

Oregon/Washington Data Plan
October 23, 2002

Data Vision

Data used by Oregon/Washington BLM will be of the highest quality practical; data will follow data standards and be fully documented. Data, and its documentation, will be easily accessible to those that need access to the data, yet will be protected from either intentional or inadvertent harm. Data holdings will be based on business requirements, as defined by subject matter experts and data stewards.

Objectives

The objectives of the data design project (as they have been previously expressed) are to:

- Make all relevant data easily accessible to ArcGIS customers
- Reduce redundant data collection and storage
- Establish necessary data standards
- Archive data that is no longer used or needed
- Create data documentation needed to fully understand and use the data
- Identify all data that needs to be migrated/redesigned (including local data)
- Establish the linkage between business requirements and data holdings

The Problem (or why bother)

OR/WA BLM has an extensive holding of data. This data is an expression of business requirements and the data needs of the various functions the Bureau performs. However, a high percentage of this data is old and out of date. Many of the data layers have not been updated since they were originally built 10-12 years ago. As a result, many of those layers are used sparingly, if at all. As a result of a lack of attention over the years, the data quality in many layers is highly suspect. For example, the cultural resources layer for Western Oregon (CRM) has only been edited by one district since 1988. And that edit was done five years ago. It is reasonable to assume that new cultural resources have been found or surveyed for during that time period.

Another problem with the existing data resource is that some contain multiple types of information, making analysis using those layers very difficult. A good example of this is the Recreation Management Area theme. This contains attributes for recreation sorts of things (Extensive Recreation Management Areas, Special Recreation Management Areas, Recreation Sites, etc), some that are recreation things but probably need to be in their own layers (Wild Rivers, Wild and Scenic Rivers, Wilderness Study Areas), some that may or may not be recreation-related (Areas of Critical Environmental Concern, Outstanding Natural Areas, Research Natural Areas) and a couple that are meaningless (proposed, potential).

A significant portion of the data we currently hold is either lightly used or not used at all. An indication of this is that of the approximately 100 data layers available for download on the OR/WA GIS web site, only about 70 of them have ever actually been downloaded (in the last 9 months or so).

A significant amount of work has gone into standardizing, capturing, and assuring data quality on a relatively few number of transactional layers (landlines, hydrography, transportation, forest operations inventory, noxious weeds, grazing allotments, fire water sources). As this work has occupied staff time, single use layers have proliferated in order to meet pressing business needs. This has resulted in redundant, non-standard data sets.

Subject areas that have lacked attention over the last several years lack an active data steward.

Data Stewardship

Data (or Information) Stewardship is the willingness to be accountable for a set of business information for the well-being of the larger organization by operating in service, rather than in control of those around us.¹ As part of an overall Instruction Memorandum on data management roles and responsibilities, the following roles/responsibilities for a State Data Steward have been described:

State Data Stewards are subject matter experts for their respective business subject area as designated by management.

Data Steward Responsibilities:

- Create data standards and business rules.
- Coordinate within State for QA/QC process and procedures on program data.
- Ensure data is managed as a corporate resource.
- Coordinate field office data management program with the National Data Steward² and State Data Administrator.
- Distribute information on Bureau/State data management initiatives to the program specialists.
- Organize data sharing with other entities.
- Review geo-spatial and alphanumeric metadata for completeness and quality (including FGDC).

The roles and responsibilities for a field office data steward are essentially the same.

Data stewardship is an essential element in improving the way we manage data in the BLM. The activities described in the rest of this document cannot be accomplished without active data steward participation and direction.

How Can We Change the Situation

Changes in software capabilities are allowing us to make significant improvements in the data resource. The old technology forced us into stand-alone data layers that were, at times, highly redundant. The new technology allows us to store spatial data in a relational database. This allows a significant reduction in redundant data collection,

¹ Larry English, "Information Stewardship: Accountability for Information Quality"; Guidelines to Implementing Data Resource Management, Version 3; Data Management Association

² See Attachment 1 for a list of National Data Stewards

allows enforcement of data quality edits, and makes data easier to find and use. Also, since the data can be in a relational database, accessing data in other, currently existing databases, can be done easier and more efficiently.

At a high level, the plan for data design in OR/WA includes the following:

- Data inventory
- Rehost data to ArcSDE
- Group data into topical areas
- Develop high-level data model
- Establish priorities for data design/standards work
- Identify data stewards and data stewardship teams for each data group
- Data steward team evaluate data group to determine the “state of the data”
- Implement data design process³ at appropriate level

Of these basic steps, the first two have been completed as has a draft grouping into topical areas⁴.

Priority Setting

It is clear that the entire “world” of BLM data cannot be designed at once. This means that some priorities must be set to guide which groups of data are designed in what order. Priority setting needs to be accomplished by management and data stewards. Possible priority setting criteria might include:

- Relationship to land use planning
- Relationship to supporting the National Energy Plan
- Relationship to supporting the National Fire Plan

High Level Data Model

The grouping of data into topical areas, in essence, creates a high-level data model. This provides the foundation for future detailed data models for each topic area and provides the basis for horizontal (across topic area) coordination and integration.

Products

The following is a list of products that will be produced by this data design process.

Product Name	Product Description	Status	Completion Date(s)
Spatial Data Migration Plan	Identifies those data layers to be rehosted into the ArcSDE environment and those to be archived and deleted.	Complete	7/19/2002
Data Groups	Existing and known new data grouped into similar data groups (e.g. wildlife, lands,	In-Progress	Est. 10/31/2002

³ See Attachment 2 for the design process as defined by ESRI for Geodatabase development.

⁴ Attachment 3 contains the initial grouping of data into topical areas.

	transportation, etc).		
High Level Data Model	A high level data model, based on the identified data groups, that shows relationships between data groups.	Planned	Est. 11/15/2002
Data Steward List	List of state level data stewards to match those at the national level and to match with the data groups identified in previous products.	In-Progress	Est. 11/15/2002
Prioritized Data Groups	List of data groups in order of design/standards priority as determined by management and data stewards.	Planned	Est. 10/31/2002
Data Design Process	Document that specifies the process that will be used to complete the data design and data standards for each data group.	Draft	10/23/2002
Data Standards Format (National)	A standardized format for all data standards to follow.	Draft	10/23/2002
Detailed Data Model	A detailed model of each data group, the finished product of which is a data standards document (using above format). Each data group would have its own model/document.	Planned	Unknown
Geodatabase Design	The physical implementation of the data model developed for each data group.	Planned	Unknown

These products will be posted to the OR/WA Information Management/GIS web site (at an as yet undetermined location).

Attachment 1
 NATIONAL DATA STEWARDS
 (http://web.blm.gov/data_mgt/datastewds.htm)

CATEGORY	NATIONAL DATA STEWARDS
Abandoned Mine Lands	George Stone, WO-360
Accessibility	Kay Ellis, WO-250
Archeology	Linda Clark, ID-084
Automated Fluid Minerals Support System	Paul Brown, WO-310D
Cadastral Survey	Bob Ader, WO-350D
Coal	Bill Lesage, WO-320
Collections and Billings	Dorothy Butler, BC-613
Commercial Oil and Gas Well Completion and Production Data	Donnie Shaw, WO-310
Cultural Heritage	Linda Clark, ID-084
Customer Research	Andrew Goldsmith, WO-830
Dams Safety	Linda Force, WO-360
Financial Management	John Kunzler, BC-620
Fire Management	Corey Grant, FA-130
Fisheries	Karl Stein, WO-230
Fleet Management	--
Fluid Minerals	Del Fortner, WO-310
Forestry	Rick Tholen (lead), ID WO-230 John Stewart, WO-230
Hazardous Materials	Nancy Dean WO-360
Historical Preservation	Linda Clark, ID-084
Invasive Weeds	Gina Ramos, WO-220
Land Status	Bob Ader, WO-350D
Lands & Realty	Alzata Ransom, WO-350
LR2000 Oil and Gas Cases	Jay Douglas, WO-310
Mineral Materials	Durga Rimal, WO-320
Mining Claims	Barbara Gauthier-Warinner, WO-320
National Trails	Deb Salt, CA-610
Native American Issues	Jerry Cordova, WO-240
NEPA Issues	Carol MacDonald, WO-210
Nonenergy Leasables	Phil Allard, WO-320
Off Highway Vechiles	Jim Keeler, WO-250
Oil and Gas Cases	Jay Douglas, WO-310
Oil and Gas Bonds	Mary Nagel, WO-310
Oil and Gas Lease Stipulations	Richard Watson, WO-310
Other Business Data	Bob Donelson, WO-850
Paleontology	Mike O'Neill, NM-011
Performance Measures	Daryl Koncer, WO-830
Plan Boundaries	Leonard Gore, WO-210
Range	Tim Reuwsaat, WO-220
Recreation	Terry O'Sullivan, AZ WO-250

Recreation Sites and other Facilities	Linda Force, WO-360
Reference Themes	Ed Harné, WO-210
River Management	Lee Larson, WO-250
Roads and Trails	Linda Force, WO-360
Solid Minerals	Nick Rieger, WO-320
Surface Management	Nick Rieger, WO-320
Threatened & Endangered Species	Peggy Olwell, WO-230
Transportation/Roads & Trails	Linda Force, WO-360
Tourism	Angela West, NMSO
Vegetation	Sherm Karl, WO-220
Visual Resource Management	Stewart Jacobson, UT-930 Brad Cownover, WO-250
Watershed	Eric Janes, WO-220
Wild Horse & Burro	Bud Cribley, WO-260
Wilderness	Dave Porter, COSO WO-240
Wildlife	Cal McCluskey, WO-230

Attachment 2
THE DATA DESIGN PROCESS
(REPEATS FOR EACH DATA GROUP)

1. Assign State data steward to data group
2. Establish data stewardship team to assist in design
3. Team evaluate data group to determine where in process they need to begin
4. Implement data design process at appropriate point as determined in previous step
5. Data design process includes:
 - a. Model the User's View
 - i. Identify organizational functions
 - ii. Identify data that supports those functions
 1. data of interest
 2. background data
 - iii. Organize data into logical groupings
 - b. Define Entities (those "things" we need to know about), Attributes (information about those "things") and Relationships (how the different "things" interact)
 - i. Identify and describe entities and attributes
 - ii. Identify and describe relationships
 - iii. Document the entities/attributes/relationships
 - c. Identify Representation of Entities (point, line, area, surface, raster, image, object)
 - d. Match to Geodatabase model
 - i. Determine appropriate geodatabase representation of entities
 - ii. Ensure that complex feature classes are supported
 - e. Organize into Geographic Datasets
 - i. Group feature classes
 - ii. Define topological roles for feature classes
 - iii. Group into geodatabases
6. Create data standard document from modeling exercise
7. Create metadata for the completed geodatabase

Attachment 3
DRAFT DATA GROUPINGS

Data Layer Name	Abbreviation	Primary Keyword	Former Keyword	Migration Category
Timber Sale Inventory	TSI	????	Vegetation	rehost
Noxious Weeds	WEEDS	?????	Vegetation	rehost
Known Cultural Areas	CRM	Archaeology	Recreation	rehost
X-Theme Known Cultural Areas	XCR	Archaeology	Recreation	rehost
Boundaries	DLG-BD, BD_CFF, BDX_CFF	Boundaries	Framework	Library
Boundaries, BLM District	DOB	Boundaries	Framework	rehost
Boundaries, BLM Resource Area	RAB	Boundaries	Framework	rehost
Boundaries, National Forest	FSBND	Boundaries	Framework	refresh-rehost
Boundaries, Physiographic Province	PROVPHYS	Boundaries	Framework	rehost
Boundary Counties OR WA	COB	Boundaries	Framework	rehost
Boundary Counties Points OR WA	COBPTS	Boundaries	Framework	rehost
Boundary State OR WA	STATE	Boundaries	Framework	rehost
County Boundaries	county_carto	Boundaries	Cartographic	New
Master Unit Boundary	MUB	Boundaries	Vegetation	Library
Oregon Department of Fish and Game Management Units	OMB	Boundaries	Wildlife	refresh-rehost
State Boundary	statebnd	Boundaries	Cartographic	New
Air Quality Designations	AQD	Climate	Fire/Climate	Library
Remote Automated Weather Stations	raws	Climate	Cartographic	New
Ten-Inch Precipitation Zones	PRECIP10	Climate	Fire/Climate	refresh-rehost
Two Inch Precipitation	PRECIP2	Climate	Fire/Climate	refresh-rehost
Weather Stations	WST	Climate	Fire/Climate	refresh-rehost
Contours, 20 foot	Contour	Elevation	Framework	rehost
Contours, 500 foot	Contour100	Elevation	Framework	rehost
Fire History 1850 / 1890 / 1920 / 1940	FIREHISTORY	Fire	Fire/Climate	rehost
Fire Management Zones	FMZ	Fire	Fire/Climate	Library
Fire Occurrence	FOM	Fire	Fire/Climate	refresh-rehost
Fire Water Sources	FWTR_SRC	Fire	Fire/Climate	rehost
Analytical Watersheds	AWS	Hydrography		Library

Cartographic Rivers		Hydrography	Cartographic	New
Cartographic Streams		Hydrography	Cartographic	New
Hydrography Points	HYDPTS	Hydrography		rehost
Key Watersheds, Preferred Alt. #3	KWSP3	Hydrography		Library
Lakes	lakes	Hydrography	Cartographic	New
Lakes, Reservoirs, and Ponds	LAKES	Hydrography		rehost
Municipal / Community Watersheds	MWS	Hydrography		Library
REO Watershed Layer		Hydrography		New
Stream Network	streams	Hydrography	Cartographic	New
Streams, Linear Features	STREAMS	Hydrography		rehost
Waterbodies	WB	Hydrography		rehost
Waterbody Points	WP	Hydrography		rehost
Waterbody Shorelines	WS	Hydrography		rehost
Watercourses	WC	Hydrography		rehost
Communications Sites	GCS	Lands		Library
County Zoning	CTZ	Lands		Library
Land Use Leases	LSE	Lands		Library
Utility Right-of-Way	URW	Lands		Library
7.5 Minute Quad Perimeters	QUADS24	Location	Framework	rehost
Agency Annotations	agencyanno	Location	Cartographic	New
Cities	cities	Location	Cartographic	New
District Office Cities	DOC	Location	Framework	Library
Gazateer	GAZATEER	Location	Framework	refresh-rehost
Geographic Coordinate Database	GCD	Location	Framework	rehost
Misc Cultural Line Features	MFL	Location	Framework	Library
Misc Cultural Point Features	MFP	Location	Framework	Library
Summits	summits	Location	Cartographic	New
Urban Roads and Populated Places	PPL100	Location	Framework	rehost
Coal Mineral Potential	CMP	Minerals		Library
Geothermal Mineral Potential	GMP	Minerals		Library
Mineral Information Layer of Oregon	MILO	Minerals		refresh-rehost
Mineral Material Sites	MMS	Minerals		Library
Oil and Gas Potential	OGP	Minerals		Library
Oregon Faults	FAULTS	Minerals		refresh-rehost
Oregon Surface Geology	GEO	Minerals		refresh-rehost
Potential Occurrence, Locatable Minerals	LMP	Minerals		Library
Landlines	LLI	Ownership	Framework	rehost

Major Public Lands	MPL	Ownership	Framework	refresh-rehost
OR Ownership	oreown	Ownership	Cartographic	New
Ownership Relief	ownrelief	Ownership	Cartographic	New
WA Ownership	waown	Ownership	Cartographic	New
Forest Health/Fir Beetle Damage, 1993	FRBE93	Pests	Vegetation	refresh-rehost
Forest Health/Other Damage, 1993	OTDM93	Pests	Vegetation	refresh-rehost
Forest Health/Pine Beetle Damage, 1993	PNBE93	Pests	Vegetation	refresh-rehost
Forest Health/Spruce Budworm Damage, 1993	SPBW93	Pests	Vegetation	refresh-rehost
Forest Health/Tussock Moth Damage, 1993	FRTM93	Pests	Vegetation	refresh-rehost
Final RMP Out Themes, Preferred Alt. #3	OUTP3	Planning		Library
Land Tenure Zones	LTZ	Planning		Library
Land Use Allocations	LUA	Planning		rehost
Land Use Allocations-94	LUA94	Planning		Library
Planning Provinces and Analysis Areas	PROVPLAN	Planning		rehost
Special Management Areas	RECP3	Planning		Library
X-Theme Final RMP Out Themes Preferred Alt. #3	XUTP3	Planning		Library
X-Theme Land Use Allocations	XUA	Planning		rehost
X-Theme Land Use Allocations 94	XUA94	Planning		Library
Grazing Allotments Oregon	GRA	Range		rehost
Recreation Management Areas	REC	Recreation		Library
Special River Designations	SRD	Recreation		Library
VRM Classes/Scenic Quality	VRM	Recreation		Library
VRM Classes/W.Oregon Planning Final	VRMP3	Recreation		Library
Wilderness Areas	wild_areas	Recreation	Cartographic	New
Wilderness Areas OR WA	WLD	Recreation		New
Wilderness Study Areas OR WA	WSA	Recreation		New
X-Theme Special Management Areas	XECP3	Recreation		Library
X-Theme Special River Designations	XRD	Recreation		Library
X-Theme VRM Classes/Scenic Quality	XRM	Recreation		Library
X-Theme VRM Classes/Western Oregon Planning Final	XRMP3	Recreation		Library

Assessment Plant Species	TEA	Sensitive Plants	Vegetation	Library
Bureau Sensitive Plant Species	TEB	Sensitive Plants	Vegetation	Library
Federal Candidate Plant Species	TEC	Sensitive Plants	Vegetation	Library
Natural Heritage Database	NHD	Sensitive Plants	Vegetation	refresh-rehost
Site of Sensitive Plant Species	TEP	Sensitive Plants	Vegetation	Library
State Listed Plant Species	TES	Sensitive Plants	Vegetation	Library
X-Theme Assessment Plant Species	XEA	Sensitive Plants	Vegetation	Library
X-Theme Bureau Sensitive Plant Species	XEB	Sensitive Plants	Vegetation	Library
X-Theme Site of Sensitive Plant Species	XEP	Sensitive Plants	Vegetation	Library
Soils	SSURGO	Soils		NewBLM
State Soil Geographic Database	STATSGO	Soils		rehost
BLM Roads	TRB	Transportation		Library
Cartographic Highways		Transportation	Cartographic	New
Ground Transportation Drainage Structures	GTRPTS	Transportation		rehost
Ground Transportation Roads & Trails	GTRN	Transportation		rehost
OR WA Highways	orwahwy	Transportation	Cartographic	New
OR/WA Land Management Highways	LMHY	Transportation		Library
1900 Vegetation	Veg1900	Vegetation		rehost
1915 Vegetation Mapping		Vegetation		NewBLM
Coastal Broadleaf Continuous	Coa_bdlf_cont	Vegetation		Grid
Coastal Broadleaf IRICC Standard	Coa_bdlf_std	Vegetation		Grid
Coastal Conifer Continuous	Coa_con_cont	Vegetation		Grid
Coastal Conifer IRICC Standard	Coa_con_std	Vegetation		Grid
Coastal Forest Structure Continuous	Coa_stry_cont	Vegetation		Grid
Coastal Forest Structure IRICC Standard	Coa_stry_std	Vegetation		Grid
Coastal Tree Size Continuous	Coa_size_cont	Vegetation		Grid
Coastal Tree Size IRICC Standard	Coa_size_std	Vegetation		Grid
Coastal Vegetation Continuous	Coa_veg_cont	Vegetation		Grid

Coastal Vegetation IRICC Standard	Coa_veg_std	Vegetation		Grid
Current Vegetation Survey	CVS	Vegetation		NewBLM
Forest Breeding Units	FBU	Vegetation		Library
Forest Cover/Operations Inventory	FOI	Vegetation		rehost
Forest Operations Inventory, 1992	FOI92	Vegetation		Library
Forest Seed Zones	FSZ	Vegetation		rehost
Major Plant Groupings	MPG	Vegetation		Library
Oregon Automated Ecological Site Information System	OAESIS	Vegetation		New
Sustained Yield Units	SYU	Vegetation		Library
Timber Production Capability Class 1992	TPC92	Vegetation		Library
Timber Production Capability Class Points	TPCPTS	Vegetation		rehost
Timber Production Capability Class Polygon	TPC	Vegetation		rehost
Tree Improvement Co-Op Units	TIU	Vegetation		Library
Vegetation	VEG	Vegetation		rehost
Vegetation Types for Eastern Oregon		Vegetation		NewBLM
Western Oregon Digital Image Project 1993	WODIP	Vegetation		Grid
X-Theme Forest Operations Inventory	XOI	Vegetation		rehost
X-Theme Forest Operations Inventory 1992	XOI92	Vegetation		Library
X-Theme Timber Production Capability	XTP	Vegetation		rehost
X-Theme Timber Production Capability Class 92	XTP92	Vegetation		Library
X-Theme Timber Production Capability Points	XTPPTS	Vegetation		rehost
Bald Eagle	B19	Wildlife		Library
Black-Tailed Deer	M70	Wildlife		Library
Columbian White-Tailed Deer	M71	Wildlife		Library
Deer Winter Range	DWR	Wildlife		Library
Elk	M69	Wildlife		Library
Elk Distribution	ELK	Wildlife		Library
Elk Winter Range	EWR	Wildlife		Library
Final Critical Habitat Units	FCHU	Wildlife		Library
Fish Management Sites	FSM	Wildlife		Library
Golden Eagle	B24	Wildlife		Library
Great Blue Heron	B16	Wildlife		Library
Larch Mountain Salamander	A04	Wildlife		Library

Marbled Murrelet	B32	Wildlife		Library
Marbled Murrelet Zones	MMZ	Wildlife		rehost
Osprey	B18	Wildlife		Library
Peregrine Falcon	B26	Wildlife		Library
Raptor or Heron Nests	RHN	Wildlife		Library
Sharptail Snake	R13	Wildlife		Library
Special Habitat Features	SHF	Wildlife		Library
Spotted Owl Activity Centers	SOC	Wildlife		rehost
Spotted Owl Activity Centers on BLM Managed Lands	SOC_BLM	Wildlife		rehost
Spotted Owl Habitat	SHB	Wildlife		Library
Spotted Owl Provinces	SPR	Wildlife		Library
Threatened and Endangered Species Pref. Alt. #3	TAEP3	Wildlife		Library
Western Pond Turtle	R11	Wildlife		Library
Wild Turkey	B28	Wildlife		Library
Wildlife Observation Sites	WILD	Wildlife		New
X-Theme Threatened and Endangered Species Alt. #3	XAEP3	Wildlife		Library
1. Based on IB-OR-2002-236 2. Obsolete and District-Specific layers removed 3. Keywords expanded - Framework eliminated as a keyword				
Last Modified: 10/18/2002				