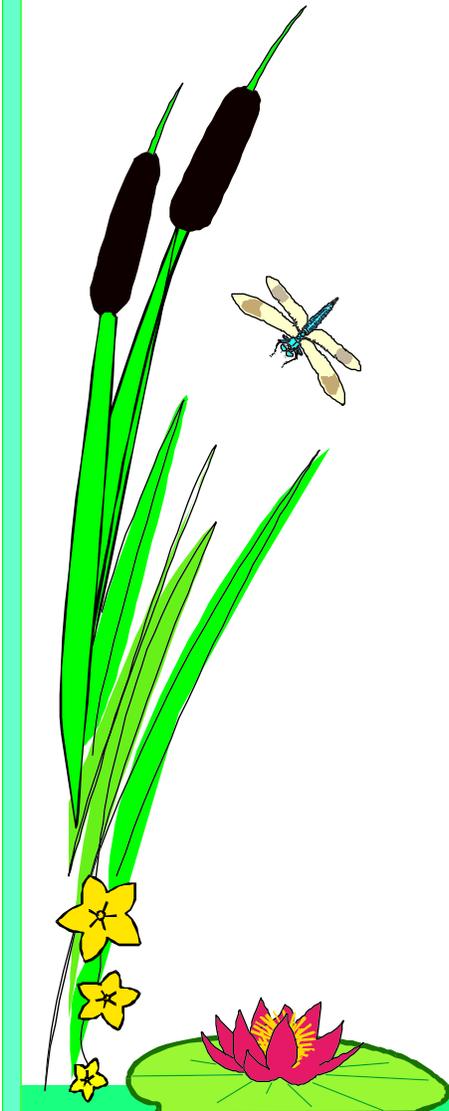


Appendix 4-1 Geographical Information System (GIS) Data and Databases

*This Appendix contains
the following items:*

- *Introduction*
- *Data and Analysis*
- *Documentation,
Management, and
Sharing of Data*
- *Summary*



Introduction

The following has been excerpted from the *Information System, Development and Documentation* (Gravenmier et al. 1996) chapter of the *Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins* (Quigley and Arbelbide 1996b).

Land use planning that is regional in scope requires tools more sophisticated than those typically used for landscape and resource analysis. Traditionally, maps, graphs, charts, and diagrams have been used to analyze and visualize the natural environment. Today, Geographic Information Systems (GISs) provide the tools and techniques that allow regional projects to be accomplished in a highly efficient, integrated, and accurate manner.

A GIS is especially well-suited to dealing with spatial and temporal problems (problems of dimension, space, and time). Without advanced computer technology, software, and trained and experienced individuals, the volume of data collected in support of the Interior Columbia Basin Ecosystem Management Project (ICBEMP) would have been a great burden. GIS provided the means to dynamically model and analyze living systems throughout the Basin in ways that were impractical only a decade ago.

The ICBEMP was the largest interagency database development effort undertaken by the agencies involved, covering more than 144 million acres. A Spatial Analysis Team was established to manage data and support the analytical needs of the ICBEMP. This team was comprised of BLM, Forest Service, and contract personnel who were located in Walla Walla and Spokane Washington; Portland, Oregon; Missoula, Montana; Wenatchee, Washington; and Boise and Coeur d'Alene, Idaho. The interagency group was charged with the collection of available GIS data, capture of new data, and analysis to support the assessment and EISs. The Spatial Analysis Team was also responsible for the documentation and distribution of data to project personnel, federal agencies, tribal governments, the general public, and other interested parties.

Data and Analysis

Over 170 different GIS data layers or themes were compiled or created in support of the ICBEMP Assessment and the development of the Eastside and Upper Columbia River Basin EISs. Table 1 lists the data themes and the scale at which they were collected. The data layers were derived from source maps, photos, or transfer media ranging from 1:12,000 to 1:4,000,000 in scale. Some GIS layers mapped features continuously across the entire project area while others covered discrete areas only (for example, subsample areas). Major data providers included individual administrative units of the Forest Service, BLM, U.S. Fish and Wildlife Service, Environmental Protection Agency, U.S. Geological Survey, U.S. Bureau of Mines, Bonneville Power Administration, universities, state agencies, and non-governmental organizations.

Analysis of data occurred in GIS and in the relational database environment. GIS analysis used two data architectures: vector (lines, polygons, and points) and raster (matrices or grids). Some of the data were created in vector form (such as information captured from a map, like ownership boundaries), while other data were created in raster form. Vector data were sometimes converted to raster data for the analysis process.

Information that was gathered specifically for this project were either scanned or digitized once a manuscript of the data was created. These digital data sets were then attributed and brought into the GIS. Further attribution, error checking, and analysis took place before it was placed into the corporate (master) data structure. These checks included manual inspection against other sources of data and logic checks both within the data set and with other GIS data sets. Errors, inconsistencies, and anomalies were resolved with the help of field specialists or by other means.

In the analysis of the affected environment and environmental consequences for the alternatives, a variety of systems and methods were used to evaluate and analyze the large quantities of existing and derived data. GIS played a key role in tying the Columbia River Basin Successional Model (CRBSUM) vegetative outputs to the management region, ecological reporting units (ERUs), and subwatersheds. Conventional databases were essential to synthesizing, summarizing, and reporting information. Table 2 outlines and briefly describes each of the major databases that were used for analysis. Some of the databases can be spatially referenced to an existing ICBEMP GIS data layer.

Documentation, Management, and Sharing of Data

In a project such as the ICBEMP, where many cooperators shared data obtained from many sources, documentation of data is a necessity. The documentation of data, often referred to as metadata or data about data, is in the process of becoming standardized within the Federal Government. In 1994 Executive Order 12906 gave the Federal Geographic Data Committee (FGDC), currently chaired by the Secretary of Interior, direction to establish the National Spatial Data Infrastructure (NSDI) including the “technology, policies, standards and human resources necessary to acquire, process, store, distribute, and improve utilization of geospatial data.” Part of that order calls for standardized documentation of data. Each agency must use the standard developed by the FGDC (FGDC Content Standard for Digital Geospatial Metadata) to document new data it collects or produces.

At the time initial planning began for the ICBEMP, the FGDC metadata standard was in early draft form. The project adopted the metadata standard previously developed by the Northwest Forest Plan effort. The resulting metadata are generally compatible but less extensive than what is described in the 1994 FGDC standard.

For management of metadata, SPUDD (Spatial Unified Data Dictionary), an Oracle database application, was used. SPUDD was developed by Forest Service and BLM personnel for use in the Northwest Forest Plan effort and was enhanced during this project.

The ICBEMP began to release spatial data and maps to the public and government agencies in November 1994. Unlike previous projects, the data and maps were made available while the project data were being analyzed. A brief policy paper was prepared to provide interested individuals with the data release objectives, the processes for completing requests for data and maps, and cost information. Copies of this policy and the forms for ordering data can be obtained from the project office.

Summary

It must be remembered that the ICBEMP data has been gathered, for the most part, across a large area, for a specific purpose. Much of the data was of poor quality when compared to data that would be collected for a site-specific project at the individual subwatershed level. The expense of gathering data of better quality (that met project level analysis requirements) for the entire project area and aggregating it to the broadscale level was too great to justify both in cost and time with the fixed amount of resources available. Some data were derived from broad general maps, while other data were captured through intensive, large-scale photo interpretation means and high resolution image processing. The importance of using and understanding the metadata to determine the appropriate use of ICBEMP GIS data and databases cannot be overstated. Many of the GIS themes created or collected by the ICBEMP may be used for project level work where no finer resolution data exist. Additional information on data documentation and analysis processes used can be found in Gravenmier et al. (1996).

Table 1. Interior Columbia River Basin Ecosystem Management Project (ICBEMP) Geographic Information System (GIS) Data.

Theme Name	Extent	Scale/Resolution
	AQUATIC GROUP	
Benthic Invertebrates	Omernik regions 9-12, 15	variable
	ATMOSPHERIC GROUP	
Air Pollution–Non-Attainment Areas	Landscape Characterization Area	variable
Air Quality–Lake Monitoring Sites	Landscape Characterization Area	nearest second
Air Quality Monitoring Sites for NADP	Landscape Characterization Area	nearest second
Air Quality Monitoring Sites for NDDN	Landscape Characterization Area	nearest second
Air Quality–Point Source Emissions	Landscape Characterization Area	nearest second
Air Quality–Snowpack Monitoring Sites	Landscape Characterization Area	nearest minute
Air Quality–Source Emissions by County	Landscape Characterization Area	county
Class One Airsheds	Assessment area	1:24k to 1:100,000
Climate–Average Dew Point	Assessment area	2 kilometers
Climate–Average Maximum Temperature	Assessment area	2 kilometers
Climate–Average Minimum Temperature	Assessment area	2 kilometers
Climate–Average Yearly Temperatures	Assessment area	2 kilometers
Climate–Total Solar Radiation	Assessment area	2 kilometers
Climate–Total Yearly Precipitation	Assessment area	2 kilometers
Climate–PRISM Precipitation Data	Landscape Characterization Area	2.5 minutes
	CRBSUM GROUP	
Broadscale Disturbances from CRBSUM for Scenarios/Alts	Landscape Characterization Area	1 kilometer
Carbon Stress Index (Assess. Cur/Hist)	Landscape Characterization Area	2 kilometers
CRBSUM Current Potential Veg. Types (Assessment)	Landscape Characterization Area	1 kilometer
CRBSUM Current Potential Veg Types (EIS)	Assessment area	1 kilometer
CRBSUM Current Vegetation Cover Types (Assessment)	Landscape Characterization Area	1 kilometer
CRBSUM Current Vegetation Cover Types (EIS)	Assessment area	1 kilometer
CRBSUM Current Vegetation Structural Stages (Assessment)	Landscape Characterization Area	1 kilometer
CRBSUM Current Vegetation Structural Stages (EIS)	Assessment area	1 kilometer
CRBSUM Historical Potential Veg Types (Assessment)	Landscape Characterization Area	1 kilometer
CRBSUM Historical Potential Veg Types (EIS)	Assessment area	1 kilometer
CRBSUM Historical Veg. Cover Types (Assessment)	Landscape Characterization Area	1 kilometer
CRBSUM Historical Veg. Cover Types (EIS)	Assessment area	1 kilometer
CRBSUM Historical Veg. Struct. Stages (Assessment)	Landscape Characterization Area	1 kilometer
CRBSUM Historical Veg. Struct. Stages (EIS)	Assessment area	1 kilometer
CRBSUM Simulation (Alts.) Model Assignments	Assessment area	1 kilometer
Future Broadscale Vegetation by Scenario/Alt.–Cover Type	Landscape Characterization Area	1 kilometer
Future Broadscale Vegetation by Scenario/Alt.–Structure	Landscape Characterization Area	1 kilometer
Net Primary Productivity (Ass. Cur/Hist)	Landscape Characterization Area	2 kilometers
Nutrient Avail. Index (Assess. Cur/Hist)	Landscape Characterization Area	2 kilometers
Water Stress Index (Assess. Cur/Hist)	Landscape Characterization Area	2 kilometers

Airports	Assessment area	1:1,000,000
Dams	ID/MT/OR/WA	nearest 10 seconds
Diversions	Assessment area	1:100,000
Railroads	Assessment area	1:1,000,000
Road Density (Predicted)	Landscape Characterization Area	1 kilometer
Roads–Broadscale–1:1M	Western North America	1:1,000,000
Roads–Broadscale–1:2M	Assessment area	1:2,000,000
Roads–Subsample	Assessment area	1:24k to 1:100,000
Scenic Integrity (Assessment Version)	Assessment area	subwatershed
Scenic Integrity (EIS Version)	Assessment area	1 kilometer
Sense of Place	Assessment area	1:500,000
Sense of Place	Three selected areas	1000 acres
Streets (TIGER)	CA/ID/MT/NV/UT/WY & E. OR/WA	1:100,000
Utility Corridors	Eleven Western states	unknown
Utility Corridors–Energy Sources	Eleven Western states	unknown
CULTURAL GROUP		
Census Blockgroups	Socio-Economic Assessment Area	1:100,000
Census Blockgroups	ID/MT/NV/OR/UT/WA/WY/no. CA	1:100,000
Census Tracts	Socio-Economic Assessment Area	1:100,000
Isolated Timber Dependent Areas	Assessment area	1:2,000,000
Populated Places–1:100,000 (polygon)	Socio-Economic Assessment Area	1:100,000
Populated Places DCW–1:1M (polygon)	Assessment area	1:1,000,000
Towns–1:100,000 (point)	Socio-Economic Assessment Area	1:100,000
Towns DCW–1:1,000,000 (point)	Western North America	1:1,000,000
DEMOGRAPHIC GROUP		
Disturbance–Current Fire Regime	Landscape Characterization Area	1 kilometer
Disturbance–Fire History Study Sites	Landscape Characterization Area / Canada	nearest minute
Disturbance–Fire Locations	Landscape Characterization Area	point data
Disturbance–Historic Fire Regime	Landscape Characterization Area	1 kilometer
Disturbance–Weather (Historic)	Landscape Characterization Area	unknown
Rural Population Wildland Interface	Landscape Characterization Area	1 kilometer
Rural Population Wildland Interface Fire Risk	Landscape Characterization Area	1 kilometer
Fisheries Distribution–Current	MT/WA	1:100,000
Fish Hatcheries	Assessment area	point data
FISHERIES GROUP		
Aquatic Assessment Boundary	Assessment area	1:250,000
ICBEMP Assessment Boundary	Assessment area	1:250,000
Columbia River Basin (CRB) Boundary	Assessment area	1:250,000
Columbia River Basin–US Portion	Assessment area	1:100,000
Consultation Watersheds (Section 7 ESA)	ID/OR	1:500,000
Critical Watersheds–Amer Fisheries Soc	OR	unknown
High Priority Watersheds (Section 7 ESA)	Assessment area	1:126,720–1:250k
Inland Native Fish Strategy Bndry (USFS)	Assessment area	1:100,000
Interior Columbia River Basin	Assessment area	1:100,000
Lakes	Assessment area	1:100,000
Lakes 1:100,000–Enhanced	Assessment area	1:200k–1:2,000,000
Lakes and Reservoirs 1:2M–Broadscale	Assessment area	1:2,000,000
Lakes Classified by Water Quality Clusters	Assessment area	1:100k to 1:250,000
PACFISH Boundaries (BLM/USFS Lands)	Assessment area	1:100,000
Pollutant Sources–Water (CERCLA Sites)	Assessment area	1:24,000
Pollutant Sources–Water (NPDES)	Assessment area	1:24,000
Pollutant Sources–Water (RCRA)	Assessment area	1:100,000
HYDROLOGY GROUP		

Table 1. Interior Columbia River Basin Ecosystem Management Project (ICBEMP) Geographic Information System (GIS) Data. (continued)

Theme Name	Extent	Scale/Resolution
Pollutant Sources–Water (TRI)	Assessment area	1:24,000
Priority Watersheds	ID/OR/WA	1:500,000
PACFISH/BULLTROUT/EIS		
River Reach Banks and Water Bodies	Assessment area	1:100,000
River Reach Files Modified for ICBEMP	Assessment area	1:100,000
Rivers–1:1,000,000	Assessment area	1:1,000,000
Rivers–1:2,000,000	Assessment area & west OR/WA	1:2,000,000
Stream Reaches with Habitat Survey Data	Assessment area	1:100,000
Streams at 250k from NMFS	ID/MT/OR/WA	1:250,000
Sub-basins/Watersheds/Subwatersheds (6th Field HUCs)	Landscape Characterization Area	1:100,000
USGS Sub-basins (4th Field HUCs)	Assessment area	1:250,000
Valley Bottom Settings–Subsamples	Subsamples	1:100,000
Water Quality Impairment–Lakes	Assessment area	1:100,000
Water Quality Impairment–Streams	Assessment area	1:100,000
MINERALS/GEOLOGY GROUP		
Bedrock Background Base Metal Content	Landscape Characterization Area	200 meters
Bedrock Fe/Al/Mg Content	Landscape Characterization Area	200 meters
Bedrock Phosphate Content	Landscape Characterization Area	200 meters
Bedrock Potassium Content	Landscape Characterization Area	200 meters
Cascade Volcano Hazards–1 cm/yr Ash Probability	Assessment area except WY/UT	1:2,000,000
Cascade Volcano Hazards–10 cm/yr Ash Probability	Assessment area except WY/UT	1:2,000,000
Cascade Volcano Hazards–1 m/yr Ash Probability	Assessment area except WY/UT	1:2,000,000
Cascade Volcano Hazards–Proximal Hazards	Assessment area	2 kilometers
Horizontal Earthquake Accel. Probability	Landscape Characterization Area	5 kilometers
Low-Temperature Geothermal Sites	Assessment area states except WY	1:24,000
Major Lithology	Landscape Characterization Area	200 meters
Mineral Dep Perm/Fav Areas (MPFA)	Assessment area	1 kilometer
Mineral Deposit Perm/Fav Areas for Phosphate	Landscape Characterization Area	200 meters
Mineral Deposits	Assessment area	1:24k to 1:100,000
Mineral Development Interest Area (MDIA)	Assessment area	1:500,000
Mineral Industry Locator System	Assessment area	1:24k to 1:100,000
Mineral Production Facilities	Assessment area	1:24k to 1:100,000
Mining Claim Density	ID/MT/NV/OR/UT/WA/WY	1:500,000
Mining Related Hazard Potential	Assessment area	1:24k to 1:100,000
NURE Stream Sediment Geochemistry: Part 1	ID/MT	200 meters
NURE Stream Sediment Geochemistry: Part 2	ID/MT/OR	200 meters
NURE Stream Sediment Geochemistry: Part 3	OR/WA	200 meters
Potential Bat Habitat	Landscape Characterization Area	200 meters
Relative Bedrock Calcium Content	Landscape Characterization Area	200 meters
Sand and Gravel Permissive Tracts	Landscape Characterization Area	200 meters
PHYSIOGRAPHIC GROUP		
.5 Km Digital Elevation Model (DEM)	Landscape Characterization Area	500 meters
90 Meter Digital Terrain Model (DTM)	Assessment area	90 meters
Bailey Ecoregions	USA	1:3,500,000

Biophysical Environment–Regional Ecological Reporting Units (Assessment)	Landscape Characterization Area	1 kilometer
Ecological Reporting Units (EIS)	Assessment area	1:100,000
Ecological Reporting Units by Subwatershed (Assessment)	Assessment area	1:100,000
Ecological Reporting Units by Subwatershed (EIS)	Landscape Characterization Area	1:100,000
Franklin/Dyrness Physiographic Provinces	OR/WA	1:4,000,000
Landscape Characterization Boundary	Landscape Characterization Area	1:500,000
Omernik Ecoregions	Assessment area	1:2,500,000
Photo Interpretation Subsample Areas	Landscape Characterization Area	1:24,000
Soil Susceptibility to Disturbance Stress	CA/ID/MT/NV/OR/UT/WA/WY	1:250,000
Subsample Boundaries	Assessment area	1:100,000
Subsections	Landscape Characterization Area	1:500,000
POLITICAL GROUP		
BLM Administrative Unit Boundaries	Assessment area	1:500,000
BLM Planning Units	ID/OR/WA	1:1,000,000
County Boundaries–1:100,000	CA/ID/MT/NV/OR/UT/WA/WY	1:100,000
Counties–Economic Attributes (Assess)	Socio-Economic Assessment Area	county
Counties–Economic Attributes (EIS Ver.)	Socio-Economic Assessment Area	county
Eastside and Upper Columbia EIS Boundary	Assessment area	1:100,000
Eastside EIS Boundary	Assessment area	1:100,000
Indian Reservations	Landscape Characterization Area	1:2,000,000
Management Area Categories	ID/MT/NV/OR/UT/WA/WY	1:24k to 1:1,000,000
Management Regions / Classes (EIS)	Assessment area	1 kilometer
National Forest Boundaries	Landscape Characterization Area	1:100,000
Natural Areas	Assessment area	1:24k to 1:500,000
Ownership	CA/ID/NV/OR/UT/WA/WY	1:100,000
Ownership	MT	1:126,720
Provincial Level Planning Bdys–FEMAT	CA/OR/WA	1:250,000
Range (Grazing) Allotments	ID/MT/NV/OR/UT/WA/WY	1:24k to 1:126,720
RARE II and WSA (USFS/BLM unroaded)	Assessment area	1:500,000
Recreation Opportunity Spectrum (ROS)	ID/MT/NV/OR/UT/WA/WY	1:24k to 1:250,000
State Boundaries	Assessment area	1:100,000
State Parks	Assessment area	1:2,000,000
Tribal Areas of Interest	Assessment area	1:1,000,000
Tribal Ceded Land	Assessment area	1:1,000,000
Tribal Court of Claims Boundaries	Assessment area	1:4,000,000
Upper Columbia EIS Boundary	Assessment area	1:100,000
Wild and Scenic Rivers	Landscape Characterization Area	1:2,000,000
Wilderness	Landscape Characterization Area	1:24k to 1:2,000,000
Wilderness Study Areas	Assessment area	1:24k to 1:126,720
SPECIES GROUP		
Centers of Biodiversity–Animals	Assessment area	1:2,000,000
Centers of Biodiversity–Plants	Assessment area	1:2,000,000
Centers of Endemism/Rarity–Animals	Assessment area	1:2,000,000
Centers of Endemism/Rarity–Plants	Assessment area	1:2,000,000
Hot Spots of Biodiversity	Assessment area	1:2,000,000
Hot Spots of Endemism/Rarity	Assessment area	1:2,000,000
Species Ranges–Amphibian Species	Assessment area	1:2,000,000
Species Ranges–Bird Species	Assessment area	1:2,000,000
Species Ranges–Carnivores	Assessment area	1:2,000,000
Species Ranges–Invertebrate Species	Assessment area	1:2,000,000
Species Ranges–Mammal Species	Assessment area	1:2,000,000
Species Ranges–Reptile Species	Assessment area	1:2,000,000

Table 1. Interior Columbia River Basin Ecosystem Management Project (ICBEMP) Geographic Information System (GIS) Data. (continued)

Theme Name	Extent	Scale/Resolution
TERRESTRIAL GROUP		
Natural Heritage Data (Sens)	Landscape Characterization Area	point data
VEGETATION GROUP		
Current Midscale Vegetation Subsamples	Subsamples	1:12,000 to 1:31,680
Historic Midscale Vegetation Subsamples	Subsamples	1:12,000 to 1:31,680
Kuchler's Potential Natural Vegetation	Assessment area	1:3,168,000
Kuchler's Potential Natural Veg-Point Lifeform	Assessment area	1:3,168,000
Vegetation-Historic OR/WA 1930's	Landscape Characterization Area OR/WA	1 kilometer 1:500,000
ATTRIBUTE FILES LINKED TO SUB-BASINS OR SUBWATERSHEDS		
Alternative 5 Secondary Emphasis Areas	Assessment area	sub-basin
Alternative Composite Ecological Trends	Assessment area	sub-basin
Alternative Emphasis Areas	Assessment area	sub-basin
Bailey's Ecoregion Provinces by Subwatershed	Landscape Characterization Area	1 kilometer
Bailey's Ecoregion Sections by Subwatershed	Landscape Characterization Area	1 kilometer
Biophysical Classification for Subwatersheds	Landscape Characterization Area	1 kilometer
Biophysical Setting-Regional by Subwatershed	Landscape Characterization Area	1 kilometer
Boundary and Elevation Information for Subwatersheds	Landscape Characterization Area	1 kilometer
CRBSUM Current Vegetation by Subwatershed (Assessment)	Landscape Characterization Area	1 kilometer
CRBSUM Historic Potential Vegetation by Subwatershed (Assessment)	Landscape Characterization Area	1 kilometer
CRBSUM Historic Vegetation by Subwatershed (Assessment)	Landscape Characterization Area	1 kilometer
Ecoregion Subsections by Subwatershed	Landscape Characterization Area	1 kilometer
Forest/Range Clusters and Integrity	Assessment area	sub-basin
Road Density (Predicted) by Subwatershed	Landscape Characterization Area	subwatershed
Slope by Subwatershed	Landscape Characterization Area	1 kilometer
Valley Bottom Summary by Subwatershed	Subsamples	subwatershed
Watershed Characterization by Subwatershed	Landscape Characterization Area	subwatershed
Weather-1989, by Subwatershed	Landscape Characterization Area	subwatershed

Theme Name Codes**(Sens):** Sensitive data. Not releasable.**Extents**

Assessment area: 'CRBA'. Assessment area of the Interior Columbia Basin Ecosystem Management Project, same area referred to as Project Area in this DEIS. The area is comprised of Eastern OR and WA, most of ID, and parts of MT, UT, NV and WY.

Landscape Characterization Area: larger than the CRBA; includes more of ID, MT, UT, NV, WY and some of CA.

Socio-Economic Assessment Area: also larger than the CRBA; follows county lines.

List current as of 4/15/96

Table 2. Databases and models obtained or created for ICBEMP (as of March 1, 1996).

[The following table provides summary information on databases and models created or obtained for support of the ICBEMP Assessment. Some of the databases listed below may actually be spreadsheets.]

Database/Model Name	Description	Responsible Team	Software	Platform	GIS Data Layer Tied to Database
Models					
Vegetation Dynamics Development Tool (VDDT)	PC based disturbance and successional pathway model that displays vegetative outputs (cover type and structural stage) for management options. Alternative and Scenario disturbances and pathways will be packaged and available.	Landscape	Windows	PC	None
CRB Successional Model (CRBSUM)	GIS model for predicting vegetation management futures based on successional and disturbance pathways from the VDDT model. Model needs enhancements in order to be made user friendly, run with contagion and at the mid-scale level.	Landscape	Unix, Loki and Arc/Info	Unix	Vegetation outputs from model (cover type and structure)
Aquatic Databases					
Columbia River Basin Reach Inventory Database (CRBRID)	Stream inventory information linked to 17,000 km of river reaches within the CRB	Aquatic	Paradox	PC	100K streams
Fisheries Databases					
Status of "key" Salmonids	Classification of salmonid status within the 6th-field hydrologic units	Aquatic	dBase	PC	6th-field hydrologic units (subwatersheds)
Fish Assemblages	Species assemblages of native and introduced fish taxa	Aquatic	dBase	PC	5th-field hydrologic units (watersheds)
Historic Fish Distribution	Presumed historic distributions of sensitive, threatened, endangered, or special concern fish taxa	Aquatic	dBase	PC	4th-field hydrologic units (sub-basins)

Table 2. Databases and models obtained or created for ICBEMP (as of March 1, 1996). (continued)

The following table provides summary information on databases and models created or obtained for support of the ICBEMP Assessment. Some of the databases listed below may actually be spreadsheets.]

Database/Model Name	Description	Responsible Team	Software	Platform	GIS Data Layer Tied to Database
Terrestrial Databases					
Biodiversity	Documentation of the species comprising the centers of endemism and biodiversity that were delineated by the Scientific Panels	Terrestrial	Paradox	PC	centers of endemism and rarity, centers of biodiversity
Species Environment Relations (SER) Model Database	Ecological function, environmental correlates and other information from Scientific Panels for candidate, threatened, endangered and sensitive plant, vertebrate, and invertebrate species	Terrestrial	Paradox	PC	species ranges (for subset of species)
Other					
Demographic Databases Wessex Corp. "Profiler" and "Tiger 92"	Demographic information and statistics from the 1990 U.S. census	Social (purchased)	dBase	PC	census tracts and blockgroups
PRIZM Lifestyle Database	Data describing the proportions of households within each census tract belonging to 62 lifestyle clusters	Social (purchased)	dBase	PC	census tracts and blockgroup
Columbia River Basin Landscape Assessment Database (CRBLAD)	Vegetative information and indicator variable classifications of 6th hydrologic unit codes for the historic, current and Scientific Assessment Scenarios. Created for analytical purposes only. Pertinent information summarized in Executive Summary database for historic and current conditions.	Spatial	ACCESS	PC	6th-field hydrologic units (subwatersheds)
Columbia River Basin Landscape EIS Database (CRBLED)	Vegetative information and indicator variable classifications of 4th-field hydrologic unit codes for the historic, current and modeled EIS alternatives.	Spatial	ACCESS	PC	4th-field hydrologic units (sub-basins)

	Created for analytical purposes only. Pertinent information summarized in Alternative Summary files.					
Executive Summary	Vegetative information and indicator variable classifications of 6th hydrologic unit codes for the historic and current situation.	Spatial and dBase	ArcView	PC/Unix	6th-field hydrologic units (subwatersheds)	
Alternative Summary	Vegetative information and indicator variable classifications of 4th-field hydrologic units for various alternatives. Also includes integrity ratings for aquatic, hydrologic, forest, and range.	Spatial	ArcView and dBase	PC/Unix	4th-field hydrologic unit code (sub-basins)	
Invaders	Exotic plant species location by county	Landscape/ Terrestrial	Paradox	PC	vegetation cover type and structures	
Watershed Characterization Database (H4/H6Interp)	Hydrologic function data and classification of 4th/6th hydrologic unit codes subwatersheds	Landscape	Paradox	PC	4th- / 6th-field hydrologic units (sub-basins and subwatersheds)	
Research, Development and Application (RDandA) Database	Research needs, data gaps and assumptions for staff areas	Landscape	Paradox	PC	none	
Timber Mill Sites Database	Information about products and production of timber mills	Economics	Paradox	PC	towns	
Tracker	Administrative record tracking system	Administration	Paradox	PC	none	

