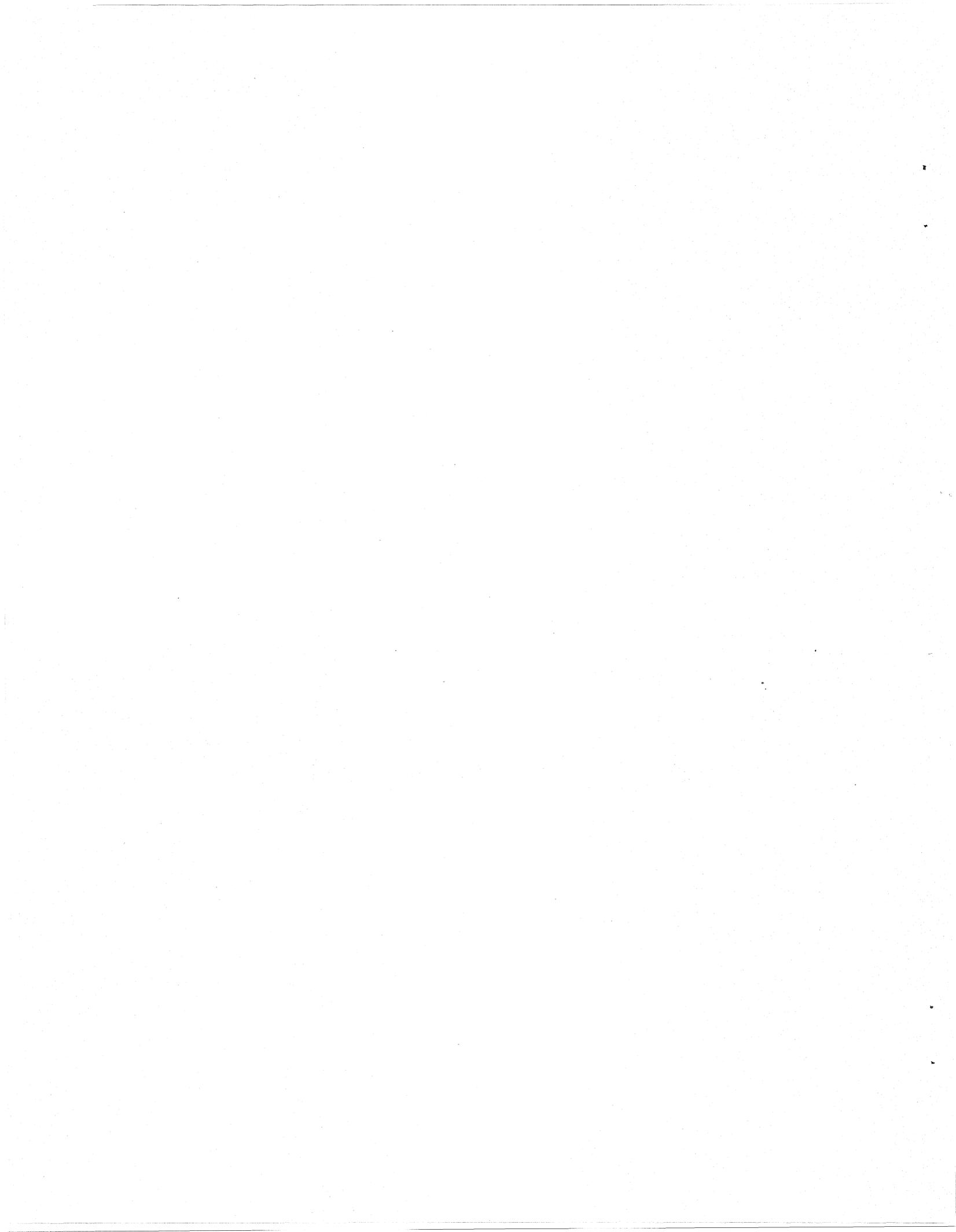
Red	Outstanding or Unique
Orange	Substantial
Gray	Moderate
Green	Limited
No Mark	Unclassified or Unknown
Brown	Resource Not Present

The Unknown or Unclassified designations predominated on any one map. Participants did not color stream segments in this category. Uncolored segments can be assumed to be either Unknown or Unclassified.

To decrease production time, an arrow at the upstream terminus of a colored section was used to signify that all segments above that point are a consistent value. Upstream exceptions were noted in the appropriate color.

Hand drawn 1:500,000 scale maps were prepared for some resources for ease of presentation and review. Following completion of the study display maps were produced using computer mapping techniques.

APPENDIX B



APPENDIX B: SUBBASIN LIST

100

BEAR_VALLEY
 BIG_HORN
 BITTERROOT
 BLACKFOOT
 BOISE
 CALAPOOIA
 CLACKAMAS
 CLARK_FORK
 COAST_FK_WILLAMETTE
 COEUR_D_ALENE
 COL_R_BELOW_BON
 COL_R_FR_BON_TO_PRRP
 COL_R_FR_PRS_TO_CHJO
 COWLITZ
 CRAB
 DESCHUTES
 ELOCHOMAN
 ENTIAT
 FIFTEENMILE
 FLATHEAD
 GRANDE_RONDE
 GRAYS
 GREAT_SALT_LAKE
 HEADWATER_SALMON
 HOOD
 IMNAHA
 JOHN_DAY
 KALAMA
 KLAMATH
 KLICKITAT
 KOOTENAI
 LAKE_CHELAN
 LEMHI
 LEWIS
 LITTLE_MISSOURI
 LITTLE_SALMON
 LOCHSA
 LOWER_MAIN_SALMON
 LOWER_WILLAMETTE
 LOWER_YELLOWSTONE
 LOW_BEAR
 MAINSTEM_CLEARWATER

42

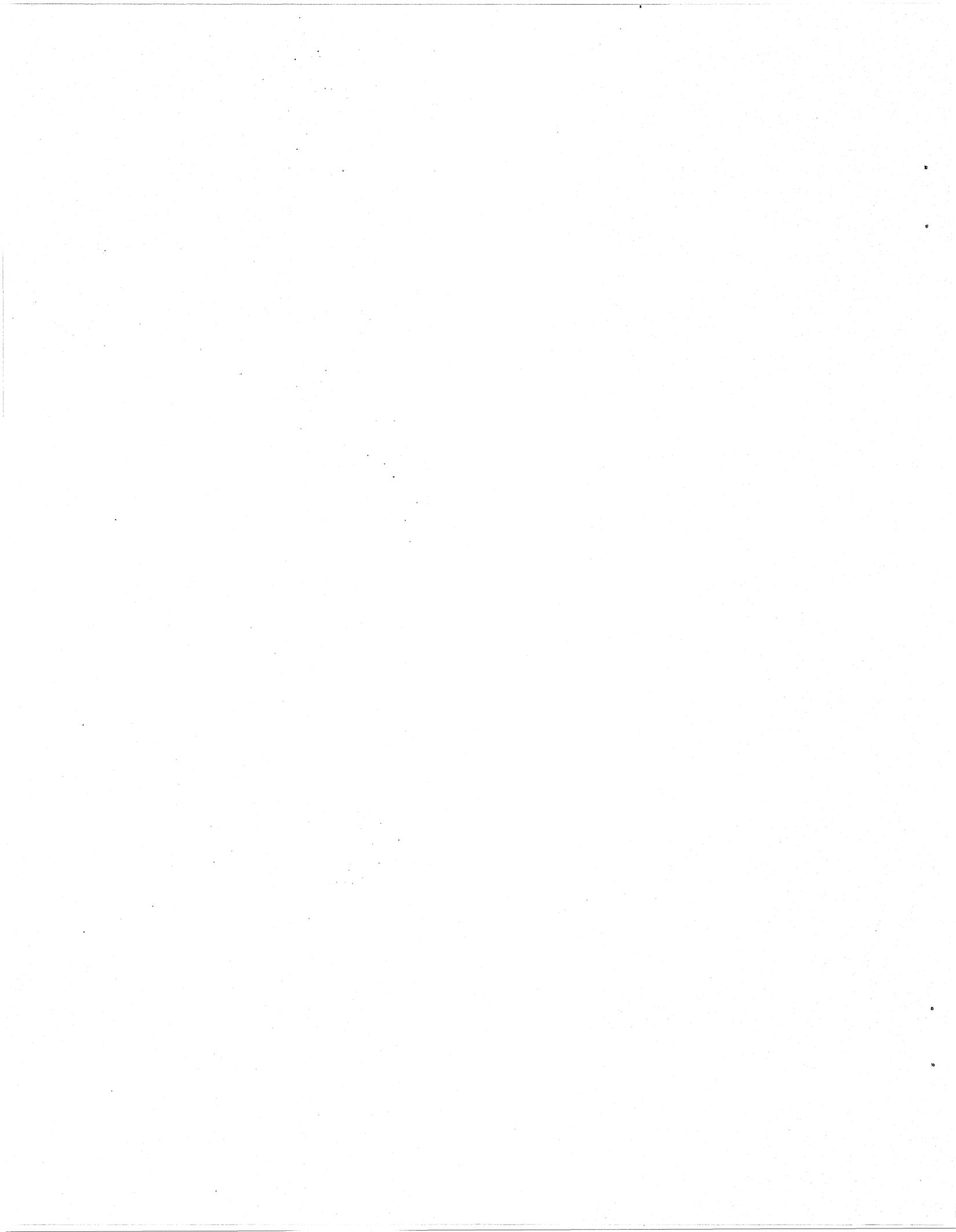
MAINSTEM_WILLAMETTE
 MALHEUR
 MARIAS
 MCKENZIE
 METHOW
 MIDLE_FK_WILLAMETTE
 MID_FK_CLEARWATER
 MID_FK_SALMON
 MID_MAIN_SALMON
 MID_SNAKE_BOISE
 MID_SNAKE_POWDER
 MILK
 MISSOURI_HEADWATER
 MISSOURI_MUSSELSHELL
 MOLALLA
 NORTH_OREGON_COAST
 NO_FK_CLEARWATER
 OKANOGAN_SIMILKAMEEN
 OREGON_CLOSED_BASIN
 OWYHEE
 PAHSIMEROI
 PALOUSE
 PANTHER_CREEK
 PAYETTE
 PEND_OREILLE
 POWDER_TONGUE
 PUGET_SOUND
 SANDY
 SANTIAM
 SASKATCHEWAN
 SECESH
 SELWAY
 SNAKE_HEADWATER
 SNK_R_FR_MOU_TO_HELL
 SOUTH_OREGON_COAST
 SO_FK_CLEARWATER
 SO_FK_SALMON
 SPOKANE
 TUALATIN
 TUCANNON
 UMATILLA
 UPPER_BEAR

42

UPPER_COLUMBIA
 UPPER_MISSOURI
 UPPER_QUINN
 UPPER_SALMON
 UPPER_SNAKE_CLOSED
 UPPER_YELLOWSTONE
 WALLA_WALLA
 WASHINGTON_COAST
 WASHOUGAL
 WEISER
 WENATCHEE
 WHITE_SALMON
 WIND
 YAKIMA
 YAMHILL
 YELLOWSTONE

16

- Will make split out (due to subbasin planning).



APPENDIX C

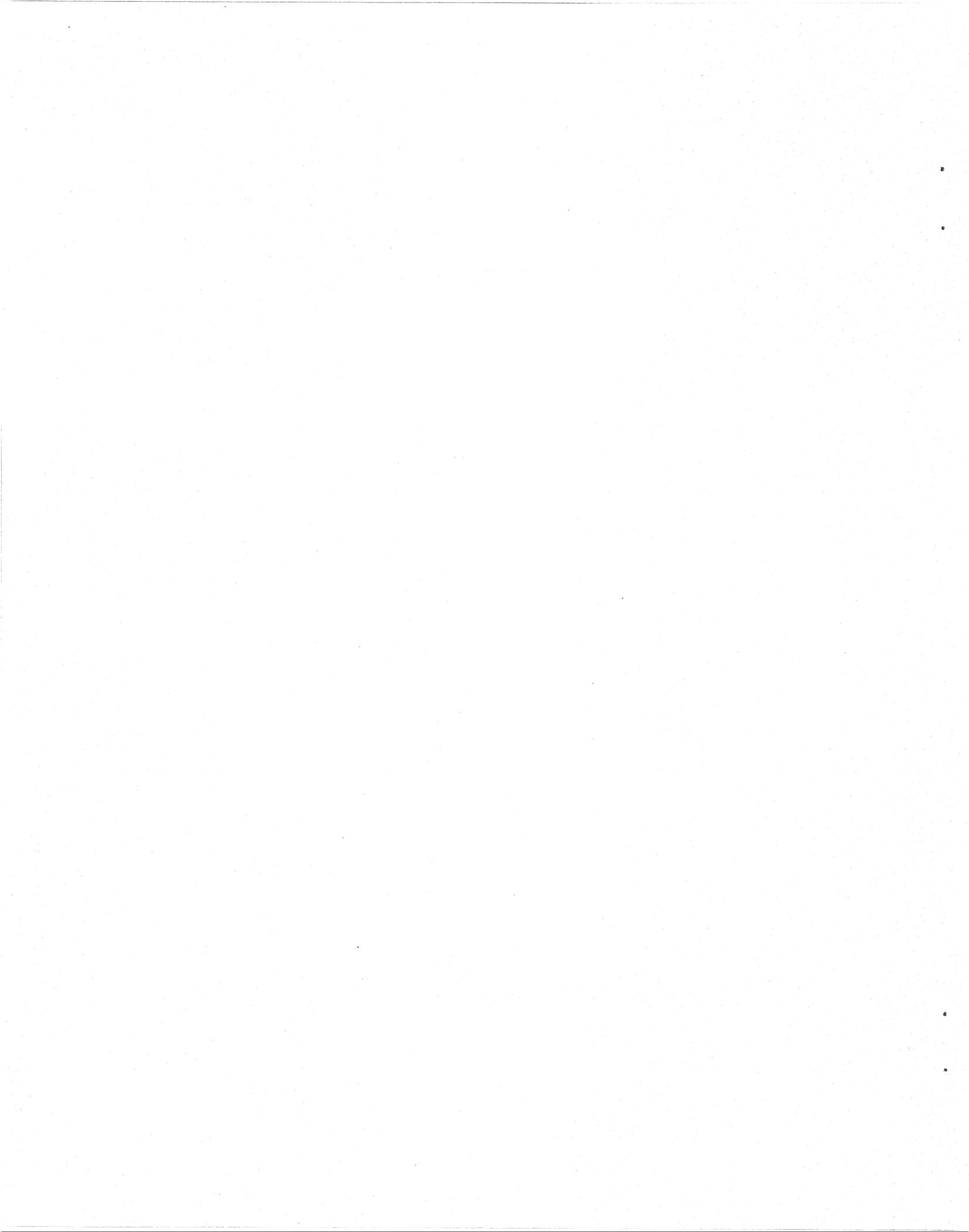
APPENDIX C: DEVELOPER CODES

	<u>CODE</u>	<u>CATEGORY</u>
1st Character	F	FEDERAL
	H	HYBRID (joint private & municipal application)
	M	MUNICIPAL
	P	PRIVATE
	S	STATE
	O	OTHER
2nd Character	A	US ARMY CORPS OF ENGINEERS
	B	INDIAN TRIBES
	C	COUNTY
	D	PUBLIC UTILITY DISTRICT
	F	US FOREST SERVICE
	I	INVESTOR OWNED COMPANY (non-utility)
	P	PRIVATE INDIVIDUAL OR PARTNERSHIP
	R	US BUREAU OF RECLAMATION
	S	STATE
	T	TOWN OR CITY
	U	INVESTOR OWNED UTILITY
	W	IRRIGATION/OTHER WATER DISTRICT/COOP/COMPANY
	X	REA COOP
	O	OTHER

Example: FR Federal - Bureau of Reclamation



APPENDIX D



APPENDIX D: FERC PROJECT STATUS CATEGORIES

First Two Characters

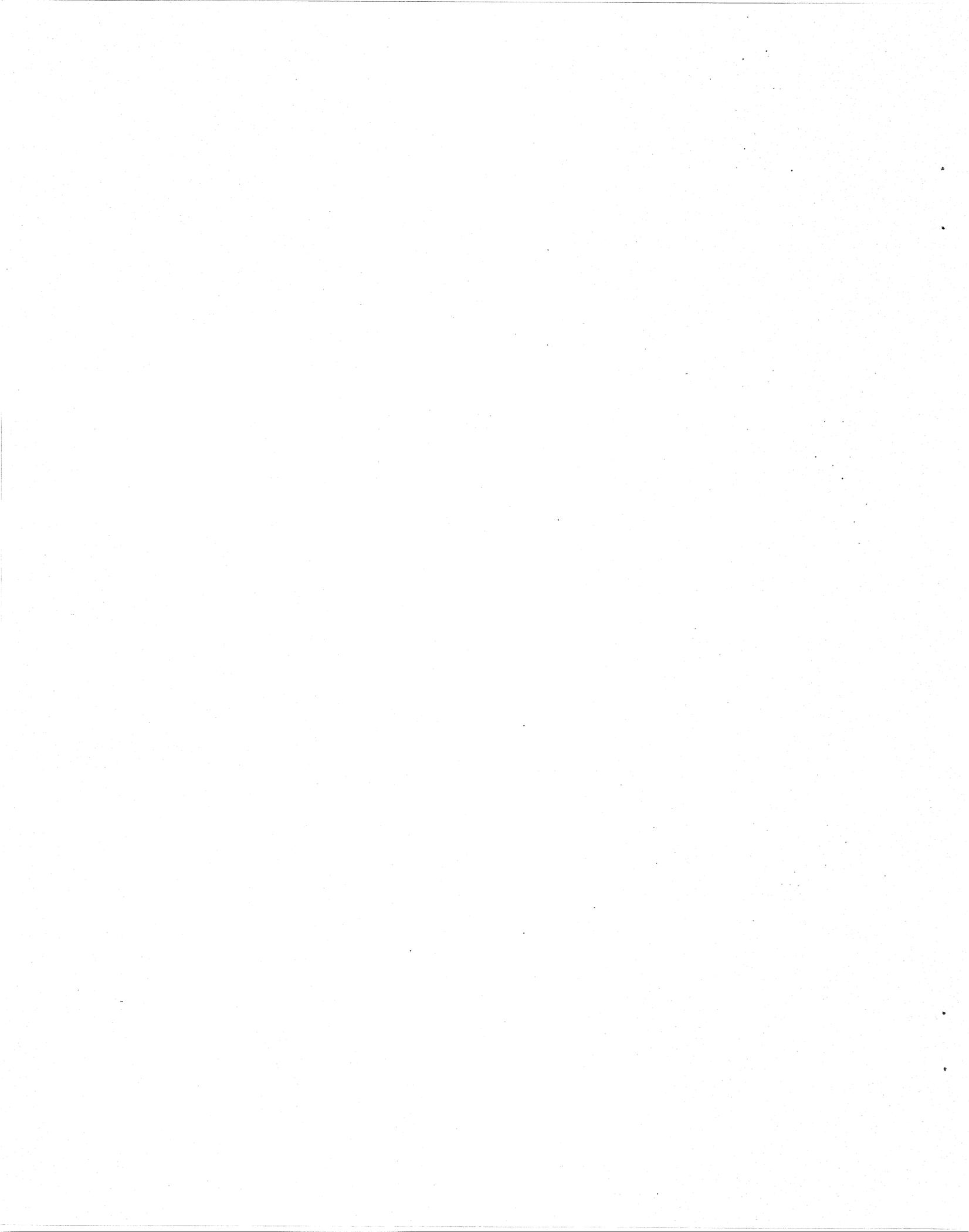
<u>CODE</u>	<u>TYPE OF APPLICATION</u>
PP	Preliminary Permit
LC	License (includes license amendments)
RL	Relicense
EX	Exemption (non-Federal project)
XX	Non Federal project without FERC status

Last Three Characters

<u>CODE</u>	<u>TYPE OF APPLICATION</u>
CAN	Canceled/terminated
EXP	Expired
GTD	Granted
PND	Pending
REJ	Rejected
SUR	Surrendered
WDN	Withdrawn
DIS	Dismissed
REV	Revoked
VAC	Vacated
UNC	Under Construction
POL	Power on Line
UNK	Unknown

Example: PP-GTD Preliminary Permit has been Granted

NOTE: Relicense projects are assumed to have power on line, therefore, only PND and POL status codes apply. A status of POL is assigned upon issuance of the new license.



APPENDIX E



APPENDIX E: REACH TYPES

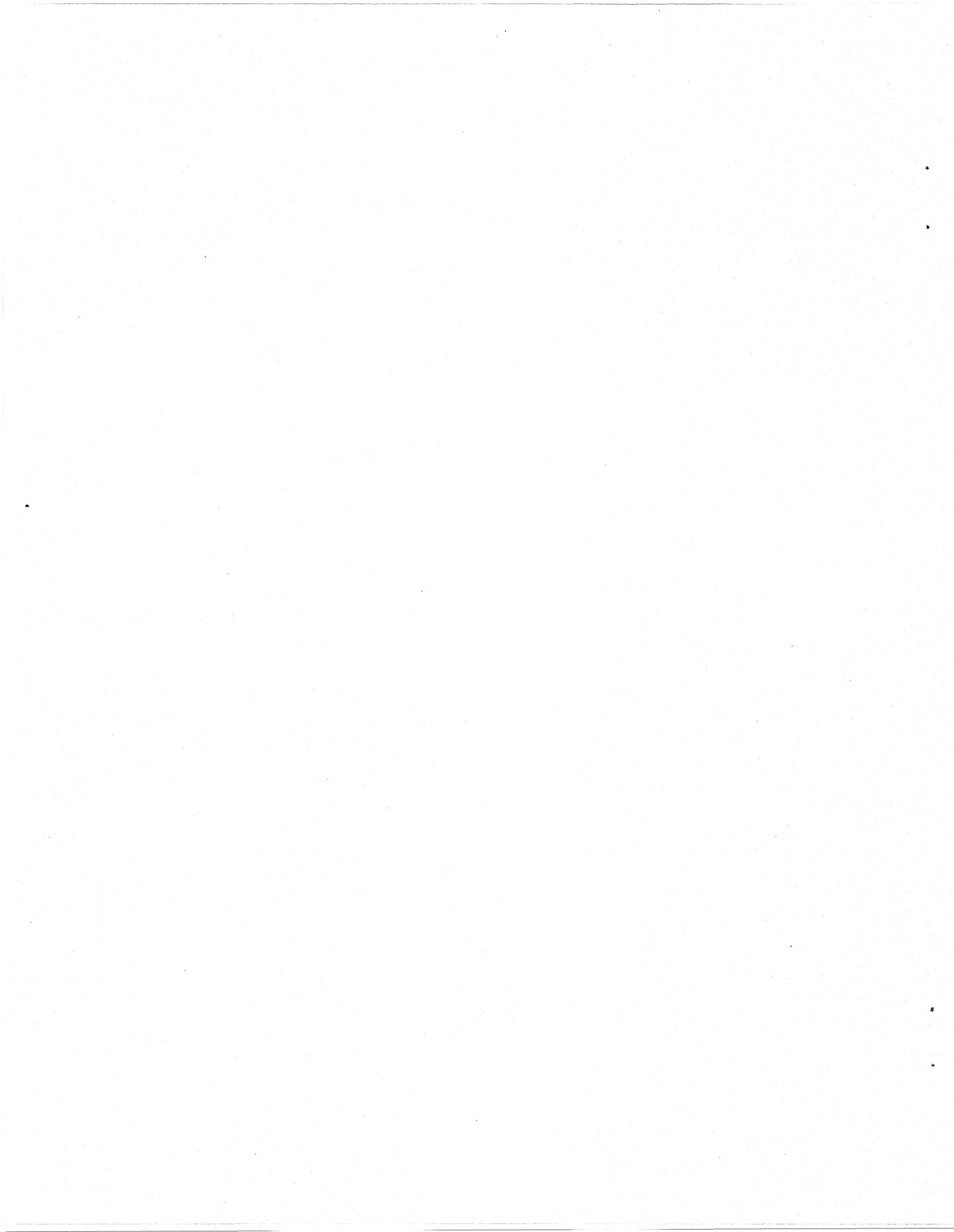
TRANSPORT REACHES: Segments of the hydraulic transport paths through streams and inland open waters including lakes and estuaries. (RFLAG = T)

<u>TYPE</u>	<u>DESCRIPTION</u>
A	Artificial Lake 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.
B	Bi-directional Reach. A reach for which the direction of flow is ambiguous.
D	Dam Reach. A reach which is a dam through which water flows.
E	Entry Reach. A reach which receives flow from Canada.
F	Falls Reach. A reach which is either a waterfall, drop spillway, or a reach of rapids.
M	Artificial Open Water Reach. An artificial reach within any open water, other than a lake or reservoir, to provide a connection between input and output reaches of the open water.
N	Isolated Reach. A reach with no surface water connection to an outlet of a cataloging unit.
R	Regular 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 headwater reach which has no reaches above it in the database, but does have a downstream connection.
T	Terminal Reach. A downstream reach to which there is no other downstream reach, but does have upstream reaches in the database. (a reach which empties into the ocean, a land-locked lake, the ground or an international boundary)
V	Open Water Terminal Reach. A reach which is both a terminal reach and an artificial open water reach.
X	Terminal Start Reach. A reach which is both a terminal reach and a start reach.
Z	Terminal Entry Reach. A reach which is both a terminal reach and an entry reach.

NON-REACH TYPES: those reaches that depict U.S. continental coasts and the perimeters of lakes, estuaries, and reservoirs as well as the shorelines of wide rivers and lakes. (RFLAG = F)

<u>TYPE</u>	<u>DESCRIPTION</u>
C	Coastline Segment The segment follows the shoreline of a coast.
I	Island Segment. The segment is the shore of an island.
L	Lake Boundary Segment. The segment defines the shoreline of a lake or reservoir.
W	Wide-Mouthed River Segment. The segment is along the shoreline of a wide-mouthed river
Y	International Boundary Segment. The segment lies along the Canadian Border.

APPENDIX F



APPENDIX F: SAMPLE REPORTS

For a list of output codes and definitions used in the reports, see the explanations section under General Information.

Protected Areas Report. Cispus River, tributary to the Cowlitz River.

This report provides Protected Areas, Rivers Study, and Anadromous summaries for the selection set indicated under Search Selections. Because this selection set consists of more than one reach, a list containing each reach and its protected area status is also included. If detailed resident fish and wildlife data is then required for a reach on the list, the user should enter that reach's IDNUM in the ID # element of the SEARCH ELEMENTS menu.

Protected Areas Report. Cispus River, from the North Fork of the Cispus River to East Canyon Creek.

This report provides detailed location information plus Rivers Study and Anadromous summaries concerning the reach in question. Because this selection set includes only one reach, state resident fish and wildlife information are also provided. A message is also provided to indicate whether or not a FERC site (of any status) is present on the reach. If a site is present, a FERC site report could then be generated for details on the project.

FERC Site Report. Cispus River No 2.

This report provides site specific data for the project along with information concerning the reach on which the site is located. A message at the bottom of the report indicates whether or not the site will be affected by a protected area status for the reach.

List of FERC Sites in Selection Set. Protected Reaches Summary and FERC Site Files for Cispus River.

This report provides a protected area summary including category mileages for the selection set, as well as a power summary of for all sites in the selection set. Individual site information is then listed for each site present.

List of Anadromous Presence/Absence. Wind Subbasin.

This report lists each stream in the selection set along with the species name and corresponding species mileage for the stream, plus the stream length, width, and the name of the stream to which it is a tributary.

SUMMARY OF PROTECTED AREA DESIGNATIONS, NW POWER PLANNING COUNCIL, SEP-07-1989

SEARCH SELECTIONS:

Reach Name: CISPUS R
Trib of: COWLITZ R

County: LEWIS
Subbasin: COWLITZ

State WA INBASIN: T
No. of Reaches: 14

-- PROTECTED SUMMARY --

CATEGORY	CONSTRAINTS			Protected	Reaches	Miles
	None	Federal	State			
Anadromous Fish Only	0	0	0			
Resident Fish Only	0	0	0			
Wildlife Only	0	0	0			
Res Fish & Wildlife	30	7	0			
Anad & Res Fish & Wild	0	0	0			
Anad & (Fish or Wild)	0	0	0			
Unprotected	13	0	0			
				Protected	7	30
				Total	14	50
				% Protected	50	60

-- RIVER STUDY SUMMARY IN MILES --

	Resident Fish	Wildlife	Cultural	Natural	Recreational
Outstanding Resources	45.3	27.7	0.0	3.1	6.8
Substantial Resources	0.0	17.6	8.6	0.0	0.0
Moderate Resources	0.0	0.0	0.0	2.7	0.0
Limited Resources	0.0	0.0	0.0	0.0	0.0
Unknown/Unclassified	0.0	0.0	36.7	39.5	38.5
Resource Not Present	5.1	5.1	5.1	5.1	5.1

-- ANADROMOUS SUMMARY IN MILES --

Spring Chinook	0.00	Fall Chinook	0.00	Summer Steelhead	0.00	Chum	0.00
Summer Chinook	0.00	Coho	0.00	Winter Steelhead	0.00	Sockeye	0.00

SUMMARY OF PROTECTED AREA DESIGNATIONS, NW POWER PLANNING COUNCIL, SEP-07-1989

* indicates a FERC site on that reach

IDNUM	STREAM NAME	STARTING FROM	GOING TO	TRIBUTARY TO	COUNTY	ST PR CA	LENGTH(Mi) TOT PROT
* 500	CISPUS R	MOUTH	QUARTZ CR	COWLITZ R	LEWIS	WA UN	4.1 0.0
502	CISPUS R	QUARTZ CR	CRYSTAL CR	COWLITZ R	LEWIS	WA UN	1.0 0.0
* 504	CISPUS R	CRYSTAL CR	IRON CR	COWLITZ R	LEWIS	WA UN	3.2 0.0
508	CISPUS R	IRON CR	GREENHORN CR	COWLITZ R	LEWIS	WA BN	7.3 7.3
510	CISPUS R	GREENHORN CR	MCCOY CR	COWLITZ R	LEWIS	WA BN	2.0 2.0
518	CISPUS R	MCCOY CR	CISPUS R, N FK	COWLITZ R	LEWIS	WA BN	2.7 2.7
* 520	CISPUS R	CISPUS R, N FK	E CANYON CR	COWLITZ R	LEWIS	WA BN	9.6 9.6
* 522	CISPUS R	E CANYON CR	ADAMS CR	COWLITZ R	SKAMANIA	WA BN	3.1 3.1
524	CISPUS R	ADAMS CR	CAT CR	COWLITZ R	SKAMANIA	WA BN	2.3 2.3
528	CISPUS R	CAT CR	CISPUS R, MUDDY FK	COWLITZ R	SKAMANIA	WA BN	3.2 3.2
528	CISPUS R	CISPUS R, MUDDY FK	WALPUT CR	COWLITZ R	LEWIS	WA BF	6.8 6.8
532	CISPUS R	WALPUT CR	NANNIE CR	COWLITZ R	LEWIS	WA UN	0.6 0.0
534	CISPUS R	NANNIE CR	GOAT CR	COWLITZ R	LEWIS	WA UN	1.1 0.0
538	CISPUS R	GOAT CR	HEADWATERS	COWLITZ R	LEWIS	WA UN	3.4 0.0

SEARCH SELECTIONS:

Reach Name: CISPUS R
Reach #

State: Trib of
County:

Basin:

-- PROTECTED SUMMARY --

CATEGORY	CONSTRAINTS			Protected	Reaches	Miles
	None	Federal	State			
Anadromous Fish Only	0	0	0	7	30	
Resident Fish Only	0	0	0	14	50	
Wildlife Only	0	0	0	50	60	
Res Fish & Wildlife	30	7	0	FERC data for 4 sites		
Anad & Res Fish & Wild	0	0	0	Affected Unaffected		
Anad & (Fish or Wild)	0	0	0	# of Sites	2	2
Unprotected	13	0	0	Cap(MW)	48.0	28.4
				Prod(AMW)	39.0	21.3

Record # -- 1 UNAFFECTED
 Project Name : CISPUS RIVER NO 4 FERC # 10587-00
 Reach Name : CISPUS R Status :PP-GTD
 Trib of COWLITZ R Protected Category :U
 Reach # 1708000400100.00 Capacity (MW) : 15.3
 State : WA Production (AMWH) : 11.5

Record # -- 2 UNAFFECTED
 Project Name : CISPUS RIVER NO 3 FERC # 10588-00
 Reach Name : CISPUS R Status :PP-GTD
 Trib of COWLITZ R Protected Category :U
 Reach # 1708000400301.00 Capacity (MW) : 13.1
 State : WA Production (AMWH) : 9.8

Record # -- 3 AFFECTED
 Project Name : CISPUS RIVER NO. 1 FERC # 10575-00
 Reach Name : CISPUS R Status :PP-GTD
 Trib of COWLITZ R Protected Category :B
 Reach # 17080004001400.00 Capacity (MW) : 24.7
 State : WA Production (AMWH) : 20.1

Record # -- 4 AFFECTED
 Project Name : CISPUS RIVER NO 2 FERC # 10576-00
 Reach Name : CISPUS R Status :PP-GTD
 Trib of COWLITZ R Protected Category :B
 Reach # 17080004001200.00 Capacity (MW) : 23.3
 State : WA Production (AMWH) : 18.9

State : Basin :WIND

STREAM NAME	TRIBUTARY TO	TOT_LEN	AVE_WID	SPECIES	SPP_MILE
BEAR CR	WIND R	6.30		***** NO SPECIES PRESENT *****	

BIG HOLLOW CR	DRY CR	4.10	8	STHS	2.50

CEDAR CR	PANTHER CR	6.50	8	STHS	3.00

COLD CR	WIND R	1.60	8	COHO	1.60

CRATER CR	TROUT CR	3.20	13	CHSP	2.00
CRATER CR	TROUT CR	3.20	13	COHO	2.00
CRATER CR	TROUT CR	3.20	13	STHS	2.00

DRY CR	WIND R	8.70	8	STHS	8.70

EIGHTMILE CR	PANTHER CR	4.10	8	STHS	2.30

FALLS CR	WIND R	9.80	20	STHS	1.80

JIMMY CR	PANTHER CR	2.20	8	STHS	1.20

LAYOUT CR	TROUT CR	3.20	8	CHSP	2.80
LAYOUT CR	TROUT CR	3.20	8	COHO	2.80
LAYOUT CR	TROUT CR	3.20	8	STHS	2.80

LITTLE WIND R	WIND R	6.40		STHS	3.00

MARTHA CR	TROUT CR	3.20	10	CHSP	2.40
MARTHA CR	TROUT CR	3.20	10	COHO	2.40
MARTHA CR	TROUT CR	3.20	10	STHS	2.40

State : Basin :WIND

STREAM NAME	TRIBUTARY TO	TOT_LEN	AVE_WID	SPECIES	SPP_MILE
-------------	--------------	---------	---------	---------	----------

MOUSE CR	PANTHER CR	4.10	8	STHS	1.80
----------	------------	------	---	------	------

NINEMILE CR	WIND R	4.00		***** NO SPECIES PRESENT *****	
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OLDMAN CR	WIND R	2.50	8	STHS	2.50
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PANTHER CR	WIND R	13.60	24	CHSP	11.50
PANTHER CR	WIND R	13.60	24	STHS	11.50

PARADISE CR	WIND R	4.00	8	CHSP	3.00
PARADISE CR	WIND R	4.00	8	STHS	3.00

PLANTING CR	TROUT CR	1.80	8	COHO	1.50
PLANTING CR	TROUT CR	1.80	8	STHS	1.50

TENMILE CR	PANTHER CR	3.50	8	STHS	2.50
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TRAPPER CR	WIND R	5.40	14	CHSP	4.10
TRAPPER CR	WIND R	5.40	14	STHS	4.10

TROUT CR	WIND R	23.00	30	CHSP	23.00
TROUT CR	WIND R	23.00	30	COHO	23.00
TROUT CR	WIND R	23.00	30	STHS	23.00

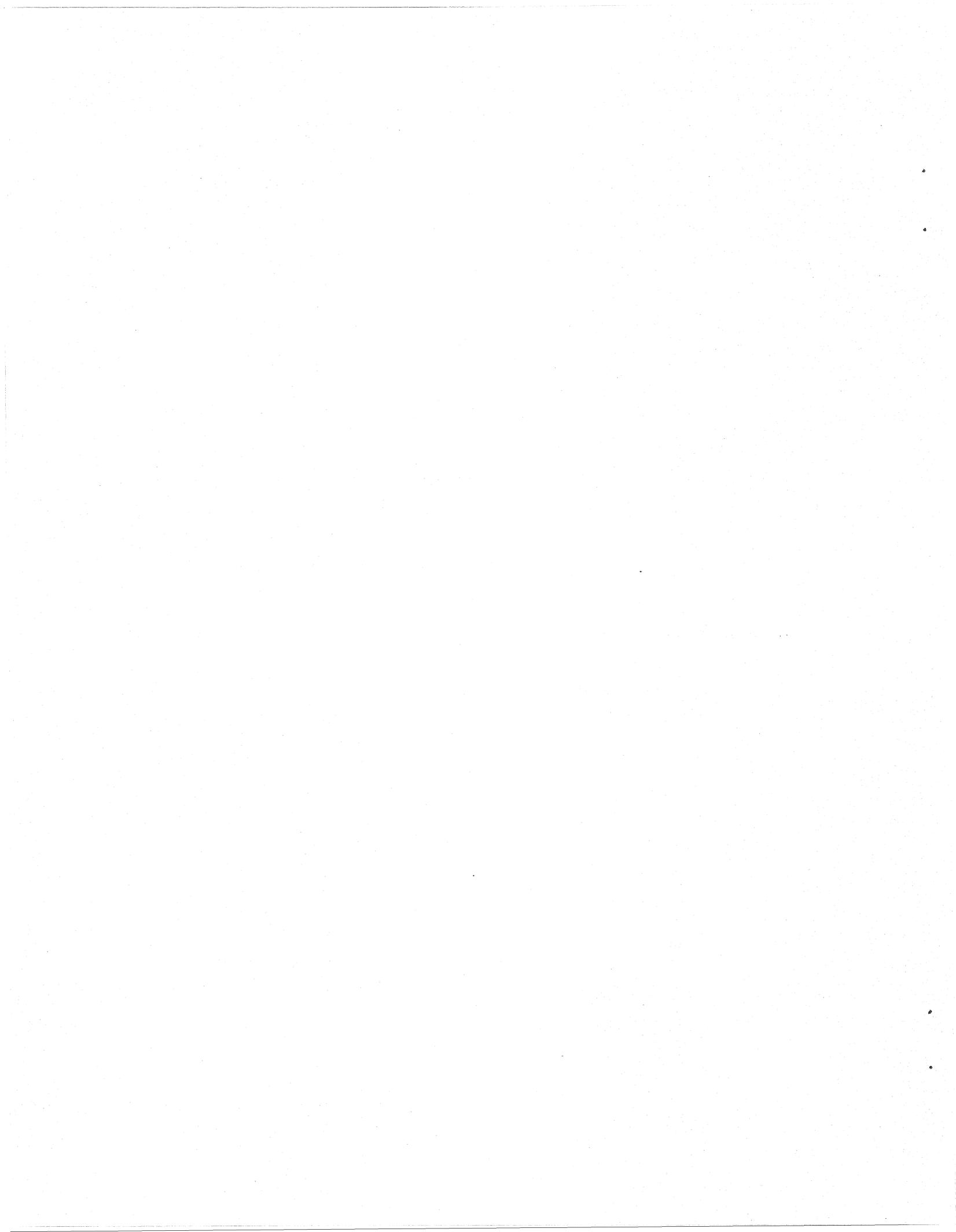
TROUT CR, E FK	TROUT CR	2.40	8	CHSP	2.40
TROUT CR, E FK	TROUT CR	2.40	8	COHO	2.40
TROUT CR, E FK	TROUT CR	2.40	8	STHS	2.40

State : Basin :WIND

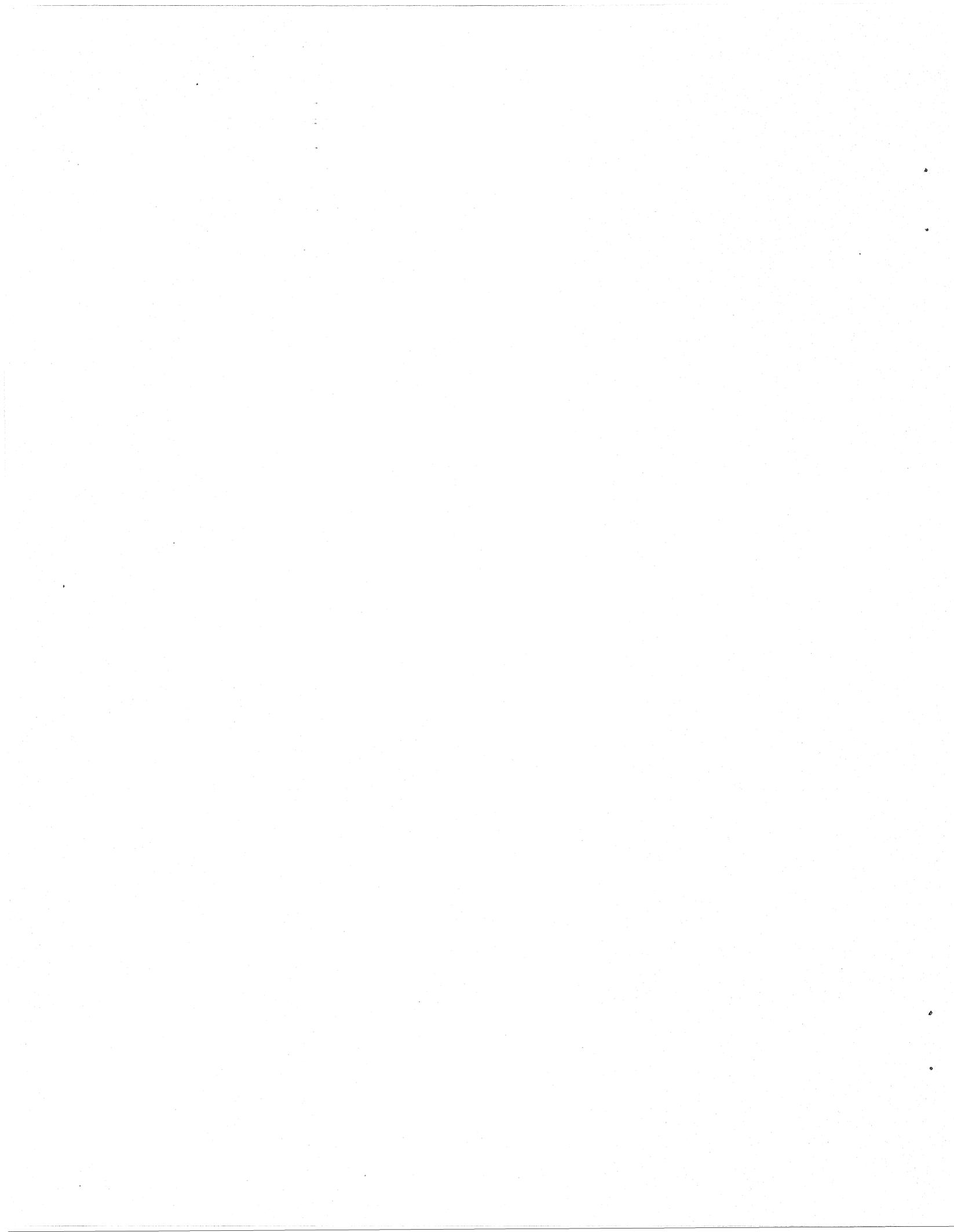
STREAM NAME	TRIBUTARY TO	TOT_LEN	AVE_WID	SPECIES	SPP_MILE
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TWELVEMILE CR	PANTHER CR	2.40	8	CHSP	1.80
TWELVEMILE CR	PANTHER CR	2.40	8	STHS	1.80

WIND R	COLUMBIA R	30.80	41	CHSP	30.80
WIND R	COLUMBIA R	30.80	41	CHFA	30.80
WIND R	COLUMBIA R	30.80	47	COHO	21.80
WIND R	COLUMBIA R	30.80	41	STHS	30.80
WIND R	COLUMBIA R	30.80	41	STHW	30.80



APPENDIX G



APPENDIX G: TECHNICAL DOCUMENTATION FOR MENU PROGRAM

This section provides a brief description of the datasets comprising the Menu Program. The size, structure, and names of these datasets may change in order to accommodate newly obtained data.

<u>DATASET</u>	<u>DESCRIPTION</u>
BASIN.DMS	Basin names and basin codes (as defined by NPPC)
CORPDUMP.DMS	Army Corps of Engineers FERC data
COUNTY.DMS	State county names and county codes (FIPS codes)
FISH.DMS	Anadromous species presence/absence data
FISHNAMES.DMS	Species codes & common names used by IDFG
IDFISH.DMS	Idaho resident fish data
IDWILD.DMS	Idaho wildlife data
LOBOUN.DMS	List of all stream names used in database
MAIN.DMS	EPA river reach data
MAP.DMS	USGS map names and map numbers
MONTANA.DMS	Original state stream data from MDFWP
MTFISH.DMS	Montana resident fish data
MTWILD.DMS	Montana wildlife data
OREGON.DMS	Original state stream data from ODFW
ORFISH.DMS	Oregon resident fish data
ORWILD.DMS	Oregon wildlife data
RVAL.DMS	Rivers Study resource category values
SPECIES.DMS	Species codes and common names used by ODFW
UPBOUN.DMS	List of all stream names used in database
WAFISH.DMS	Washington resident fish data
WAWILD.DMS	Washington wildlife data
WILDHABS.DMS	Habitat descriptions and codes used by WDG
WILDNAMES.DMS	Species codes and common names used by WDG/IDFG

DATASET STRUCTURE

BASIN.DMS
101 records

List of subbasins within the 4 states. Generally follows EPA hydrologic units. Number of subbasins and names of subbasins may change as is required to meet changing needs.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	20	Name of subbasin (defined by NPPC)
BASIN_CODE	INTEGER	2	Arbitrarily numbered code
STATE	TEXT	2	State basin is in (array of 4)
ANADIN	LOGICAL	1	T/F indicates presence of anad fish inbasin
INBASIN	LOGICAL	1	T/F indicates presence in or out of CRB
ABOVEBONN	LOGICAL	1	T/F indicates basin above Bonneville Dam

CORPDUMP.DMS
4380 records

Contains FERC data and all site specific data for those hydrodevelopment sites under Federal Energy Regulatory Commission jurisdiction. From Army Corps of Engineers database. (Below is a selected group of attributes pertinent to the Menu Program - there are over 400 attributes in this dataset.)

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	28	Project name
FERCID	TEXT	8	FERC project number
STATE1	TEXT	2	Primary state location
COUNTY1	TEXT	20	Primary county location
NEAR_TOWN_NAME	TEXT	20	Town nearest the site
STREAM1	TEXT	28	Principle stream
LATCS	TEXT	10	Latitude of dam or diversion
LONCS	TEXT	10	Longitude of dam or diversion
APP_DEV_NAME	TEXT	28	FERC applicant/developer
APP_DEV_CONTACT	TEXT	28	FERC applicant/developer contact
APP_DEV_TEL	TEXT	12	FERC applicant/developer phone number
APP_DEV_CODE	TEXT	2	FERC applicant/developer code
FERCSTAT	TEXT	6	Current project status
EFF_STAT_DATE	TEXT	8	Date of current status
DAM_STATUS	TEXT	2	Status of dam or diversion structure
STAT_PWR_FACIL	TEXT	2	Status of new power facilities
TLINE_OWNER	TEXT	28	Owner of transmission line
PWR_PURCHASER	TEXT	28	Power purchaser
INP_CAP_EXISTS	DEC F8.1	10	Existing installed capacity (kW) INPUT
INP_CAP_POT	DEC F8.1	10	New potential capacity (kW) INPUT
INP_CAP_TOTAL	DEC F8.1	10	Total capacity (kW) INPUT
C_CAP_EXISTS	DEC F8.1	10	Existing capacity (kW) COMPUTED
C_CAP_POT	DEC F8.1	10	New potential capacity (kW) COMPUTED
C_CAP_TOTAL	DEC F8.1	10	Total capacity (kW) COMPUTED
INP_ANNU_EXIST	DEC F8.1	10	Existing avg annual energy (MWh) INPUT
INP_ANNU_POT	DEC F8.1	10	Potential avg ann energy (MWh) INPUT
INP_ANNU_TOTAL	DEC F8.1	10	Total avg annual energy (MWh) INPUT
C_ANNU_EXIST	DEC F8.1	10	Existing avg annual energy (MWh) COMP
C_ANNU_POT	DEC F8.1	10	Potential avg ann energy (MWh) COMP
C_ANNU_TOTAL	DEC F8.1	10	Total avg ann energy (MWh) COMPUTED
RRN1	TEXT	16	Reach where powerhouse is located
RRN2	TEXT	16	Reach for 1st dam/diversion
RRN3	TEXT	16	Reach for 2nd dam/diversion
RRN4	TEXT	16	Reach for 3rd dam/diversion
PROT1	TEXT	2	Protected status for RRN1
PROT2	TEXT	2	Protected status for RRN2
PROT3	TEXT	2	Protected status for RRN3
PROT4	TEXT	2	Protected status for RRN4
INBASIN	LOGICAL	1	T/F presence of site in or out of CRB

COUNTY.DMS
175 records

List of counties within the 4 states and their corresponding FIPS code.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	20	County name
COUNTY_CODE	TEXT	5	FIPS code

FISH.DMS
28085 records

Contains anadromous species mileages and percentages for each reach. Species include :

Spring Chinook	Summer Steelhead
Summer Chinook	Winter Steelhead
Fall Chinook	Chum
Coho	Sockeye

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
REACH_NO	TEXT	16	River reach number
NUMSPP	INTEGER	1	Number of species present in reach
AM	DEC F2.1	4	Total anadromous mileage of reach
SPP	DEC F1.2	4	% anad presence in reach (array of 8)
MILE	DEC F2.1	4	Anad mileage, by species (array of 8)
REF	TEXT	2	References source of data (array of 10)
LENGTH	DEC F2.1	4	Length of reach

FISHNAMES.DMS
31 records

List of species codes and common names used by Idaho Department of Fish and Game.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
SPP_CODE	TEXT	3	IDFG species code
SPP_NAME	TEXT	30	Common species name

IDFISH.DMS
4635 records

Contains detailed resident fish data and fish habitat information gathered during the Rivers Study from IDFG.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
RRN	TEXT	16	EPA river reach number
SPP	TEXT	3	IDFG species code
HAB	TEXT	1	Quality of habitat for species in question
CON	TEXT	1	Level of species concern
HVAL	TEXT	1	Habitat/species matrix value
ABN	TEXT	1	Species abundance
USE	TEXT	1	Angler use
SVAL	TEXT	1	Abundance/angler use matrix value
RATING	TEXT	1	Overall stream value
FCOMM	TEXT	30	Comments

IDWILD.DMS
4634 records

Contains detailed wildlife data and wildlife habitat information gathered during the Rivers Study by IDFG.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
RRN	TEXT	16	EPA river reach number
SPPNDX	TEXT	1	Species rating index
MAM_SPP	TEXT	5	IDFG species codes (array of 12)
AV_SPP	TEXT	5	IDFG species codes (array of 12)
HERP_SPP	TEXT	5	IDFG species code (array of 5)
EAGLE_USE	TEXT	2	Bald eagle use codes
GAME_USE	TEXT	2	Big game use codes
SPPCOM	TEXT	60	Species comments
COV_TYPE	TEXT	40	Cover type
COVSPP	TEXT	60	IDFG plant species abbreviations
COVCOM	TEXT	60	Stream cover comments
COVRATE	TEXT	1	Cover rating
LEGAL	TEXT	1	Legal access to stream
PHYSACC	TEXT	1	Physical access to stream
ACCRATE	TEXT	1	Access rating
USERATE	TEXT	1	User rating
INSTCONST	TEXT	3	Institutional constraints
RECRATE	TEXT	1	Recreational use
STRATE	TEXT	1	Overall stream rating
WCOMM	TEXT	60	Wildlife comments

LOBOUN.DMS/UPBOUN.DMS

8476 records

Identical datasets listing every stream/lake/reservoir/etc., name used in the database. Due to software limitations, duplicate datasets are required to perform the upper and lower stream boundaries function. (the FROM: and TO: elements of a stream description)

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	30	Stream name
NAME_CODE	INTEGER	5	Corresponding code

MAIN.DMS

33346 records

Contains EPA river reach information, stream location information and physical stream attributes.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
REACH_NO	TEXT	16	EPA river reach number
STR_NO	INTEGER	5	Number assigned to stream (not reach)
NEW	DEC F5.2	8	Number indicating sequence order
NAME	TEXT	30	Stream name
TN	TEXT	30	Name of stream it is tributary to
STATE	TEXT	2	State the majority of the reach lies in
LEVEL	INTEGER	1	Stream level
TYPE	TEXT	1	Reach type category
REACHKEY	TEXT	1	Status of reach according to EPA update
STREAM_KEY	TEXT	1	Position of a reach within the stream
RFLAG	LOGICAL	1	T/F transport or non-transport
OWFLAG	LOGICAL	1	T/F open-water type reach
TFLAG	LOGICAL	1	T/F if reach is a terminal type
SFLAG	LOGICAL	1	T/F if reach is a start type
ANADFLAG	LOGICAL	1	T/F if anadromous fish are present
BLOCKED	LOGICAL	1	T/F if reach is blocked
DAMS	INTEGER	1	Number of dams on reach
WIDTH	INTEGER	4	Width of reach in feet
LENGTH	DEC F2.1	4	Length of reach in miles
PROT_LEN	DEC F3.1	4	Protected length of reach in miles
DOWNLINK	TEXT	16	Reach number of the downstream reach
UPLINK	TEXT	16	RRN of upstream reaches (array of 2)
DOWNLAT	DEC F2.4	7	Downstream latitude
DOWNLON	DEC F3.4	8	Downstream longitude
MAPNO	INTEGER	3	Code for USGS map name
INBASIN	LOGICAL	1	T/F if reach is within CRB
INSTATE	LOGICAL	1	T/F if within 4 state area
MISC1	INTEGER	1	Not in use at present
MISC2	INTEGER	1	Not in use at present
BL_REACH	LOGICAL	1	T/F if reach is above a blockage
BL_STATUS	LOGICAL	1	Not in use at present
MISC5	INTEGER	1	Not in use at present

MAIN.DMS (con't)

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
ADDSPLIT	TEXT	1	Not in use at present
PROT	TEXT	1	Protected area category
FERCSITE	LOGICAL	1	T/F if a FERC site is present
PROTA	LOGICAL	1	Not in use at present
MISC10	TEXT	1	Not in use at present
DAMKEY	TEXT	1	Not in use at present
DOWNRK	TEXT	1	Reach key of downstream reach
DOWNTY	TEXT	1	Reach type of the downstream reach
DOWNLEV	INTEGER	1	Stream level of the downstream reach
STCO	TEXT	5	County where stream flows (array of 5)
OWNAME	INTEGER	5	Code for open-water names
LOBOUN	INTEGER	5	Lower stream boundary confluence
UPBOUN1	INTEGER	5	Upper stream boundary confluence
UPBOUN2	INTEGER	5	Upper stream boundary confluence
BNAME	INTEGER	2	Code for the subbasin the reach is in
BL_TYPE	INTEGER	3	Code for blockage type
REF	TEXT	2	Array of 10; source of various data
PROT_PER	DEC F1.2	4	Percentage of reach that is protected
ID_NUM	INTEGER	5	Individual identification number

MAP.DMS
250 records

List of USGS map names and corresponding map numbers.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	30	USGS map name
NLAT	DEC F2.4	7	North latitude of map boundary
SLAT	DEC F2.4	7	South latitude of map boundary
WLON	DEC F3.4	8	West longitude of map boundary
ELON	DEC F3.4	8	East longitude of map boundary
MAPCODE	INTEGER	3	Map code

MONTANA.DMS
7437 records

Contains original stream data as supplied by Montana Department of Fish, Wildlife, and Parks. Used in program only as a means of cross-reference between EPA river reach numbers and the state's river reach codes.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	30	Stream name
RRN	TEXT	16	EPA river reach number
LEV	INTEGER	1	Stream level

MONTANA.DMS (con't)

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
TYPE	TEXT	1	Stream type category
RK	TEXT	1	Status of reach according to EPA update
REGION	TEXT	1	MDFWP region code
STN1	TEXT	6	First basin code for EPA cross-reference
SEG1	TEXT	3	First segment code for EPA cross-ref
STN2	TEXT	6	Second basin code for EPA cross-ref
SEG2	TEXT	3	Second segment code for EPA cross-ref
PER1	DEC F1.2	4	Percent of first X-ref state code
PER2	DEC F1.2	4	Percent of second X-ref state code

MTFISH.DMS

90 records

Contains resident fish species information for each reach as provided in its original form from MDFWP as a result of the Rivers Study.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
HOLREA	TEXT	3	Holton reach serial number
NAME	TEXT	30	Stream name
CODE	TEXT	6	MDFWP water code for the reach
SEGMENT	TEXT	3	MDFWP segment number for the reach
KM	INTEGER	4	Stream length in km
LENGTH	DEC F5.2	5	Stream length in miles
RRN	TEXT	16	EPA river reach number
LOBOUN	TEXT	30	Name of downstream confluence
LOTRLOC	TEXT	14	Lower township/range location
UPBOUN	TEXT	30	Name of upstream confluence
UPTRLOC	TEXT	14	Upper township/range location
TN	TEXT	30	Name of downstream reach (Trib Name)
USFS	TEXT	4	USFS region number
COUNTY	TEXT	3	MDFWP state county code
REASON1	TEXT	30	List of resident fish present in reach
REASON2	TEXT	30	List of resident fish present in reach

MTWILD.DMS
163 records

Contains wildlife species presence information as provided in its original form from MDFWP as a result of the Rivers Study.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	30	Stream name
CODE	TEXT	6	MDFWP water code for the reach
REGION	TEXT	1	MDFWP region number
TN	TEXT	30	Name of downstream reach (Trib Name)
AREA	TEXT	3	MDFWP area code
LOBOUN	TEXT	30	Name of downstream confluence
UPBOUN	TEXT	30	Name of upstream confluence
KM	INTEGER	4	Stream length in km
LENGTH	DEC F5.2	5	Stream length in miles
TRLOC	TEXT	12	Township/range location
REASON1	TEXT	30	List of wildlife species present on reach
REASON2	TEXT	30	List of wildlife species present on reach

OREGON.DMS
14627 records

Contains original state stream data from ODFW. Used in Menu Program only as a means of cross-reference between EPA river reach numbers and state river codes.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	30	Stream name
RRN	TEXT	16	EPA river reach number
LEV	INTEGER	1	Stream level
TY	TEXT	1	Stream type category
RK	TEXT	1	Status of reach according to EPA update
STFISH	TEXT	25	Oregon stream code for the reach
STWILD	TEXT	25	Oregon stream code for the reach

ORFISH.DMS
14348 records

Contains detailed resident fish data and fish habitat information in its original form as supplied by ODFW as a result of the Rivers Study.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	30	Stream name
TRIBOF	TEXT	30	Name of downstream reach (Trib Name)
STREAM_NO	TEXT	25	Oregon state river code
INTERCEPT	TEXT	4	Not used in program

ORFISH.DMS (con't)

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
LENGTH	DEC F3.1	5	Stream length in miles
ZONE	TEXT	1	Physical stream desc (gradient, etc.)
LUSE	TEXT	1	Land use adjacent to stream
DIV	TEXT	1	Habitat diversity (pool/riffle, cover, etc.)
FLOW	TEXT	1	Flow regulation
TEMP	TEXT	1	Water temperature
RIP	TEXT	1	Riparian cover
ERO	TEXT	1	Streambank erosion
SPP	TEXT	3	Major resident fish species
SPEC	TEXT	1	Level of species concern
HAB	TEXT	1	Habitat productivity
EXC1	TEXT	1	Flag for migration corridor
EXC2	TEXT	1	Flag for rare species
EXC3	TEXT	1	Flag for research site
EXC4	TEXT	1	Flag for potential exception
EXC5	TEXT	1	Flag for stocked stream
EXC6	TEXT	1	Flag for species diversity
SVAL	INTEGER	1	Species/habitat matrix value
USE	TEXT	1	Recreational use
ABN	TEXT	1	Species abundance
EXC	TEXT	1	Use/abundance exceptions
UVAL	INTEGER	1	Use/abundance matrix value
STCLS	INTEGER	1	Stream value class
DOC	TEXT	1	Data documentation code
COM	TEXT	30	Comments

ORWILD.DMS

14508 records

Contains wildlife data and wildlife habitat information as provided by ODFW as a result of the Rivers Study.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
NAME	TEXT	30	Stream name
TRIBOF	TEXT	30	Name of downstream reach (Trib Name)
STREAM_NO	TEXT	25	Oregon state river code
INTERCEPT	TEXT	4	Not used in program
LENGTH	DEC F3.1	5	Stream length in miles
LAND_USE	TEXT	1	Land use adjacent to stream
DIVERSITY	TEXT	1	Species/habitat diversity
COMM	TEXT	1	Communities of special concern
SHAB	TEXT	1	Seasonal habitats of importance
DIS	TEXT	1	Level of man-caused disturbance
MAJOR_SPP	TEXT	3	Major wildlife species
SPEC	TEXT	1	Level of species concern
HABPROD	TEXT	1	Habitat productivity

ORWILD.DMS (con't)

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
MIGR	TEXT	1	Flag for migration corridor
RARE	TEXT	1	Flag for rare species
RES	TEXT	1	Flag for research site
POT	TEXT	1	Flag for potential exception
SPDV	TEXT	1	Flag for species diversity
SH_VAL	TEXT	1	Species/habitat matrix value
RECUSE	TEXT	1	Recreational use
ABN	TEXT	1	Species abundance
USE_EXC	TEXT	1	Use/abundance exceptions
UA_VAL	INTEGER	1	Use/abundance matrix value
VALUE_CLASS	INTEGER	1	Stream value class
DOC	TEXT	1	Data documentation code
COMMENTS	TEXT	30	Comments

RVAL.DMS
31248 records

Contains the final overall stream values for each of the 5 resource categories evaluated in the Pacific Northwest Rivers Study. Also contains the final value rating from the anadromous study.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
RRN	TEXT	16	EPA river reach number
ST	TEXT	2	State abbreviation
FISH	INTEGER	1	Resident fish resource value
WILD	INTEGER	1	Wildlife resource value
CULT	INTEGER	1	Cultural resource value
NATU	INTEGER	1	Natural features resource value
RECR	INTEGER	1	Recreational resource value
ANAD	INTEGER	1	Anadromous fish resource value
PROT	LOGICAL	1	T/F if reach is protected
INST	INTEGER	1	Institutional constraints
FSPP	TEXT	3	Major resident fish species present
FTE	LOGICAL	1	T/F for threatened/endangered species
FCH	LOGICAL	1	T/F for fish critical habitat
WSPP	TEXT	3	Major wildlife species present
WTE	LOGICAL	1	T/F for threatened/endangered wildlife
WCH	LOGICAL	1	T/F for wildlife critical habitat

SPECIES.DMS
100 records

List of species codes and species common names used by ODFW.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
SPPCODE	TEXT	3	Species code as used by ODFW
SPECIES	TEXT	30	Species common name

WAFISH.DMS
2170 records

Contains detailed resident fish data and fish habitat information as supplied by WDG as a result of the Rivers Study.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
RRN	TEXT	16	EPA river reach number
WRIA	TEXT	14	Water Resource Inventory Area code
NAME	TEXT	30	Stream name
HSPP	TEXT	3	Habitat species codes (array of 5)
HAB	TEXT	1	Habitat quality
CON	TEXT	1	Habitat level of concern
HVAL	TEXT	1	Overall habitat value
SPSPP	TEXT	3	Key sport species (array of 5)
ABN	TEXT	1	Sport species abundance
USE	TEXT	1	Angler use
SPVAL	TEXT	1	Overall sport value
OVAL	TEXT	1	Overall reach value

WAWILD.DMS
2167 records

Contains detailed wildlife data and wildlife habitat information as provided by WDG as a result of the Rivers Study.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
RRN	TEXT	16	EPA river reach number
WRIA	TEXT	14	Water Resource Inventory Area code
NAME	TEXT	30	Stream name
HVAL	TEXT	1	Overall habitat value
HSPP	TEXT	2	Habitat species codes (array of 8)
SVAL	TEXT	1	Overall species value
SPP	TEXT	6	Key species (array of 5)
RVAL	TEXT	1	Recreational value
OVAL	TEXT	1	Overall value
HCOMM	TEXT	80	Comment
REF	TEXT	5	Reference data sources (array of 5)

WAFISHCODES.DMS

16 records

List of resident fish species codes and their common names as used by WDG.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
CODE	TEXT	3	Species code
MEANING	TEXT	30	Species common name

WILDHABS.DMS

61 records

List of wildlife habitat codes and their meanings as used by WDG.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
CODE	TEXT	2	Habitat code
MEANING	TEXT	33	Habitat description

WILDNAMES.DMS

560 records

Lists wildlife species codes and their common names as used by IDFG and WDG.

<u>FIELD NAME</u>	<u>TYPE</u>	<u>LEN</u>	<u>DESCRIPTION</u>
CODE	TEXT	5	Species code
MEANING	TEXT	33	Species common name

DATABASE STRUCTURE

Database FISHPARR.DMB is currently located in directory [JD.WORKING] and is comprised of the following datasets, with joins as listed.

MAIN.DMS	BASIN.DMS	OREGON.DMS
FISH.DMS	COUNTY.DMS	MONTANA.DMS
LOBOUN.DMS	MAP.DMS	MTFISH.DMS
UPBOUN.DMS	RVAL.DMS	MTWILD.DMS
IDFISH.DMS	WAFISH.DMS	FISHNAMES.DMS
IDWILD.DMS	WAWILD.DMS	

JOIN ONE	MAIN	TO ONE FISH	REACH_NO	TO RRN
JOIN MANY	MAIN	TO ONE UPBOUN	UPBOUN1	TO NAME_CODE
JOIN MANY	MAIN	TO ONE LOBOUN	LOBOUN	TO NAME_CODE
JOIN MANY	MAIN	TO ONE BASIN	BNAME	TO BASIN_CODE
JOIN MANY	MAIN	TO ONE MAP	MAPNO	TO MAPCODE
JOIN MANY	MAIN	TO ONE COUNTY	STCO	TO COUNTY_CODE
JOIN ONE	MAIN	TO ONE RVAL	REACH_NO	TO RRN
JOIN ONE	MAIN	TO ONE OREGON	REACH_NO	TO RRN
JOIN ONE	MAIN	TO ONE MONTANA	REACH_NO	TO RRN
JOIN ONE	MAIN	TO ONE IDFISH	RRN	TO RRN
JOIN ONE	MAIN	TO ONE IDWILD	RRN	TO RRN
JOIN ONE	MAIN	TO ONE WAFISH	RRN	TO RRN
JOIN ONE	MAIN	TO ONE WAWILD	RRN	TO RRN
JOIN ONE	MONTANA	TO ONE MTFISH	STN1	TO CODE
JOIN ONE	MONTANA	TO ONE MTWILD	STN1	TO CODE
JOIN ONE	IDFISH	TO ONE FISHNAMES	SPECIES	TO SPP_CODE

Because of certain software limitations, the remaining datasets cannot be included in FISHPARR.DMB and therefore are opened separately. Since join statements are not allowed across databases, map commands used in the Program between related records in different databases must include source/target datasets and attribute specifications.

CORPDUMP.DMS	[JD.CORPS]
WAFISHCODE.DMS	[JD.WASHING.RS]
WILDNAMES.DMS	[JD.IDAHO.RS]
WILDHABS.DMS	[JD.WASHING.RS]
ORFISH.DMS	[JD.DMS]
ORWILD.DMS	[JD.DMS]
SPECIES.DMS	[JD.WORKING]