

FOREST OPERATIONS INVENTORY VEGETATION

SPATIAL DATA STANDARD

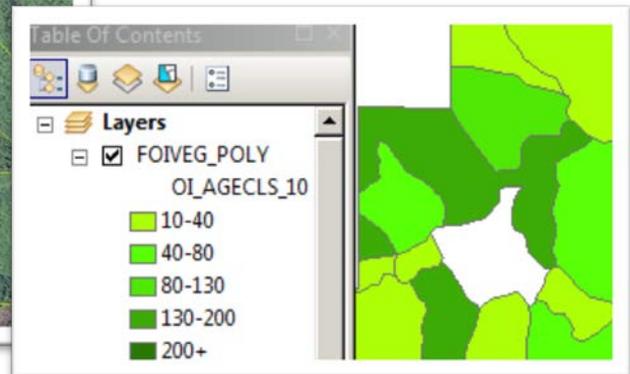
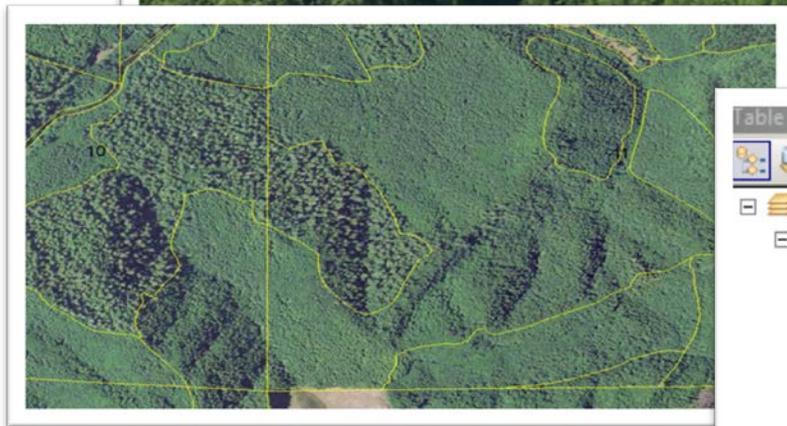
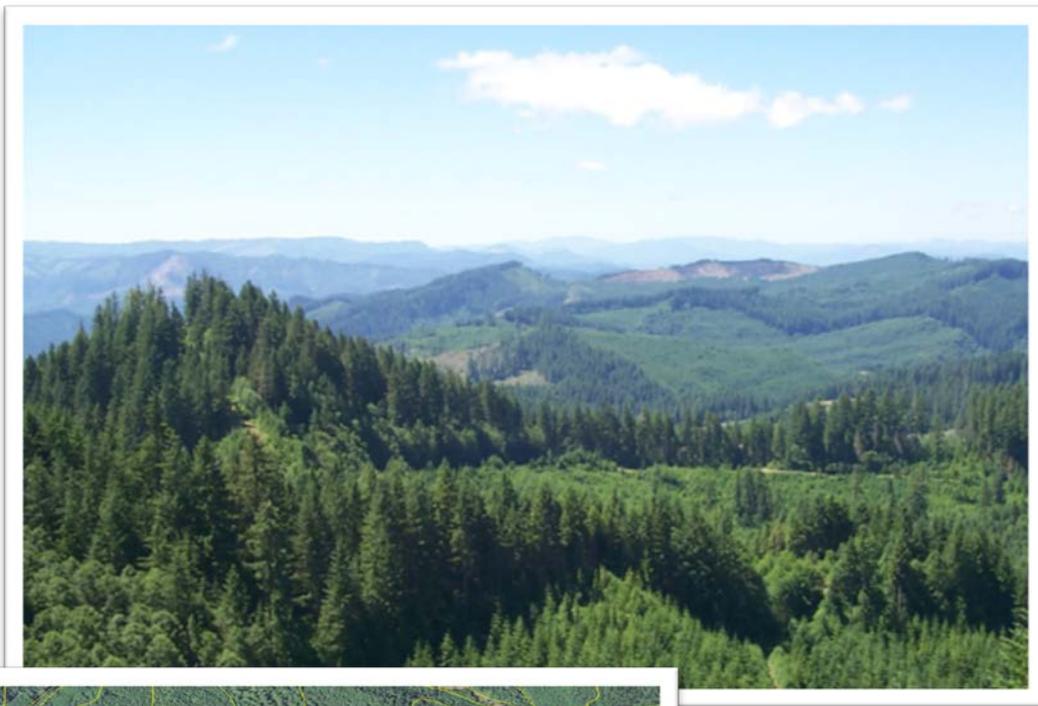


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1 GENERAL INFORMATION

Dataset (Theme) Name: Forest Vegetation
 Dataset (Feature Class): FOIVEG_POLY

1.1 ROLES AND RESPONSIBILITIES

Roles	Responsibilities
State Data Stewards	The State Data Steward, Daniel Couch, at 541-464-3215, is responsible for approving data standards and business rules, developing Quality Assurance/Quality Control procedures, identifying potential privacy issues, and ensuring that data is managed as a corporate resource. The State Data Steward coordinates with field office data stewards, the state data administrator, Geographic Information System (GIS) coordinators, and national data stewards. The State Data Steward also reviews geospatial metadata for completeness and quality.
Lead GIS Specialist	The Lead GIS Specialist, Dana Baker-Allum, at 503-808-6320, works with data stewards to convert business needs into GIS applications and derive data requirements, and participates in the development of data standards. The Lead GIS Specialist coordinates with system administrators and GIS Coordinators to manage the GIS databases. The lead GIS specialist works with data editors to make sure data is being input into the enterprise Spatial Database Engine (SDE) database consistently and in accordance with the established data standard. The Lead GIS Specialist provides technical assistance and advice on GIS analysis, query and display of the dataset.
State Data Administrator	The acting State Data Administrator, Georgia Bosse at 503-808-6120, provides information management leadership, data modeling expertise, and custodianship of the state data models. The State Data Administrator ensures that defined processes for development of data standards and metadata are followed, and that they are consistent and complete. The State Data Administrator is responsible for making data standards and metadata accessible to all users. The State Data Administrator also coordinates with data stewards and GIS coordinators to respond to national spatial data requests.
State Records Administrator	The acting State Records Administrator, Tamara Yingling, at 503-808-6450, assists the State Data Steward to identify any privacy issues related to spatial data. The State Records Administrator also provides direction and guidance on data release and fees. The State Records Administrator also ensures that data has been classified under the proper records retention schedule and determines appropriate Freedom of Information Act category.

Table 1 Role and Responsibilities

1.2 FOIA CATEGORY

Public

1.3 RECORDS RETENTION SCHEDULE

General Records Schedule (GRS) BLM 20/52 (Electronic Records/Geographic Information Systems).

TEMPORARY. Delete when no longer needed for administrative, legal, audit, or other operational purposes (subject to any records freeze or holds that may be in place).

Annual snapshots are stored on-line for a minimum of 12 years after which the data is copied off-line, with format and readability maintained in a five year “tech refresh” cycle in order to retain full functionality.

1.4 SECURITY/ACCESS/SENSITIVITY

The Forest Vegetation theme does not require any additional security other than that provided by the General Support System (the hardware/software infrastructure of the Oregon/Washington (OR/WA) Bureau of Land Management (BLM)).

This data is not sensitive and there are no restrictions on access to this data either from within the BLM or external to the BLM.

There are no privacy issues or concerns associated with these data themes.

1.5 KEYWORDS

Keywords that can be used to locate this dataset include:

Forest [BLM Thesaurus]

Environment and Conservation (environment), 007 [International Organization for Standardization (ISO) Topic Categories Thesaurus]

Biology and Ecology (biota), 002 [ISO Topic Categories Thesaurus]

Forestry

Vegetation

Trees

Forest Operations Inventory

FOI

Harvest

Treatment

Timber Stand
Western Oregon
Land Use Planning
Forest Regeneration
Forest Restocking
Forest Cover
Natural Resources

2 DATASET OVERVIEW

2.1 DESCRIPTION

The Forest Operations Inventory Vegetation (FOIVEG_POLY) feature class is a forest-centric classification of vegetation with polygons that cover 100 % of western Oregon BLM lands. It describes forested lands in great detail and non-forest lands with broad and general classifications. It includes and uses related table data from the Western Oregon Micro*Storms (M*S) system to describe forest vegetation. Polygons are delineated primarily based on differences in vegetative cover, size, and age. FOIVEG_POLY attributes describe both the overall forest stand as well as the layers within that stand. Cover type and ten year age class are part of the description of the overall forest stand. The stand description which includes species, size class, and birth year describes the stand but also the layers of forest canopies within each stand. M*S provides the tool to edit FOIVEG_POLY attributes and provides additional vegetation information that could be used in conjunction with FOIVEG_POLY. M*S provides related tables of stand attributes such as site class and site index along with summary stand metrics data commonly resulting from stand exam surveys.

ATTRIBUTE SUMMARY

The attributes of Forest Vegetation, in conjunction with other feature classes and the related tables of the M*S dataset, are necessary to answer the basic “who, what, when, where, why, and how” questions related to forest stands. The Oregon Data Framework FOIVEG_POLY attributes alone do not answer these basic questions. Specific attributes have different lists of valid values (domains).

- The Stand Description and Age Class describe the “what” with additional detail provided by the related tables of stand attributes in M*S.
- “Who” is provided by the Classifier and Stand Source found in M*S.
- “When” is provided in two separate arenas. The Source Date provides the when in relation to Classifier and Stand Source. However, Birth Year and Ten Year Age Class also contained in the Stand Description give the perspective of when the forest stand or it’s layers were initiated. The details all of which are in the M*S related tables.

- “Why and how” are answered in part by using the related treatment feature classes (BURN_POLY, CHEM_POLY, HARV_POLY, MECH_POLY, PROT_POLY, REVEG_POLY) in conjunction with FOIVEG_POLY.
- “Where” is intrinsic to GIS.

The FOI-VEG polygons are identified by a unique number (OI_KEY).

2.2 USAGE

This dataset is the spatial corporate repository for forest vegetation on Western Oregon BLM lands. It is used as a comprehensive record of vegetation on public lands at the unit level or at the broad landscape level using stand type or age class distribution. For Western Oregon, the published version of this dataset contains stand metrics from stand exam surveys and other stand attributes that can be used to describe the vegetation in more detail.

2.3 SPONSOR/AFFECTED PARTIES

The sponsor for this data set is the Deputy State Director, Resource Planning, Use and Protection. Forest Vegetation is defined by and specific to the BLM and occurs on BLM Lands. No interagency data standard exists for the current version of Forest Operations Inventory Vegetation.

2.4 RELATIONSHIP TO OTHER DATASETS, DATABASES or FILES

Treatment Feature Classes - (BURN_POLY, CHEM_POLY, HARV_POLY, MECH_POLY, PROT_POLY, REVEG_POLY): Any of these Treatment Feature Classes are associated with an Operations Inventory unit. They provide the history of vegetation treatments that have resulted in the current vegetation description seen in FOIVEG_POLY. They also provide vegetation treatments that are proposed to occur on operational units. In the initial load, the Local Link attribute of Treatments contains the OI Key Number from FOIVEG_POLY.

Reforestation and Forest Survey Feature Class - (FOREST_SURV_POLY): This Feature Class describes surveys associated with the vegetation of an Operations Inventory unit. It provides the history of surveys that have been completed or surveys proposed for the future that help to describe the current vegetation of FOIVEG_POLY. It also provides the spatial location of stand exam surveys that provide the stand metrics in the M*S dataset. In the initial load, the Local Link attribute of FOREST_SURV_POLY contains the OI Key Number from FOIVEG_POLY.

EcoSurvey Database: The EcoSurvey dataset contains tree and vegetation data collected on a point by point basis during stand exam surveys. The EcoSurvey program can summarize and export, in an automated process, the stand attributes to the M*S related tables and update the stand description and ten year age class of FOIVEG_POLY. This process uses the OI Key number from FOIVEG_POLY to link with data having the same OI number in the EcoSurvey database.

Micro*Storms (M*S): For Western Oregon BLM, the M*S dataset contains the editable forest stand attribute details in related tables that are linked to FOIVEG_POLY with the unique OI Key Number. Edits are made in M*S to the layer details, species, stocking class, and birth year that update the Stand Description and Ten Year Age Class of FOIVEG_POLY. M*S provides additional vegetation attributes, such as stand metrics and site index. A comprehensive list of these are provided in Section 8 of this document.

2.5 DATA CATEGORY/ARCHITECTURE LINK

This data theme is a portion of the Oregon Data Framework (ODF). The ODF utilizes the concept of inheritance to define specific instances of data. The ODF divides all OR/WA resource-related data into three general categories: Activities, Resources, and Boundaries. These general categories are broken into sub-categories that inherit spatial characteristics and attributes from their parent category. These sub-categories may be further broken into more specific groups until you get to a basic dataset that cannot be further sub-divided. Those basic datasets inherit all characteristics of all groups/categories above them. The basic datasets are where physical data gets populated (those groups/categories above them do not contain actual data but set parameters which all data of that type must follow).

See the ODF Overview (Figure 2), for a simplified schematic of the entire ODF showing the overall organization and entity inheritance. The Forest Vegetation entities are highlighted. For additional information about the ODF, contact:

OR/WA State Data Administrator
Bureau of Land Management
P.O. Box 2965
Portland, OR 97208
503-808-6009

In the ODF, Forest Vegetation is considered a resource and categorized as follows:

Forest Operations Inventory:
ODF
Resources
Landscape Cover
FOIVEG_POLY

2.6 RELATIONSHIP TO THE DEPARTMENT OF THE INTERIOR ENTERPRISE ARCHITECTURE - DATA RESOURCE MODEL

The Department of the Interior's (DOI) Enterprise Architecture contains a component called the Data Resource Model. This model addresses the concepts of Data Sharing, Data Description and Data Context. This data standard provides information needed to address each of those areas. Data sharing is addressed through complete documentation and simple data structures which make sharing easier. Data description is addressed in the section on Attribute Descriptions. Data context is addressed in the Data Organization Structure portion of this document. In addition, the Department of the Interior (DOI) Data

Resource Model categorizes data by use of standardized Data Subject Areas and Information Classes. For this dataset, the Data Subject Area and Information Class are:

- Data Subject Area: Geospatial
- Information Class: Location

For a complete list of all DOI Data Subject Areas and Information Classes, contact:

OR/WA State Data Administrator
Bureau of Land Management
P.O. Box 2965
Portland, OR 97208
503-808-6009

2.7 FOREST VEGETATION DATA ORGANIZATION / STRUCTURE

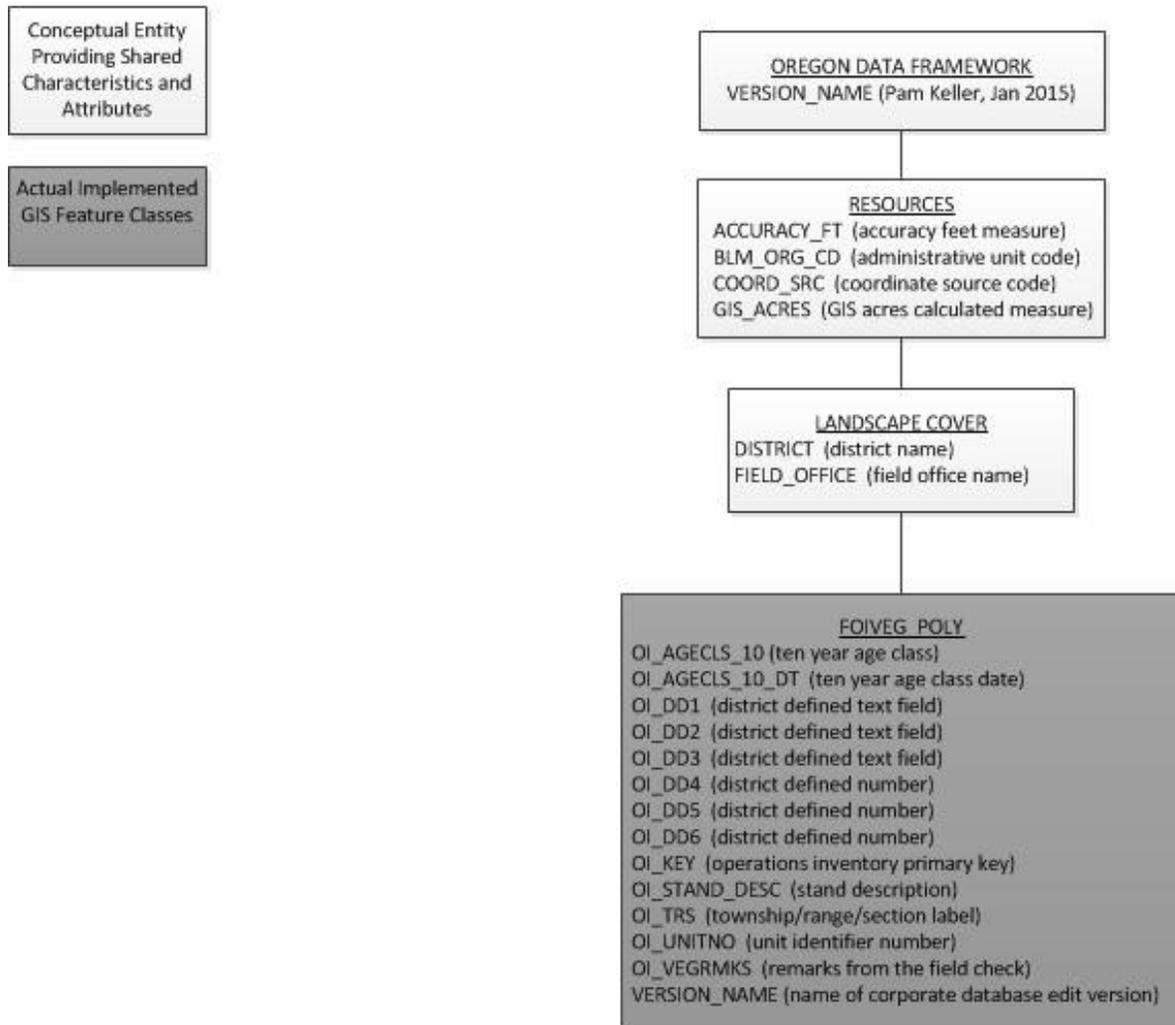


Figure 1 Data Organization Structure

3 DATA MANAGEMENT PROTOCOLS

3.1 ACCURACY REQUIREMENTS

FOIVEG_POLY data has a wide range of accuracies. Locational accuracy is dependent on the original classifier or the base map used to generate the vegetation polygon but there are many instances where this source is unknown because this polygon dataset has been managed by a variety of methods which predate the implementation of GIS. Many features were imported from the legacy data. However, more recent polygons generated in association with timber sales or updated imagery have a higher level of spatial accuracy and will have more complete information. Over time the dataset will become more accurate. A high degree of accuracy is not required for forest vegetation and in some cases the process of classifying vegetation does not lend itself to precise boundaries.

3.2 COLLECTION, INPUT, AND MAINTENANCE PROTOCOLS

This section provides information on the digital capture of the spatial Forest Vegetation information.

Creating Forest Vegetation Entities:

Significant changes in vegetation species composition, size, and density that can be observed on aerial photography are the primary reasons for creation of new polygons. The target minimum mapping size for vegetation types is five acres. However, more unique features such as ponds and rock outcrops that are detectable on resource photography may be mapped down to as small as one acre. Similarly, timber harvest, silviculture treatments, or other disturbances, one acre or larger, that result in significant change in vegetation may also be defined as unique FOIVEG_POLY polygons.

Overlapping or multi-part polygons are not allowed. When creating a new vegetation polygon, the boundaries of the surrounding polygons must be adjusted so that this does not occur. In the past, FOIVEG_POLY polygons needed to be mapped to match BLM administered land boundaries, township, range and section line delineations, county boundaries, and Resource Area boundaries. However, except for staying within BLM administered lands and within district boundaries, the FOIVEG_POLY polygons can cross over these administrative lines to describe the continuity of a forest stand.

The attributes for the OI key number, stand description, and age class are derived from the M*S database. The OI key number is unique for every polygon. There is a M*S tool to get the next available OI_KEY available for a new vegetation entity based on the district. Once a new polygon is created, edits are made in M*S that update these FOIVEG_POLY attributes.

Example 1: A 20 acre regeneration timber sale unit was sold and harvested out of a 100 acre stand of older timber that was previously delineated in FOIVEG_POLY. A new vegetation polygon is created in FOIVEG_POLY utilizing the timber sale boundary that had been traversed by Global Positioning System (GPS). The boundary of the older stand is modified so that there are no overlaps and is contiguous with the boundary of the new unit. Utilizing M*S, the new polygon acquires a unique OI Key number and the vegetation attributes are entered for the new stand. This process updates the stand description and age class in FOIVEG_POLY.

Example 2: A thinning treatment, captured on the relevant HARV_POLY feature class, with scattered quarter-acre skips and gaps was applied to an existing FOIVEG_POLY polygon. Since the entire area was treated, a new boundary is not necessary in FOIVEG_POLY and the scattered small pockets of skips or gaps are not appropriate to be distinguished as unique polygons. If the species composition or density has significantly changed, those attributes may need to be edited in M*S, but the birth year or age class would not change.

Digitizing Vegetation: Vegetation polygons can be collected and input in a variety of ways including manuscripting on maps and digitizing, traverses, GPS, on-screen digitizing using a Digital Orthophoto Quad or Digital Raster Graphic backdrop, duplicating lines from ownership, roads or stream layers, or a combination of these. Vegetation boundaries that are based on identifiable features such as roads, streams, or ownership should copy or snap to those source line features to illustrate the cartographic relationship.

Linking Fields: For Western Oregon, the Operations Inventory Key Number (OI_Key) provides the link to the related Stand and Layer tables in M*S and the EcoSurvey database. The OI_Key will also be used to populate the LOCAL_LINK attribute of the survey and treatment feature classes in the initial load of these datasets.

3.3 ATTRIBUTE DESIGN CONSIDERATIONS

FOIVEG_POLY is designed to provide the summary stand description and age class attributes. Editing of these attributes are done in the stand attribute and layer related tables of M*S. The derived stand description is a concatenation of the forest cover type and the layer information. The ten year age class comes from the birth year of the layer designated as the management layer in M*S. The District Defined Fields are designed to be controlled by District and Regional Stewards and used for specific state or district considerations, such as Resource Management Plan information. Additional vegetation information and stand metrics are found in M*S and linked by the OI_Key attribute, but are not made a part of the FOIVEG_POLY attributes (See Section 8 for more details).

3.4 UPDATE FREQUENCY AND ARCHIVAL PROTOCOLS

The State Data Steward and/or the program lead will establish the policy for update frequency and completeness for the Forest Vegetation (FOIVEG_POLY) data and the associated M*S application. Updates would be based on disturbances or treatments that change the vegetation type or age class, such as fire or harvest. District resource specialists work with GIS specialists to map spatial extents of the forest vegetation. The theme is checked for spatial and attribute accuracy as data is input. Additions might be monthly, or quarterly but, at least, annually. District specialists need to ensure that data in the Forest Vegetation (FOIVEG_POLY) theme are complimentary with associated records in the EcoSurvey and M*S applications.

3.5 STATEWIDE MONITORING

The State Data Steward, and/or the Program Lead assisted by the Lead GIS Specialist, are responsible for checking consistency across districts for the forest vegetation theme (FOIVEG_POLY). The Program Lead is responsible for coordinating the response to state and national BLM data calls. State

Office GIS specialists and the State Data Steward will work with the Program Lead to appropriately select and compile the data from the forest vegetation theme (FOIVEG_POLY).

4 FOREST VEGETATION GEODATABASE SCHEMA (simplified)

General Information: Attributes are listed in the order they appear in the geodatabase feature class. The order is an indication of the importance of the attribute for theme definition and use. Attributes are listed alphabetically and more fully described in the Attribute Characteristics (Section 7), starting on page 15. There are no aliases unless specifically noted. The domains used in this data standard can be found in Appendix A. These are the domains at the time the data standard was approved. Domains can be changed without a re-issue of the data standard so those shown in Appendix A may not be current. Many (but not all) of the domains used in this data standard are available at the following web site:

<http://www.blm.gov/or/datamanagement/index.php>

For domains not listed at that site contact:

OR/WA State Data Administrator
Bureau of Land Management
P.O. Box 2965
Portland, OR 97208
503-808-6009

4.1 FOIVEG_POLY Feature Class (Forest Operations Inventory Vegetation)

¹ These attributes are required and auto-filled in the Micro*Storms application for western Oregon BLM districts.

² Auto-filled by Micro*Storms.

³ Auto-filled by SDE version management

⁴ These attributes will not be in the published version.

Attribute Name	Data Type	Length	Default Value	Required	Domain
BLM_ORG_CD ¹	String	5		Yes	dom_BLM_ORG_CD
OI_KEY ¹	Integer	Long		Yes	
OI_STAND_DESC ¹	String	255		Yes	
OI_AGECLS_10 ²	Integer	Short		No	
OI_AGECLS_10_DT ^{2,4}	String	8		No	
GIS_ACRES ³	Double	16,4		Yes	
OI_TRS ^{2,4}	String	25		No	

OI_UNITNO ⁴	String	3		No	
OI_DD1 ⁴	String	255		No	
OI_DD2 ⁴	String	255		No	
OI_DD3 ⁴	String	255		No	
OI_DD4 ⁴	Double	16,4		No	
OI_DD5 ⁴	Double	16,4		No	
OI_DD6 ⁴	Double	16,4		No	
COORD_SRC	String	7		No	dom_COORD_SRC
ACCURACY_FT	Integer	Short		No	
OI_VEGRMKS ⁴	String	2000		No	
VERSION_NAME ³	String	50	InitialLoad	Yes	

5 PROJECTION AND SPATIAL EXTENT

All feature classes and feature datasets are in Geographic, North American Datum 83. Units are decimal degrees. Spatial extent (area of coverage) includes all lands managed by the BLM OR/WA, bordered on the North by Latitude 49.5, on the South by Latitude 41.5, on the East by Longitude -116 and on the West by Longitude -125.

6 SPATIAL ENTITY CHARACTERISTICS

FOIVEG_POLY

Description: Instance of Current Cover group.

Geometry: Polygons must not overlap entirely or in part. Simple polygons, not multi-part, are used.

Topology: Yes

Integration Requirements: None (see Editing Procedures section).

7 ATTRIBUTE CHARACTERISTICS AND DEFINITION (In alphabetical order)

7.1 ACCURACY_FT

Geodatabase Name	ACCURACY_FT
BLM Structured Name	Accuracy_Feet_Measure
Inheritance	Inherited from Entity RESOURCES
Feature Class Use	FOIVEG_POLY
Definition	How close, in feet, the spatial GIS depiction is in relation to the actual location on the ground. There are several factors to consider in GIS error: scale and accuracy of map-based sources, accuracy of GPS equipment, and the skill level of the data manipulators. A value of "0" indicates no entry was made. This is the correct value when the COORD_SRC is another GIS theme (Digital Line Graph, Cadastral National Spatial Data Infrastructure and Digital Elevation Model) because the accuracy is determined by that theme. However, if COORD_SRC is MAP (digitized from a paper map) or GPS, a value of "0" indicates a missing value that should be filled in either with a non-zero number or "-1." A value of "-1" indicates the accuracy is unknown and no reliable estimate can be made.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 3 (for high accuracy GPS), 40 (best possible for USGS 24K topo map), 200
Data Type	Short Integer

7.2 BLM_ORG_CD

Geodatabase Name	BLM_ORG_CD
BLM Structured Name	Administrative_Unit_Organization_Code
Inheritance	Inherited from Entity RESOURCES
Feature Class Use	FOIVEG_POLY
Definition	A combination of the BLM administrative state and field office which has administrative responsibility for the spatial entity. This includes which office covers the entity for planning purposes and which office is the lead for GIS edits. Another agency or individual may have the physical management responsibility for the on-the-ground entity. This field applies particularly when a spatial entity crosses resource area or district boundaries and the administrative responsibility is assigned to one or the other rather than splitting the spatial unit. Similarly, BLM OR/WA may have administrative responsibility over some area that is physically located in Nevada, Idaho, and California and vice versa. When appropriate, the office can be identified only to the district or state level rather than to the resource area level.

Required/Optional	Required. This attribute is required and auto-filled in the Micro*Storms application for western Oregon BLM districts.
Domain (Valid Values)	dom_BLM_ORG_CD Domain is a subset of the BLM national domain for organization codes. Only positions three through seven of the national code are used (leading LL and trailing zeros are dropped).
Data Type	String (5)

7.3 COORD_SRC

Geodatabase Name	COORD_SRC
BLM Structured Name	Coordinate_Source_Code
Inheritance	Inherited from Entity RESOURCES
Feature Class Use	All feature classes
Definition	The actual source of the GIS coordinates for the polylines. If the line is copied from another theme, and already has COORD_SRC, it should be reviewed and may need to be changed for use in this dataset.
Required/Optional	Optional
Domain (Valid Values)	dom_COORD_SRC
Data Type	String (7)

7.4 GIS_ACRES

Geodatabase Name	GIS_ACRES									
BLM Structured Name	GIS_Acres_Measure									
Inheritance	Inherited from Entity RESOURCES									
Feature Class Use	FOIVEG_POLY									
Definition	<p>GIS_ACRES is calculated when the submitted polygon is approved for incorporation into the dataset. The standard spatial reference of Geographic (NAD 1983) cannot be used for calculating acres so the features are projected to one of three projections as determined by the BLM_ORG_CD of the record. These three projections all utilize linear units of meters, so the ESRI Geodatabase-controlled field SHAPE.AREA can be used to convert to acres with the factor based on the U.S. Survey Foot:</p> $\text{GIS_ACRES} = \text{SHAPE.AREA} * 0.0002471044$ <table border="1" data-bbox="500 1654 1464 1879"> <thead> <tr> <th>District indicated by BLM_ORG_CD:</th> <th>ESRI Projection used:</th> </tr> </thead> <tbody> <tr> <td>Prineville</td> <td>NAD 1983 USFS R6 Albers</td> </tr> <tr> <td>Coos Bay, Eugene, Lakeview, Medford, Roseburg, Salem</td> <td>NAD 1983 UTM Zone 10N</td> </tr> <tr> <td>Burns, Spokane, Vale</td> <td>NAD 1983 UTM Zone 11N</td> </tr> </tbody> </table>		District indicated by BLM_ORG_CD:	ESRI Projection used:	Prineville	NAD 1983 USFS R6 Albers	Coos Bay, Eugene, Lakeview, Medford, Roseburg, Salem	NAD 1983 UTM Zone 10N	Burns, Spokane, Vale	NAD 1983 UTM Zone 11N
District indicated by BLM_ORG_CD:	ESRI Projection used:									
Prineville	NAD 1983 USFS R6 Albers									
Coos Bay, Eugene, Lakeview, Medford, Roseburg, Salem	NAD 1983 UTM Zone 10N									
Burns, Spokane, Vale	NAD 1983 UTM Zone 11N									

Required/Optional	Required. Auto-filled by SDE version management.
Domain (Valid Values)	No domain
Data Type	Decimal (16,6)

7.5 OI_AGECLS_10

Geodatabase Name	OI_AGECLS_10		
BLM Structured Name	Ten_Year_Age_Class_Code		
Inheritance	Inherited from Entity LANDSCAPE COVER		
Feature Class Use	FOIVEG_POLY		
Definition	Ten Year Age Class (OI_AGECLS_10) for the stand is derived from:		
	Description	M*S Related Table Field	Most Recent Source
	Birth Year	MS_LAYERS/LYR_BYR	MS_LAYERS/LYR_SRC_DT
	Stand layer designated for management	MS_STAND/SA_AGECLS_LYR	MS_STAND_SA_STAND_SRC_DT
	Derived from the birth year using the most recent source stand layer designated for management in the stand attributes table of M*S. If the stand has multiple tree layers, an assignment is made of the stand layer designated for management. Stand ages 0-4 years are assigned Ten Year Age Class of 5, stand ages 5-14 are assigned Ten Year Age Class of 10, stand ages 15-24 are assigned Ten Year Age Class of 20, etc.		
Required/Optional	Optional. Auto-filled by Micro*Storms.		
Domain(Valid Values)	No domain. Examples: 250, 170, 90, 50, 30		
Data Type	Integer (3)		

7.6 OI_AGECLS_10_DT

Geodatabase Name	OI_AGECLS_10_DT
BLM Structured Name	Ten_Year_Age_Class_Date
Inheritance	Inherited from Entity LANDSCAPE COVER

Feature Class Use	FOIVEG_POLY
Definition	Date when Ten Year Age Class for the stand was last calculated. Auto calc when OI_AGECLS_10 is updated. Update each new year in January.
Required/Optional	Optional. Auto-filled by Micro*Storms and will not be in the published version.
Domain (Valid Values)	No domain. Examples: 20090108, 20130109
Data Type	String (8)

7.7 OI_DD1

Geodatabase Name	OI_DD1
BLM Structured Name	First_District_Defined_Text
Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY
Definition	District defined text field controlled by District and Regional Stewards
Required/Optional	Optional. This attribute will not be in the published version.
Domain (Valid Values)	No domain. Examples: 'DHO2', 'MD03 MD10 MD11', 'NLCS'
Data Type	String (255)

7.8 OI_DD2

Geodatabase Name	OI_DD2
BLM Structured Name	Second_District_Defined_Text
Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY
Definition	District defined text field controlled by District and Regional Stewards
Required/Optional	Optional. This attribute will not be in the published version.
Domain (Valid Values)	No domain. Examples: 'NF', 'SE_WOL', 'YHD_WOL'
Data Type	String (255)

7.9 OI_DD3

Geodatabase Name	OI_DD3
BLM Structured Name	Third_District_Defined_Text

Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY
Definition	District defined text field controlled by District and Regional Stewards
Required/Optional	Optional. This attribute will not be in the published version.
Domain (Valid Values)	No domain. Examples: '7/13/1997', '4/30/1998', 'NW', 'N_MX_CON'
Data Type	String (255)

7.10 OI_DD4

Geodatabase Name	OI_DD4
BLM Structured Name	First_District_Defined_Number
Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY
Definition	District defined number field controlled by District and Regional Stewards
Required/Optional	Optional. This attribute will not be in the published version.
Domain (Valid Values)	No domain. Examples: 1, 4014, 1109615
Data Type	Double (16,4)

7.11 OI_DD5

Geodatabase Name	OI_DD5
BLM Structured Name	Second_District_Defined_Number
Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY
Definition	District defined number field controlled by District and Regional Stewards
Required/Optional	Optional. This attribute will not be in the published version.
Domain (Valid Values)	No domain. Examples: NULL
Data Type	Double (16,4)

7.12 OI_DD6

Geodatabase Name	OI_DD6
BLM Structured Name	Third_District_Defined_Number
Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY

Definition	District defined number field controlled by District and Regional Stewards
Required/Optional	Optional. This attribute will not be in the published version.
Domain (Valid Values)	No domain. Examples: 1, 85, 99, 576
Data Type	Double (16,4)

7.13 OI_KEY

Geodatabase Name	OI_KEY
BLM Structured Name	Operations_Inventory_Key_Number
Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY
Definition	This Primary Key is a unique 5 or 6-digit number assigned to each unit as they are entered. In M*S it is a required entry that is assigned by the program and is non-editable. This number is used for the various table relationships. Read Only/Display Only.
Required/Optional	Required. This attribute is required and auto-filled in the Micro*Storms application for western Oregon BLM districts.
Domain (Valid Values)	No domain. Examples: 41022, 130712
Data Type	Integer, Long (6)

7.14 OI_STAND_DESC

Geodatabase Name	OI_STAND_DESC		
BLM Structured Name	Entire_Stand_Description_Text		
Inheritance	Inherited from Entity LANDSCAPE COVER		
Feature Class Use	FOIVEG_POLY		
Definition	OI_STAND_DESC – Entire Stand Description concatenates MS_STAND/SA_CovrType, indicating the type of forest or non-forest vegetation, with a developed Stand Description from a combination of MS_LAYERS and MS_LYR_SPP fields.		
	Descriptio n	M*S Related Table Field	Most Recent Source
	Stand Cover Type	MS_STAND/SA_CovrType	MS_STAND_SA_STAND_SRC_ DT

	<table border="1"> <tr> <td>Layer</td> <td>MS_LAYERS/LYR_LAYER</td> <td rowspan="6">MS_LAYERS/LYR_SRC_DT</td> </tr> <tr> <td>Layer Major Species</td> <td>MS_LYR_SPP/SL_MAJ_MIN equals 'Major'</td> </tr> <tr> <td>Species</td> <td>MS_LYR_SPP/SL_SPECIES</td> </tr> <tr> <td>Species Diameter Class</td> <td>MS_LYR_SPP/SL_DBH_CLASS</td> </tr> <tr> <td>Layer Stocking Class</td> <td>MS_LAYERS/LYR_STOCKING_CLASSES</td> </tr> <tr> <td>Layer Birth Year</td> <td>MS_LAYERS/LYR_BIRTH_YEAR</td> </tr> </table> <p>The Stand Description, based on the most recent layer source date data, is generated by the application which lists the major species timber types, diameter class, stocking class level, and birth year for each of the Top/Middle/Bottom layers (if present) using the following format:</p> <ul style="list-style-type: none"> o (Top layer Species1)(DBH Class)(top layer Species2)(DBH Class) {etc. for all species designated as Major}(Top layer Stocking Class)(Top layer Birth Year)[/](Middle layer Species1)(DBH Class)(Middle layer Species2)(DBH Class) {etc. for all species designated as Major}(Middle layer Stocking Class)(Middle layer Birth Year)[/](Bottom layer Species1)(DBH Class)(Bottom layer Species2)(DBH Class) {etc. for all species designated as Major}(Bottom layer Stocking Class)(Bottom layer Birth Year) o Examples: <ul style="list-style-type: none"> ▪ One layer stand: D4H4-=1900 ▪ Two layer stand: RA3-=1900/D2-1950 ▪ Three layer stand: D4-1900/D2MA2=1950/H1=2004 	Layer	MS_LAYERS/LYR_LAYER	MS_LAYERS/LYR_SRC_DT	Layer Major Species	MS_LYR_SPP/SL_MAJ_MIN equals 'Major'	Species	MS_LYR_SPP/SL_SPECIES	Species Diameter Class	MS_LYR_SPP/SL_DBH_CLASS	Layer Stocking Class	MS_LAYERS/LYR_STOCKING_CLASSES	Layer Birth Year	MS_LAYERS/LYR_BIRTH_YEAR
Layer	MS_LAYERS/LYR_LAYER	MS_LAYERS/LYR_SRC_DT												
Layer Major Species	MS_LYR_SPP/SL_MAJ_MIN equals 'Major'													
Species	MS_LYR_SPP/SL_SPECIES													
Species Diameter Class	MS_LYR_SPP/SL_DBH_CLASS													
Layer Stocking Class	MS_LAYERS/LYR_STOCKING_CLASSES													
Layer Birth Year	MS_LAYERS/LYR_BIRTH_YEAR													
Required/Optional	Required. This attribute is required and auto-filled in the Micro*Storms application for western Oregon BLM districts.													
Domain (Valid Values)	No domain. Examples: 'FCO A1D1WP1-=1987', 'FCO D2-1936//D1-1998', 'FMX D5RA3=1800//A4H4-1860'													
Data Type	String (255)													

7.15 OI_TRS

Geodatabase Name	OI_TRS
BLM Structured Name	Township_Range_Section_Label
Inheritance	Inherited from Entity CadNSDI National Standard
Feature Class Use	FOIVEG_POLY

Definition	Township/Range/Section label used for cartographic output or web display. If a unit covers multiple sections, the section of the majority of the unit is listed.
Required/Optional	Optional. Auto-filled by Micro*Storms and will not be in the published version.
Domain (Valid Values)	No domain. Examples: 'T01N-R08W-31', 'T41S-R15E-4'
Data Type	String (25)

7.16 OI_UNITNO

Geodatabase Name	OI_UNITNO
BLM Structured Name	Unit_Identifier_Number
Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY
Definition	A value assigned by the user to each unit.
Required/Optional	Optional. This attribute will not be in the published version.
Domain (Valid Values)	No domain. Examples: '005', '041', '997' or blank
Data Type	String (3)

7.17 OI_VEGRMKS

Geodatabase Name	OI_VEGRMKS
BLM Structured Name	Vegetation_Remarks_Text
Inheritance	Inherited from Entity LANDSCAPE COVER
Feature Class Use	FOIVEG_POLY
Definition	Text field for any remarks on the OI Unit.
Required/Optional	Optional. This attribute will not be in the published version.
Domain (Valid Values)	No domain. Examples: 'Stand Exam Remarks: Lower stocking, smaller trees on south aspect', 'Land became BLM in 1999 through BLM/USFS Land Exchange'.
Data Type	String (2000)

7.18 VERSION_NAME

Geodatabase Name	VERSION_NAME
BLM Structured Name	Geodatabase_Version_Text
Inheritance	Inherited from Entity LANDSCAPE COVER

Feature Class Use	All feature classes
Definition	<p>Name of the corporate geodatabase version previously used to edit the record.</p> <p>InitialLoad = feature has not been edited in ArcSDE.</p> <p>Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation.</p> <p>Example: sfrazier.FOIVEG_POLY-121210-111034</p> <p>Only appears in the transactional (edit) version. Public version (which is also the version used internally for mapping or analysis) does not contain this attribute.</p>
Required/Optional	Required. Auto-filled by SDE version management.
Domain (Valid Values)	No domain Example: (see above)
Data Type	String (50)

8 LAYER FILES (PUBLICATION VIEWS)

8.1 GENERAL BACKGROUND

Master corporate feature classes/datasets maintained in the edit database (currently orsoedit) are “published” to the user database (currently orsovctr) in several ways:

- A. Copied completely with no changes (replicated).
- B. Copied with no changes except to omit one or more feature classes from a feature dataset.
- C. Minor changes made (e.g., clip, dissolve, union with ownership) in order to make the data easier to use.

These “Publication feature classes” are indicated by “PUB” in their name. They are created through scripts that can be executed and are easily rebuilt from the master (orsoedit) data whenever necessary.

Layer files are not new data requiring storage and maintenance but point to existing data. They have appropriate selection and symbolization for correct use and display of the data. They provide the guidance for data published on the web. Layer files are created by simple, documented processes, and can be deleted and recreated at any time.

All datasets are published, both internally and externally, with the attribute VERSION_NAME removed (for privacy reasons).

8.2 SPECIFIC TO THIS DATASET

The following table shows the data to be displayed in the published version of FOIVEG_POLY, FOIVEG_PUB_POLY. The publication feature class includes additional fields derived from related tables in the M*S application. This published version will also appear on the public data download site on the BLM OR/WA internet (<http://www.blm.gov/or/gis/data.php>). The documentation for M*S can be found in the separate BLM OR/WA Micro*Storms User Guide document. The domains for the related tables in M*S are found in Appendix B.

FOIVEG_PUB_POLY (Publication Dataset)

Attribute Name	Definition	Data Type	Length	Domain	M*S Source to Derive Attribute (Table Name/Field Name)
BLM_ORG_CD	Same as Section 7	String	5	dom_BLM_ORG_CD	FOIVEG_POLY/BLM_ORG_CD

OI_KEY	Same as Section 7	Integer	Long		FOIVEG_POLY/OI_KEY
CLASSIFIER	Individual responsible for the latest classification update, if known.	String	30		MS_STAND/SA_CLASSIFIER for the most recent MS_STAND/SA_STAND_SRC_DT
COVRTYPE	Cover Type - Broad classification of the stand to distinguish forested from nonforested conditions. Forested types are further described for the dominate forest cover type – conifers, hardwoods, or mixed. If the area is currently not in a forested type (recently harvested) but is capable of being forested then it is described as Forested – currently nonstocked. Non forested types not capable of growing a forest are further described – water, marsh and rock for examples.	String	3	dom_COVRTYPE	MS_STAND/SA_COVRTYPE for the most recent MS_STAND/SA_STAND_SRC_DT
STAND_DESC	Stand Description - generated by the application that concatenates the Cover Type indicating the type of forest or non-forest vegetation, with a stand description from a combination of Layer and Layer Species fields, based on the most recent layer source date. The stand description lists the major species timber types, Diameter Class, Stocking Level, and Birthyear for each of the Top/Middle/Bottom layers (if present). See the Micro*Storms User Guide for details.	String	255		FOIVEG_POLY/OI_STAND_DESC
STAND_STRUC	Stand Structure - The degree of uniformity of the stand canopy structure across the polygon, Even or Uneven Aged. NF applies to Non-Forest and Unknown applies to unclassified stands prior to the data migration May 11-25, 2015.	String	8	dom_STAND_STRUC	MS_STAND/SA_STAND_STRUC for the most recent MS_STAND/SA_STAND_SRC_DT
AGECLS_BYR	Age Class Birth Year - Estimated or average birth year for trees in the stand layer designated for management. If the stand has multiple tree layers, an assignment is made for that portion of the stand that is going to be managed.	Integer	Short		MS_LAYER/LYR_BYR for the most recent MS_LAYERS/LYR_SRC_DT
AGECLS_10	Ten Year Age Class - derived from the age class birth year of the stand layer designated for management. Stand ages 0-4 years are assigned Ten Year Age Class of 5, stand ages 5-14 are assigned 10, stand ages 15-24 are assigned 20, etc. Updated at the beginning of each new year.	Integer	Short		FOIVEG_POLY/OI_AGECLS_10

LYR_SRC	Layer Source - Description of the source data describing the method by which the data was collected. For example: aerial, walk-through, plots, EcoSurvey stand exam, etc	String	25	dom_SURV_SRC	MS_LAYER/LYR_SRC for the most recent MS_LAYERS/LYR_SRC_DT
LYR_SRC_DT	Layer Source Date - Date of the source data used to derive the Layer Source.	String	8		MS_LAYER/LYR_SRC_DT for the most recent MS_LAYER/LYR_SRC_DT
TPPA	Stand Total Trees Per Acre - The stand total live seedling, sapling, and merchantable trees per acre.	Integer	Short		MS_STAND/SA_TTPA for the most recent MS_STAND/SA_STAND_SRC_DT
QMD	Quadratic Mean Diameter - the diameter of average basal area per tree. EcoSurvey stand exam calculation uses sapling and merchantable live trees only. Saplings are trees with a diameter at breast height of less than 7 inches. The value is expressed in inches as: $QMD = \sqrt{(BA / TPA / 0.005454154)}$.	Double	4,1		MS_STAND/SA_QMD for the most recent MS_STAND/SA_STAND_SRC_DT
BA	Stand Basal Area - The sum total basal area per acre for all live conifer and hardwood trees with a diameter at breast height for all layers.	Integer	Short		MS_STAND/SA_BA for the most recent MS_STAND/SA_STAND_SRC_DT
CURTIS_RD	Curtis Relative Density - A simple and convenient scale for relative stand density for Douglas-fir provided by the expression, $Curtis\ RD = BA/\sqrt{QMD}$.	Double	4,2		MS_STAND/SA_CURTIS_RD for the most recent MS_STAND/SA_STAND_SRC_DT
SDI	Stand Density Index - An index that expresses relative stand density in terms of the relationship of the number of trees per acre to stand quadratic mean diameter. The value is expressed in number of trees per acre. $SDI = TPA * (QMD/10)1.605$	Integer	Short		MS_STAND/SA_SDI for the most recent MS_STAND/SA_STAND_SRC_DT
CNPYCOVR	Stand Canopy Cover – degree of canopy cover expressed as a value in percent.	Integer	Short		MS_STAND/SA_CNPYCOVR for the most recent MS_STAND/SA_STAND_SRC_DT
TPA7	Trees per Acre 7 inches+ - The stand total live trees per acre for trees greater than or equal to 7 inches diameter at breast height (DBH).	Integer	Short		MS_STAND/SA_TPA7 for the most recent MS_STAND/SA_STAND_SRC_DT
QMD7	Quadratic Mean Diameter 7 inches+ - the diameter of the tree of average basal area for trees with a DBH of 7 inches or greater. The value is expressed in inches as: $QMD7 = \sqrt{(BA7 / TPA7 / 0.005454154)}$.	Double	4,1		MS_STAND/SA_QMD7 for the most recent MS_STAND/SA_STAND_SRC_DT

BA7	Stand Basal Area - The sum total basal area per acre for all live conifer and hardwood trees greater than or equal to 7 inches DBH for all layers.	Integer	Short		MS_STAND/SA_BA7 for the most recent MS_STAND/SA_STAN D_SRC_DT
CURTIS_RD7	Curtis Relative Density for trees greater than or equal to 7 inches DBH provided by the expression, Curtis RD7 = BA7/ sqrt(QMD7).	Double	4,2		MS_STAND/SA_CURT IS_RD7 for the most recent MS_STAND/SA_STAN D_SRC_DT
MBF_AC	Volume per Acre (MBF) - The merchantable live conifer and commercial hardwood net volume per acre in thousands of board feet. Historically, this field was labeled Mature Green Conifer MBF Per Acre and it was filled with a variety of volume values. EcoSurvey stand exam calculations use merchantable live conifer and commercial hardwood trees only as defined by the user. Saplings, trees with DBH less than 7 inches, are not included. However, the user can specify lower diameter limits with EcoSurvey.	Double	5,1		MS_STAND/SA_MBF_ AC for the most recent MS_STAND/SA_STAN D_SRC_DT
STAND_SRC	Stand Source - Description of the source data describing the method by which the data was collected. For example: aerial, walk-through, plots, EcoSurvey stand exam, etc	String	25	dom_SURV _SRC	MS_STAND/SA_STAN D_SRC for the most recent MS_STAND/SA_STAN D_SRC_DT
STAND_SRC_DT	Stand Source Date - Date of the source data used to derive the Stand Source.	String	8		MS_STAND/SA_STAN D_SRC_DT for the most recent MS_STAND/SA_STAN D_SRC_DT
SCLS100	100 Year Site Class - Average 100 year site class. Some site index tables do not include site class therefore site class may be blank. EcoSurvey calculates site class from individual tree height and breast height age site indices averaged for the stand.	Integer	Short		MS_STAND/SA_SCLS 100 for the most recent MS_STAND/SA_SITEC LS_SRC_DT
SCLS50	50 Year Site Class - Average 50 year site class. Some site index tables do not include site class therefore site class may be blank. EcoSurvey calculates site class from individual tree height and breast height age site indices averaged for the stand.	Integer	Short		MS_STAND/SA_SCLS 50 for the most recent MS_STAND/SA_SITEC LS_SRC_DT
SITECLS_SRC	Site Class Source - Description of the source data describing the method by which the data was collected.	String	25	dom_SURV _SRC	MS_STAND/SA_SITEC LS_SRC for the most recent MS_STAND/SA_SITEC LS_SRC_DT
SITECLS_SRC_DT	Site Class Source Date - Date of the source data used to derive the Site	String	8		MS_STAND/SA_SITEC LS_SRC_DT

	Class Source.				for the most recent MS_STAND/SA_SITECLS_SRC_DT
PAG	Plant Association Group – Plant association based on key vegetative species.	String	7	dom_PAG	MS_STAND/SA_PAG for the most recent MS_STAND/SA_STAND_SRC_DT
PAG_SRC	Plant Association Group Source. The source used to determine the Plant Association Group.	String	3	dom_PAG_SRC	MS_STAND/SA_PAG_SRC for the most recent MS_STAND/SA_STAND_SRC_DT
GIS_ACRES	GIS Acres - Gross polygon acres including road and non-forest acres.	Double	16,4		FOIVEG_POLY/GIS_ACRES
GIS_RDAC	GIS Road Acres Calculated - Auto calculated based on a 22.5 foot (45' total) buffer on the GTRN feature classes intersected from the FOI-VEG unit GIS_ACRES to derive the GIS Road Acres. The buffer omits full decommission (FD) or obliterated (OB) roads.	Double	16,4		Derived
GIS_NONFORESTAC	GIS Non-forest Acres Calculated – Auto calculated based on the intersected sum total non-forested acres within the FOI-VEG unit apart from the buffered road acres. The FOI-VEG unit without the road acres is intersected with the polygons classified as withdrawn in the TPC_POLY feature class. See the Micro*Storms User Guide for details.	Double	16,4		Derived
GIS_FORESTAC	GIS Forest Acres Calculated - Acres equals GIS_ACRES minus GIS_RDAC minus GIS_NONFORESTAC.	Double	16,4		Derived
GIS_FOREST_NO NAC	GIS Forested and Non-forest Acres Calculated - Acres equals GIS_ACRES minus GIS_RDAC.	Double	16,4		Derived

9 EDITING PROCEDURES

9.1 GENERAL GUIDANCE FOR SPATIAL AND ATTRIBUTE CHANGES

The Forest Operations Inventory Vegetation (FOI-VEG) as it's name implies is a set of polygons that describe classified forest vegetation as well as the ability to operate within the unit for treatments and/or harvest. Maintaining this dual definition worked well during the years when Western Oregon BLM forest stands under the O&C Act were managed for even aged sustained yields. With the movement

toward forest management for habitat development in the last 20 years this dual definition becomes increasingly difficult to sustain.

For the revised FOI-VEG feature class as of May, 2015 based on a silviculture group decision from BLM district representatives, this dual definition will still be maintained. However, the following edit guide will take a hierarchical approach with the primary focus on classifying forest vegetation and the secondary focus on operations. The forest vegetation focus allows forest stand polygons of similar vegetation to be aggregated for modeling as well as analysis of habitat development. At the District level, FOI-VEG can be a derived feature class based on a composite overlay of vegetation characteristics and operations-based polygons, but a corporate layer must be maintained to provide a basic unit of inventory and modeling consistent with the hierarchical factors of delineation listed here. Use the following hierarchical guide when making spatial and attribute edits.

Factors To Guide Spatial and Attribute Edits:

- Distinguishable, like kind forest vegetation is the primary delineation factor for polygons.
 - Use stand exam stand descriptions (species mix, size class, density, stand age, height, and structure) as a gauge to delineate differences for lumping or splitting FOI-VEG polygons.
 - Use LiDAR (if available) for forest stand major average height differences and densities.
 - Use the latest most accurate digital orthoquad imagery for significant changes in vegetative species composition, size and density.
 - Since most managed stands since the 1970's maintained good planting dates, use these birthdates and associated spatial areas for delineations.
 - Use previous treatments within portions of a unit, such as PCT, to consider splitting or combining.
 - Forest stand polygons can cross different section lines within BLM ownership but must stay within the district administrative unit.
- Take into consideration the historic and future operational treatment unit for decisions to lump or split polygons.
- Target minimum mapping feature for vegetation type at about 5 acres.
- Unique non-forest features such as ponds, rock outcrops, meadows etc. may be mapped to a minimum of 1 acre.
- Using these acreage guidelines, delineate non-forest, non-suitable woodland vegetation types, and/or withdrawals that may exist in the corporate special habitats or TPCC geodatabases.

GIS Reference Layers:

Other GIS reference layers are frequently used to define FOI-VEG polygons. Accuracy of these defining features in GIS is of varying quality. The spatial accuracy for any individual FOI-VEG polygon is relative to the accuracy and the quality of reference feature classes. As updates of the FOI-VEG are performed, the following order of GIS reference layers are given as a guide for defining polygon boundaries:

- CADNSDI representing the public land survey system (PLSS) and land line (LLI) data for ownership. PLSSPoint data contains an estimate of locational reliability.
- LiDAR where available for major average forest stand height differences, within-stand heterogeneity of tree height, and stand density.
- The latest most accurate digital orthoquad (DOQ) imagery, one meter or better resolution.
- Transportation themes
- GPS and/or traverse derived features
- Topography and hydrography
- Stand exam spatial location data

9.2 MANAGING OVERLAP

Within the FOIVEG_POLY feature class, “overlap” is not allowed. There cannot be more than one feature in the feature class that occupies the same space (“stacked” polygons).

Multi-part features are not allowed. Multi-part features are easily created inadvertently and not always easy to identify. If they are not consciously and consistently avoided, feature classes will end up with a mixture of single and multi-part features. Multi-part features can be more difficult to edit, query and select, along with impacting overall performance.

9.3 EDITING AND QUALITY CONTROL GUIDELINES

Checking for undesired duplicates is critical. Polygons or arcs that are 100% duplicate are easily found by searching for identical attributes along with identical Shape_Area and/or Shape_Length. Searching for partially overlapping arcs or polygons is harder, and each case must be inspected to delete the overlap.

Where polygons are created with the buffer tool, the correct option must be selected. The default selection is “None,” which means overlap will be retained. However, overlap is not allowed and should be dissolved and the option changed to “All.” Lines resulting from buffer have vertices too close together, especially around the end curves. They should be generalized to thin the vertices.

If the dissolve tool is used on polygons or arcs, the “Create multipart features” should be unchecked. The GPS linework is often messy and should always be checked and cleaned up as necessary. Multi-part polygons are sometimes inadvertently created when GPS files with vertices too close together or crossing lines or spikes are brought into ArcGIS. Tiny, unwanted polygons are created but are “hidden” because they are in a multi-part. It is critical to generalize and clean up GPS lines and to find and explode multi-part polygons.

Check any features that have “0” or very small Shape Area or Shape Length. If a feature has “0” geometry and you can’t zoom to it, it is probably an inadvertently created “Null” feature and should be deleted. Very, very small features may also be unintended, resulting from messy linework.

9.4 SNAPPING GUIDELINES

Where line segments with different COORD_SRC meet, the most accurate or important (in terms of legal boundary representation) are kept unaltered, and other lines snapped to them. In general, the Landlines Information (GCD points/lines) are of highest priority, however, see the description above for other reference layer guidance considerations. When snapping to the data indicated in COORD_SRC (as opposed to duplicating with copy/paste), be sure there are exactly the same number of vertices in the target, and source theme arcs.

Vegetation boundaries that are based on identifiable features such as roads, streams, or ownership should copy or snap to those source line features to illustrate the cartographic relationship.

9.5 EDITING GUIDANCE and QUALITY CONTROL CHECKLIST (Specific to FOIVEG_POLY)

Explode “multi-part” polygons. Check for “0” or very small Shape Area or Shape Length. See “Editing and Quality Control” guidance above on GPS linework and multi-part features.

Required attributes:

BLM_ORG_CD is a code to describe the BLM administrative state, district, and field office which has administrative responsibility for the spatial entity.

OI_Key is unique for all polygons. It is auto-filled in the Micro*Storms application for western Oregon BLM districts and is non-editable.

OI_STAND_DESC is concatenated from fields in the Micro*Storms application. The Stand Description, based on the most recent layer source data, is generated by the application which lists the major species timber types, diameter class, stocking class level, and birth year for each of the Top/Middle/Bottom layers (if present).

GIS Acres is calculated when the submitted polygon is approved and auto-filled into the dataset.

If an attribute has a domain, check for invalid values.

Dependencies between attributes:

OI_STAND_DESC is dependant on the Layer fields and the Stand CoverType field found in the Micro*Storms application for Western Oregon.

OI_AGECLS_10 is dependant on the stand description being a forested stand type. If the stand description is a non-forest type, the ten year age class will be blank.

Validate Topology:

Validate topology to confirm Polygons form a continuous seamless cover across the feature class with no overlaps.

10 OREGON/WASHINGTON DATA FRAMEWORK OVERVIEW

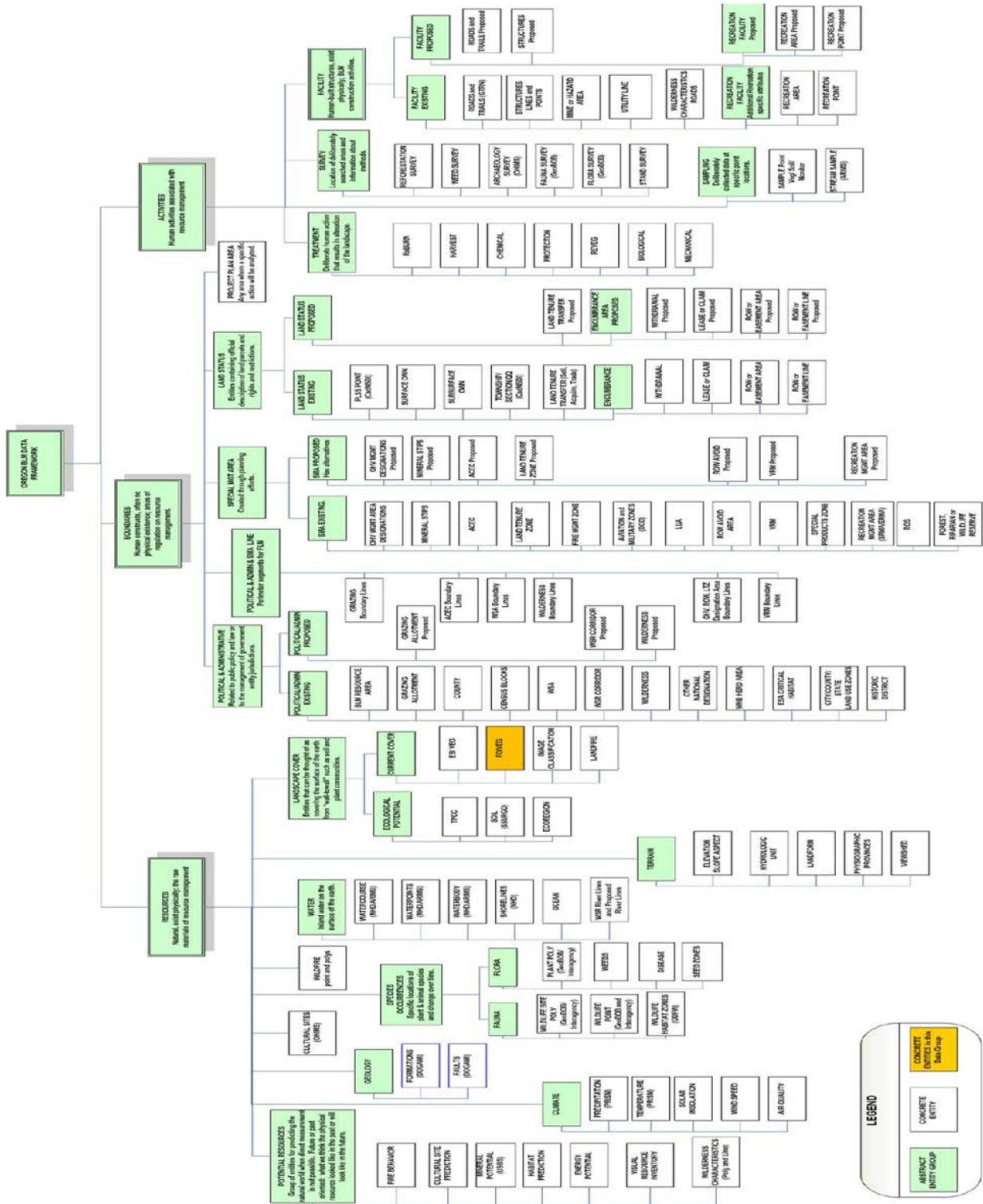


Figure 2 Oregon Data Framework Overview

11 ABBREVIATIONS AND ACRONYMS USED

(does not include abbreviations/acronyms used as codes for particular data attributes)

Abbreviations	Descriptions
AC	Acres
BLM	Bureau of Land Management
CADNSDI	Cadastral National Spatial Data Infrastructure
DEM	Digital Elevation Model
DLG	Digital Line Graphs
DOI	U.S. Department of the Interior
FOIA	Freedom of Information Act
FOI	Forest Operations Inventory
FOIVEG	Current forest stand vegetation portion of FOI
GCD	Geographic Coordinate Database
GIS	Geographic Information System
GPS	Global Positioning System
GRS	General Records Schedule
ID	Identifier
IDIQ	Indefinite Delivery/Indefinite Quantity
IM	Instruction Memorandum
M*S	Micro*Storms Application
NAD	North American Datum
ODA	Oregon Department of Agriculture
ODF	Oregon Data Framework
ODFW	Oregon Department of Fish and Wildlife
OR	Oregon
OR/WA	Oregon/Washington
SDE	Spatial Database Engine
USFS	United States Forest Service
USGS	United States Geological Survey

Table 2 Abbreviations/Acronyms Used

APPENDIX A: Domains (Valid Values) in the Edit Database

The domains listed below are those that were in effect at the time the data standard was approved and may not be current. Contact the State Data Administrator for current lists:

OR/WA State Data Administrator
 Bureau of Land Management
 P.O. Box 2965
 Portland, OR 97208
 503-808-6009

A.1 dom_BLM_ORG_CD (<http://www.blm.gov/or/datamanagement/index.php>)

OR000	OR000 – Oregon/Washington BLM
ORB00	ORB00 – Burns District Office
ORB05	ORB05 – Three Rivers Field Office
ORB06	ORB06 – Andrews Field Office
ORC00	ORC00 – Coos Bay District Office
ORC03	ORC03 – Umpqua Field Office
ORC04	ORC04 – Myrtlewood Field Office
ORE00	ORE00 – Eugene District Office
ORE05	ORE05 – Siuslaw Field Office
ORE06	ORE06 – Upper Willamette Field Office
ORL00	ORL00 – Lakeview District Office
ORL04	ORL04 – Klamath Falls Field Office
ORL05	ORL05 – Lakeview Field Office
ORM00	ORM00 – Medford District Office
ORM05	ORM05 – Butte Falls Field Office
ORM06	ORM06 – Ashland Field Office
ORM07	ORM07 – Grants Pass Field Office
ORP00	ORP00 – Prineville District Office
ORP04	ORP04 – Central Oregon Field Office
ORP06	ORP06 – Deschutes Field Office
ORR00	ORR00 – Roseburg District Office
ORR04	ORR04 – Swiftwater Field Office
ORR05	ORR05 – South River Field Office
ORS00	ORS00 – Salem District Office
ORS04	ORS04 – Cascades Field Office
ORS05	ORS05 – Mary’s Peak Field Office
ORS06	ORS06 – Tillamook Field Office
ORV00	ORV00 – Vale District Office
ORV04	ORV04 – Malheur Field Office
ORV05	ORV05 – Baker Field Office
ORV06	ORV06 – Jordan Field Office
ORW00	ORW00 – Spokane District Office
ORW02	ORW02 – Wenatchee Field Office
ORW03	ORW03 – Border Field Office

A.2 dom_COORD_SRC (<http://www.blm.gov/or/datamanagement/index.php>)

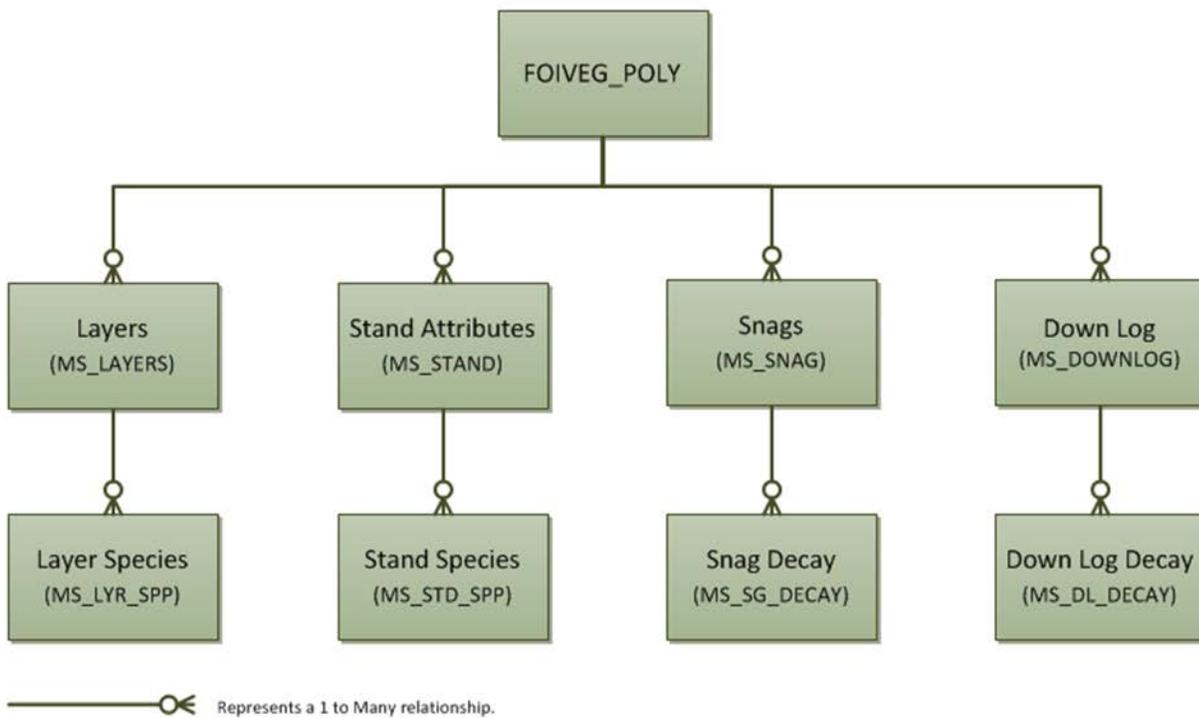
CADNSDI	CADNSDI – Lines from or snapped to the CADNSDI dataset
CFF	CFF – Lines duplicated or buffered from Cartographic Feature Files
DEM	DEM – Digital Elevation Model (30m or better accuracy) used for creation of contours
DLG	DLG – Lines duplicated or buffered from (24K scale accuracy) USGS Digital Line Graphs Typical Accuracies (40 feet)
DIS	DIS – Lines generated to connect discontinuous features
DLG	DLG – Lines duplicated or buffered from USGS Digital Line Graphs
DOQ	DOQ – Screen digitized linework over Digital Orthoquad backdrop
DRG	DRG – Screen digitized linework over Digital Raster Graphic backdrop
GCD	GCD – Lines snapped to Geographic Coordinate Database Points
GPS	GPS – Lines obtained from a Global Positioning System device
IMG	IMG – Linework derived from interpretation of non-photographic imagery
MAP	MAP – Digitized line work from hardcopy map
MTP	MTP – Lines duplicated from Digital Master Title Plat
SOURCEL	SOURCEL – Source layer from BLM GIS
SRV	SRV – Survey methods were used to create the linework
TIGER	TIGER – Tiger data
TRS	TRS – Coordinates only given as a legal description (township, range, section)
UNK	UNK – Unknown coordinate source
WOD	WOD – WODDB (Western Oregon Digital Database) Photogrammetric

APPENDIX B: Micro*Storms and FOI-VEG

B.1 Micro*Storms FOI-VEG Structure

B1.1 Overview Forest Operations Inventory Vegetation (FOI-VEG) Data Structure

The following pictured FOI-VEG Data Structure gives an overview of the relationship between the FOI-VEG data standard attributes and the Micro*Storms related tables.



B.2 Micro*Storms Related Tables and Definitions

The following related tables and their descriptions are specific to the Micro*Storms which are not part of the Oregon Data Framework. They were in effect at the time the data standard was approved and may not be current. They are located in ArcGIS geodatabase domain objects that are part of the Micro*Storms application. Contact the state Micro*Storms data steward for the current status.

Table	Field	Description
MS_DL_DECAY	DDC_DC	Down Log Decay Class describes the decomposition characteristics of down logs from 1 through 5.
MS_DL_DECAY	DDC_ID	Primary Key and Index
MS_DL_DECAY	DDC_TCFPA	Total Down Log Cubic Feet Per Acre - For each decay class, list the stands down log total cubic feet per acre.
MS_DL_DECAY	DDC_TCPPA	Total Down Log Cover Percent - For each decay class, list the stands down log total percent cover. Expressed in whole percent to one decimal place.
MS_DL_DECAY	DDC_TLPA	Total Down Log Length Per Acre - For each decay class, list the stands down log total length per acre.
MS_DL_DECAY	DDC_TPPA	Total Down Log Pieces Per Acre - For each decay class, list the stands down log total pieces per acre.
MS_DL_DECAY	DDC_TTPA	Total Down Log Tons Per Acre - For each decay class, list the stands down log total tons per acre.
MS_DL_DECAY	DL_ID	Foreign key link to MS_DOWNLOG table.
MS_DL_DECAY	OBJECTID	ArcGIS system identifier.
MS_DL_DECAY	VERSION_NAME	Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation
MS_DOWNLOG	DL_CLASSIFIER	Classifier - Individual responsible for the latest classification update, if known. For migrated data 'Unknown' was used for blanks. For the new application and future use, the name of the logged-in person at time of changes is auto filled.
MS_DOWNLOG	DL_ID	Primary Key and Index
MS_DOWNLOG	DL_MMD	Minimum Measured Diameter for Down Logs - Valid number between 0 and 20. List the minimum measured diameter for down logs. The EcoSurvey stand exam program allows the user to define the minimum measured diameter for data collection purposes. The calculations for down logs per acre by decay class include only down logs that meet this minimum.
MS_DOWNLOG	DL_MML	Minimum Measured Down Log Length - Valid number between 3 and 3099. List the minimum measured length. The EcoSurvey stand exam program allows the user to define the minimum measured down log length for data collection purposes. The calculations for down logs per acre by decay class include only down logs that meet this minimum.
MS_DOWNLOG	DL_SRC	Down Log Source - Description of the source data from the Domain for Survey Source (dom_SURV_SRC) which describes the method by which the data was collected. For example: aerial, walk-through, plots, EcoSurvey stand exam, etc.
MS_DOWNLOG	DL_SRC_DT	Down Log Source Date - Date of the source data used to derive the DL_SRC .
MS_DOWNLOG	OBJECTID	ArcGIS system identifier.
MS_DOWNLOG	OI_KEY	Foreign key link to FOIVEG_POLY. This is a 6-digit number assigned to each unit in tblOI. This number is the foreign key that links tblOI to tblStandAttributes in a one-to-many relationship. Only OI Key numbers that currently exist in tblOI can be assigned to this field, either programmatically or via a combo box filled with existing values.
MS_DOWNLOG	VERSION_NAME	Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-

Table	Field	Description
		mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation
MS_LAYERS	LYR_BA	Basal Area - BA of the layer (top, middle, or bottom) including all species for that particular layer.
MS_LAYERS	LYR_BYR	Birth Year of Layer - Estimated or average birthdate for trees in this layer. Required for tree layers.
MS_LAYERS	LYR_CC	Layer Percent Cover - Percent crown closure for a specific tree layer without resolution of canopy overlap between layers. Estimates for a particular layer never exceed 100%. Percent crown closure for the three tree layers includes both hardwoods and conifers and the resolution of crown overlap within the layer. For the Understory Layer, only non-tree species are included in the canopy cover estimates. Crown closure may be an ocular estimate or a measurement using a spherical densiometer, moosehorn or other such instrument.
MS_LAYERS	LYR_CLASSIFIER	Individual responsible for the latest classification update, if known.
MS_LAYERS	LYR_HT	Layer Height - Average top height of layer to nearest 10-foot increment.
MS_LAYERS	LYR_ID	Primary Key and Index
MS_LAYERS	LYR_LAYER	Three potential Tree Layers (top, middle, or bottom) and one Understory Vegetation (non-tree life forms) Layer. Required entry. When adding new tree layers, the application forces entry of the top layer first (in case it is a single layer stand), the bottom layer second (in case it is a two layer stand), and the middle layer third.
MS_LAYERS	LYR_SRC	Layer Species Source - Description of the source data from the domain for Survey Source (dom_SURV_SRC) which describes the method by which the data was collected. For example: aerial, walk-through, plots, EcoSurvey stand exam, etc.
MS_LAYERS	LYR_SRC_DT	Layer Species Source Date - Date of the source data used to derive the LYR_SRC.
MS_LAYERS	LYR_STKCLS	Numeric classification of forest stocking level related to Layer Canopy Cover or layer trees per acre. The Entire Stand Description uses the bar stocking which is taken from the Stocking Class Lookup table that equates to this numeric value for the layer. Required entry for tree layers.
MS_LAYERS	LYR_TPA	Trees per Acre - Estimated or sampled number of trees per acre in the layer.
MS_LAYERS	OBJECTID	ArcGIS system identifier.
MS_LAYERS	OI_KEY	Foreign key link to FOIVEG_POLY. This is a 6-digit number assigned to each unit in tbIOI. This number is the foreign key that links tbIOI to tbLayerStats in a one-to-many relationship. Only OI Key numbers that currently exist in tbIOI can be assigned to this field, either programatically or via a combo box filled with existing values.
MS_LAYERS	VERSION_NAME	Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation
MS_LYR_SPP	LYR_ID	Foreign key link to MS_LAYERS
MS_LYR_SPP	OBJECTID	ArcGIS system identifier.
MS_LYR_SPP	SL_DBH_SC	DBH Size Class per species per layer. Average DBH size class for a Major or Minor species within a layer. Required entry for tree layers.
MS_LYR_SPP	SL_ID	Primary Key and Index
MS_LYR_SPP	SL_MAJ_MIN	Major or Minor Species – The box is checked as true if the tree species is a Major species and not checked as false if a Minor tree species. It is recommended that major tree species make up at least 20% canopy cover. Within a layer, the sum of all the tree species identified as Major species must total to 100%. Minor tree species are those observed and which make up less than 20% canopy cover within a layer. Understory species are not identified as Major or Minor species. Only those species checked as Major show up in the stand description.

Table	Field	Description
MS_LYR_SPP	SL_SP_CR	Species Crown Ratio - For a Major or Minor tree species within a particular layer, the average percent of tree boles that supports live foliage.
MS_LYR_SPP	SL_SP_PCT	Percent of Major Species - Percent of Layer canopy cover by species. The sum of all Major tree species within a layer must total 100%. This rule is enforced by the program. Required entry for major tree species.
MS_LYR_SPP	SL_SPECIES	Plant/Tree Species. Tree or Understory (non-tree) Species codes. Two separate Lookup lists are associated with this field. One for Tree species the other for non-tree Understory vegetation. The program toggles to the proper species list depending on the Layer record selected on the Vegetation Description screen. Required entry.
MS_LYR_SPP	SL_US_PCT	Understory Species Percent - Average percent cover in 5-percent increments is usually sufficient for understory species. However, entries can be made to the nearest 1-percent. Use 1% to designate trace amounts.
MS_LYR_SPP	SL_US_SP_HT	Understory Species Height - Average height to the nearest foot. Species less than a foot in height should be assigned a height of zero.
MS_LYR_SPP	VERSION_NAME	Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation
MS_SG_DECAY	OBJECTID	ArcGIS system identifier.
MS_SG_DECAY	SDC_DC	Snag Decay Class – describes the decomposition characteristics of dead trees from 1 through 5. See Snag Decay Table.
MS_SG_DECAY	SDC_ID	Primary Key and Index
MS_SG_DECAY	SDC_TSPA	Total Snags Per Acre - For Each decay class, list the stands total snags per acre.
MS_SG_DECAY	SG_ID	Foreign key link to MS_SNAG
MS_SG_DECAY	VERSION_NAME	Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation
MS_SNAG	OBJECTID	ArcGIS system identifier.
MS_SNAG	OI_KEY	foreign key link to FOIVEG_POLY. This is a 5 or 6-digit number assigned to each unit in tblOI. This number is the foreign key that links tblOI to tblStandAttributes in a one-to-many relationship. Only OI Key numbers that currently exist in tblOI can be assigned to this field, either programatically or via a combo box filled with existing values.
MS_SNAG	SG_CLASSIFIER	Classifier - Individual responsible for the latest classification update, if known.
MS_SNAG	SG_ID	Primary Key and Index
MS_SNAG	SG_MMDBH	Minimum Measured DBH for snags - Valid number between 0 and 20. List the minimum measured diameter at breast height. The EcoSurvey stand exam program allows the user to define the minimum measured snag diameter (DBH) for data collection purposes. The calculation for the number of snags per acre by decay class include only snags that meet this minimum.
MS_SNAG	SG_MMHT	Minimum Measured Height for snags - Valid number between 7 and 30. List the minimum measured height. The EcoSurvey stand exam program allows the user to define the minimum measured snag height for data collection purposes. The calculation for the number of snags per acre by decay class include only snags that meet this minimum.
MS_SNAG	SG_SRC	Snag Source - Description of the source data from the domain for Survey Source (dom_SURV_SRC) which describes the method by which the data was collected. For example: aerial, walk-through, plots, EcoSurvey stand exam, etc .
MS_SNAG	SG_SRC_DT	Snag Source Date - Date of the source data used to derive the SG_SRC .
MS_SNAG	VERSION_NAME	Name of the corporate geodatabase version previously used to edit the record.

Table	Field	Description
		InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation
MS_STAND	OBJECTID	ArcGIS system identifier.
MS_STAND	OI_KEY	Foreign key link to FOIVEG_POLY. This is a 5 or 6-digit number assigned to each unit in tblOI. This number is the foreign key that links tblOI to tblStandAttributes in a one-to-many relationship. Only OI Key numbers that currently exist in tblOI can be assigned to this field, either programatically or via a combo box filled with existing values.
MS_STAND	SA_AGECLS_LYR	10 Year Age Class Layer Designation: Designation of the top, middle, or bottom layer or non-forest which the ten year age class will be based. The layer designated is the most dominate vegetation type which the stand is primarily being managed for. Ten year age class is based on the birthdate of that layer and is updated annually through the Micro*Storms application. This is user specified during the Ecosurvey import process.
MS_STAND	SA_BA	Stand Basal Area - Sum of SASP_BA. The sum total basal area per acre for all tree species of all layers. EcoSurvey stand exam calculations include live conifer and hardwood trees with a diameter at breast height.
MS_STAND	SA_BA7	Stand Basal Area of trees greater than or equal to 7 inches - The total basal area per acre for all tree species in all layers with a DBH greater than or equal to 7 inches which may be 0 if no trees exist in that category. EcoSurvey stand exam calculations include all live conifer and hardwood trees.
MS_STAND	SA_CLASSIFIER	Classifier - Individual responsible for the latest classification update, if known.
MS_STAND	SA_CNPYCOVR	List the stand canopy cover resolved for overlap. The value is expressed as a percent. EcoSurvey stand exam calculations use live trees only, saplings and merchantable trees are included. Saplings are trees with a diameter at breast height of less than 7 inches..
MS_STAND	SA_COVRTYPE	Broad classification of the stand to distinguish forested from nonforested conditions. Forested types are further described for the dominate forest cover type – conifers, hardwoods, or mixed. If the area is currently not in a forested type (recently harvested) but is capable of being forested then it is described as Forested – currently nonstocked. Non forested types not capable of growing a forest are further described – water, marsh and rock for examples.
MS_STAND	SA_CURTIS_RD	A simple and convenient scale for relative stand density for Douglas-fir provided by the expression, Curtis RD = BA/(QMD ^{1/2}) where BA is stand basal area and QMD is quadratic mean stand diameter.
MS_STAND	SA_CURTIS_RD7	Curtis Relative Density for trees greater than or equal to 7 inches provided by the expression, Curtis RD7 = BA7/(QMD7 ^{1/2}).
MS_STAND	SA_ID	Primary Key and Index
MS_STAND	SA_MBF_AC	Volume per Acre (MBF) - Valid values are from 0.1 to 399.9 MBF/Ac - The merchantable live conifer and commercial hardwood net volume per acre in thousands of board feet. Historically, this field was labeled Mature Green Conifer MBF Per Acre and it was filled with a variety of volume values. EcoSurvey stand exam calculations use merchantable live conifer and commercial hardwood trees only as defined by the user. Saplings are not included. Saplings are trees with a diameter at breast height less than 7 inches. However, the user can specify lower diameter limits during the import phase.
MS_STAND	SA_PAG	Plant Association Group. This element will be linked to and determined by the Plant Association Group source (SA_PAG_SRC). See 'PAG_Domain' tab. Use the BLM Code column as the domain pick list.
MS_STAND	SA_PAG_SRC	Plant Association Group Source. See 'PAG_Domain' tab. Use the PA_Code column as the domain pick list.

Table	Field	Description
MS_STAND	SA_QMD	Quadratic Mean Diameter (QMD) - Valid values are from 0.1 to 99 expressed in inches. QMD is the diameter of average basal area per tree, which is the diameter of the tree of average basal area : $QMD = \sqrt{BA / TPA / 0.005454154}$. EcoSurvey stand exam calculation uses live trees only, saplings and merchantable trees are included. Saplings are trees with a diameter at breast height of less than 7 inches.
MS_STAND	SA_QMD7	Quadratic Mean Diameter for trees greater than or equal to 7 inches DBH. Valid values are from 7.0 to 99. QMD7 is the diameter of the tree of average basal area for trees with a diameter at breast height (DBH) of 7 inches or greater. The value is expressed in inches. $QMD = \sqrt{BA7 / TPA7 / 0.005454154}$. EcoSurvey stand exam calculations include all live trees.
MS_STAND	SA_RDI	Relative Density Index (RDI) List the RDI with a value from 0.01 to 1.0. The ratio of the Stand Density Index divided by the maximum Stand Density Index for a species The value is expressed as a decimal. For individual tree species: $RDI = SDI / MaxSDI$. A stratum may contain more than one tree species so there is no one Max SDI for a stratum. Therefore, the stratum total Max SDI is calculated using the proportion of each species' MaxSDI relative to the proportion of that species basal area in the stratum. $Stratum\ Max\ SDI = \sum (TreeBA / StratumBa * TreeMaxSDI)$ $Stratum\ RDI = Stratum\ SDI / StratumMaxSDI$. EcoSurvey stand exam calculations use live trees only, saplings and merchantable trees are included. Saplings are trees with a diameter at breast height less than 7 inches.
MS_STAND	SA_RMKS	Stand Attributes Remarks - If there is something unique about the attributes or the way they were determined, you may note it here.
MS_STAND	SA_SCLS100	100 Year Site Class - Valid values from 1 to 7. Enter the one digit site class using the appropriate site class table. Some site index tables do not include site class therefore site class may be blank. The EcoSurvey stand exam program calculates site class for individual trees identified as site trees if they have both a height and breast height age. These individual tree site index's are then averaged to produce site class for the stand.
MS_STAND	SA_SCLS50	50 Year Site Class - Valid values from 1 to 7. Enter the one digit site class using the appropriate site class table. Some site index tables do not include site class therefore site class may be blank. The EcoSurvey stand exam program calculates site class for individual trees identified as site trees if they have both a height and breast height age. These individual tree site index's are then averaged to produce site class for the stand.
MS_STAND	SA_SDI	Stand Density Index (SDI) List the SDI with a value from 1 to 999. An index that expresses relative stand density in terms of the relationship of the number of trees per acre to stand quadratic mean diameter. The value is expressed in number of trees per acre. $SDI = TPA * (QMD/10)^{1.605}$ EcoSurvey stand exam calculations use live trees only, saplings and merchantable trees are included. Saplings are trees with a diameter at breast height less than 7 inches. Reference: Reineke, L.H. 1933. Perfecting a stand density index for even-aged forests. Journal of Agricultural Research 46(7):627-638
MS_STAND	SA_SIM100	Was the 100 year site index measured? (True or False) The box is checked as true if site index was measured and not checked as false if estimated.
MS_STAND	SA_SIM50	Was the 50 year site index measured? (True or False) The box is checked as true if site index was measured and not checked as false if estimated.
MS_STAND	SA_SIT100	100 Year Site Index Table - The 100-year site index table used to estimate or measure the site index. Site tree selection rules for the site table selected should be followed when measuring site index. See site index lookup table. The EcoSurvey stand exam user identifies the site index table to be used in the site index calculations.
MS_STAND	SA_SIT50	50 Year Site Index Table - The 50-year site index table used to estimate or measure the site index. Site tree selection rules for the site table selected should

Table	Field	Description
		be followed when measuring site index. See site index lookup table. The EcoSurvey stand exam user identifies the site index table to be used in the site index calculations.
MS_STAND	SA_SITECLS_SRC	Description of the source data from the domain for Survey Source (dom_SURV_SRC) which describes the method by which the data was collected. For example: aerial, walk-through, plots, EcoSurvey stand exam, etc. For deriving the forest stand site index and class for the Stand Attributes it is assumed that the same source method was used for both Site Class 100 and 50 if completed on the same date.
MS_STAND	SA_SITECLS_SRC_DT	Date of the source data used to derive the SA_SITECLS_SRC .
MS_STAND	SA_SNDX100	100 Year Site Index - Valid values between 1 and 250. The site index comes from the appropriate site index table (SA_SIT100). The EcoSurvey stand exam program calculates site index for individual trees identified as site trees if they have both a height and breast height age. Breast height age is then converted to total age if required by the site index table selected. These individual tree site indexes are then averaged to produce site index for the stand.
MS_STAND	SA_SNDX50	50 Year Site Index - Valid values between 1 and 250. The site index comes from the appropriate site index table (SA_SIT50). The EcoSurvey stand exam program calculates site index for individual trees identified as site trees if they have both a height and breast height age. Breast height age is then converted to total age if required by the site index table selected. These individual tree site indexes are then averaged to produce site index for the stand.
MS_STAND	SA_STAND_SRC	Description of the source data from the domain for Survey Source (dom_SURV_SRC) which describes the general method by which the data was collected or used to derive the forest stand average metrics for the Stand Attributes. For example: aerial, walk-through, plots, EcoSurvey stand exam, LiDAR, etc.
MS_STAND	SA_STAND_SRC_DT	Date of the source data used to derive the SA_STAND_SRC .
MS_STAND	SA_STAND_STRUC	The degree of uniformity of the stand canopy structure across the Operations Inventory unit polygon, Even or Uneven Aged. NF applies to Non-Forest and Unknown applies to unclassified stands prior to the migration. This is user specified during the Ecosurvey import process.
MS_STAND	SA_TPA7	Stand-level Trees per Acre metric for trees greater than or equal to 7 inches diameter at breast height (DBH) - with a value from 0 to 9999. EcoSurvey stand exam calculations includes all live trees with a DBH greater than or equal to 7 inches.
MS_STAND	SA_TTPA	Stand Total Trees Per Acre - List the stand total trees per acre from 0 to 9999. EcoSurvey stand exam calculations use a sum total of only live seedling, sapling, and merchantable trees.
MS_STAND	VERSION_NAME	Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation
MS_STD_SPP	OBJECTID	ArcGIS system identifier.
MS_STD_SPP	SA_ID	Foreign key link to MS_STAND
MS_STD_SPP	SASP_BA	Stand Species Basal Area - List the basal area per acre for each tree species in all layers. For each species, EcoSurvey Stand exam calculations use live conifer & hardwood trees only, saplings and merchantable trees are included. Saplings are trees with a diameter at breast height less than 7 inches.
MS_STD_SPP	SASP_BA7	Stand Species Basal Area of trees greater than or equal to 7 inches - The stand-level basal area per acre for each tree species with a DBH greater than or equal to 7 inches. For each conifer and hardwood species, EcoSurvey stand exam

Table	Field	Description
		calculations include all live trees for all stand layers combined.
MS_STD_SPP	SASP_BFVPA	Stand Board Foot Volume Per Acre - List the net board foot volume per acre for each species in thousands of board feet. EcoSurvey Stand exam calculations use live conifer & hardwood trees only, saplings and merchantable trees are included. Saplings are trees with a diameter at breast height less than 7 inches. Volume calculations require a tree to have a five inch top at 16 feet.
MS_STD_SPP	SASP_ID	Primary Key and Index
MS_STD_SPP	SASP_SP	Stand Species - List each tree species. Plant symbol for each species is from the U. S. Department of Agriculture's Natural Resource Conservation Service National Plants Database.
MS_STD_SPP	SASP_TPA	Stand Species Trees per Acre metric for each tree species- with a value from 0 to 9999. For each conifer and hardwood species, EcoSurvey stand exam calculations include all live seedlings, saplings and merchantable trees.
MS_STD_SPP	SASP_TPA7	Stand Species Trees per Acre metric for trees greater than or equal to 7 inches DBH - with a value from 0 to 9999. For each species, EcoSurvey stand exam calculations includes all live conifer and hardwood trees from all stand layers combined.
MS_STD_SPP	VERSION_NAME	Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation

B.3 Micro*Storms Related Table Domains

The following domains and their values are specific to the Micro*Storms related tables which are not part of the Oregon Data Framework domains. They were in effect at the time the data standard was approved and may not be current. They are located in ArcGIS geodatabase domain objects that are part of the Micro*Storms application. Contact the state Micro*Storms data steward for current domains.

B3.1 Layers Related Tables (MS_LAYERS)

dom_MS_Layer

code	desc
Bottom	Bottom
Middle	Middle
Non-Forest	Non-Forest
Top	Top
Understory	Understory

dom_MS_Layer_DBH_SC

code	desc
1	1 - 0 - 4.9
2	2 - 5 - 9.9
3	3 - 10 - 19.9
4	4 - 20 - 29.9
5	5 - 30 - 39.9
6	6 - 40 - 49.9
7	7 - 50+
8	8 - No Data

dom_MS_Layer_Species_All

List of species codes and vegetative names too long to list here. See the domain in ArcGIS.

dom_MS_Layer_StockClass

code	desc
Non-Stocked	< 10% Non-Stocked
Poorly Stocked	10-39% Poorly Stocked
Med Stocked	40-69% Medium Stocked
Well Stocked	70-100% Well Stocked
No Data	No Data

dom_MS_Veg_Source

code	desc
Aerial Exam	Aerial Exam - Survey data from helicopter or fixed wing aircraft
CVS Plot	CVS Plot - Survey data from Current Vegetation Survey plot
FIA Plot	FIA Plot - Survey data from Forest Inventory and Analysis plot
LIDAR	LIDAR - Survey summary results from Light Detection and Ranging interpolated data
MicroStorms	MicroStorms - MicroStorms (for legacy M ^S data only, not a valid choice for new data)
Photo Interpretation	Photo Interpretation - Survey data from photo interpretation
Stand Exam-EcoSurvey	Stand Exam - EcoSurvey - EcoSurvey generated stand exam data. (Tree data for each plot coordinate are found in the corporate EcoSurvey database.)
Stand Exam	Stand Exam - Stand Exam (for legacy M ^S data only, not a valid choice for new data)
Stand Exam-NonEcosurvey	Stand Exam-NonEcosurvey - Survey data from stand exam (not using Ecosurvey)
Stocking Survey-EcoSurvey	Stocking Survey-EcoSurvey - EcoSurvey generated stocking survey trees per acre summary data.
Stocking Survey-Other	Stocking Survey-Other - Stocking survey plot summary data not using EcoSurvey.
Unknown	Unknown - Survey data source unknown (not a valid choice for new data)
Walk through Exam	Walk through Exam - Survey data interpreted from a walk through the forest

B3.2 Layers Species Related Tables (MS_LYR_SPP)

dom_MS_Layer_Species_All

List of species codes and vegetative names too long to list here. See the domain in ArcGIS.

dom_MS_Layer_DBH_SC

See table listed above.

B3.3 Stand Attributes Related Tables (MS_STAND)**dom_MS_SA_AgeCls_Lyr**

code	desc
Bottom	Bottom
Middle	Middle
Non-Forest	Non-Forest
Top	Top
Understory	Understory

dom_MS_SA_CovrType

code	desc
FCO	FCO - Forest - Conifers
FHD	FHD - Forest - Hardwoods
FMX	FMX - Forest - Mixed Conifer & Hardwood
FNS	FNS - Forest - Currently Non-Stocked
NA	NA - Non-forest - Agriculture/Range
NB	NB - Non-forest - Brush
NG	NG - Non-forest - Natural Grass
NH	NH - Non-forest - Roads/Maintenance Facility
NO	NO - Non-forest - Cultural Development
NR	NR - Non-forest - Rock Outcrop
NU	NU - Non-forest - Utility Corridor
NW	NW - Non-forest - Water/Marsh

dom_MS_SA_PAG

BLM_CODE	REFERENCE	PNW_CODE
ABA1	HELIPORT	ABA1
ABA2	RUNWAY, LAND STRIP	ABA2
ABAM-10	SWO/ABAM-10	CFC221
ABAM-6	SWO/ABAM-6	CFC121
ABAM-8	SWO/ABAM-8	CFF221
ABCO-12	SWO/ABCO-12	CWC723
ABCO-14	SWO/ABCO-14	CWC721
ABCO-16	SWO/ABCO-16	CWF541
ABCO-18	SWO/ABCO-18	CWC722
ABCO-20	SWO/ABCO-20	CWS621

ABCO-22	SWO/ABCO-22	CWC521
ABCO-24	SWO/ABCO-24	CWS341
ABCO-26	SWO/ABCO-26	CWH321
ABCO-28	SWO/ABCO-28	CWS525
ABCO-30	SWO/ABCO-30	CWS526
ABCO-32	SWO/ABCO-32	CWS524
ABCO-34	SWO/ABCO-34	CWS523
ABCO-36	SWO/ABCO-36	CWC622
ABCO-38	SWO/ABCO-38	CWS228
ABCO-40	SWO/ABCO-40	CWS229
ABCO-42	SWO/ABCO-42	CWC221
ABCO-44	SWO/ABCO-44	CWC621
ABCO-46	SWO/ABCO-46	CWS227
ABCO-48	SWO/ABCO-48	CWS342
ABMAS-8	SWO/ABMAS-8	CRF021
ABMAS10	SWO/ABMAS-10	CRC323
ABMAS12	SWO/ABMAS-12	CRC321
ABMAS14	SWO/ABMAS-14	CRC322
ABMAS16	SWO/ABMAS-16	CRC324
ABMAS18	SWO/ABMAS-18	CRS421
ABMAS20	SWO/ABMAS-20	CRC421
ABMAS22	SWO/ABMAS-22	CRC521
ABMAS24	SWO/ABMAS-24	CRS521
ABP9	PARKING AREA	ABP9
ABR8	ROAD	ABR8
ABS1	ROCK STORAGE AREA	ABS1
ABS9	OPEN STORAGE AREA	ABS9
ACXX	CULTIVATED LAND	ACXX
ADG9	GARBAGE DUMP	ADG9
ADL9	LAND/SANITARY FILL	ADL9
ADT9	TRASH/REFUSE DUMP	ADT9
CAF312	WCC-294	CAF312
CAG313	WCC-302	CAG313
CAG314	WCC-314	CAG314
CAS212	WCC-322	CAS212
CAS412	WCC-298	CAS412
CDC710	WCC154/NORC106	CDC710
CDC715	WCC-138	CDC715
CDS124	WCC142/NORC94	CDS124
CDS212	WCC-166	CDS212
CDS213	WCC-162	CDS213

CDS216	WCC150/NORC102	CDS216
CDS217	WCC170/NORC114	CDS217
CDS312	WCC158/NORC110	CDS312
CDS512	WCC146/NORC98	CDS512
CFC251	WCC-35	CFC251
CFC311	WCC-31	CFC311
CFF152	WCC-79	CFF152
CFF153	WCC-55	CFF153
CFF155	NORC-27	CFF155
CFF613	NORC-31	CFF613
CFS151	WCC-43	CFS151
CFS251	WCC-95	CFS251
CFS253	WCC-87	CFS253
CFS254	WCC-47	CFS254
CFS255	WCC-83	CFS255
CFS256	WCC-91	CFS256
CFS351	WCC-51	CFS351
CFS551	WCC-63	CFS551
CFS552	WCC-59	CFS552
CFS651	WCC-39	CFS651
CFS652	WCC-67	CFS652
CFS653	WCC-75	CFS653
CFS654	WCC-71	CFS654
CHF110	WCC-243	CHF110
CHF141	NORC-171	CHF141
CHF142	NORC-179	CHF142
CHF150	WCC-247	CHF150
CHF220	WCC-190	CHF220
CHF221	WCC-186	CHF221
CHF231	NORC-175	CHF231
CHF232	NORC-134	CHF232
CHF321	WCC-226	CHF321
CHLA-10	SWO/CHLA-10	CTS121
CHLA-12	SWO/CHLA-12	CTS221
CHLA-14	SWO/CHLA-14	CTH121
CHLA-16	SWO/CHLA-16	CTC121
CHLA-18	SWO/CHLA-18	CTC222
CHLA-20	SWO/CHLA-20	CTC221
CHLA-6	SWO/CHLA-6	CTS521
CHLA-8	SWO/CHLA-8	CTS321
CHM121	WCC-230	CHM121

CHS110	WCC-222	CHS110
CHS151	NORC-138	CHS151
CHS152	NORC-142	CHS152
CHS153	NORC-146	CHS153
CHS154	NORC-150	CHS154
CHS155	NORC-154	CHS155
CHS156	NORC-158	CHS156
CHS157	NORC-163	CHS157
CHS158	WCC-198	CHS158
CHS159	WCC-206	CHS159
CHS160	WCC-202	CHS160
CHS161	WCC-194	CHS161
CHS162	WCC-210	CHS162
CHS163	WCC-214	CHS163
CHS164	WCC-218	CHS164
CHS222	NORC-130	CHS222
CHS228	WCC-182	CHS228
CHS230	NORC-126	CHS230
CHS231	NORC-122	CHS231
CHS232	WCC-178	CHS232
CHS314	NORC-183	CHS314
CHS322	NORC-187	CHS322
CHS323	NORC-195	CHS323
CHS324	NORC-191	CHS324
CHS326	WCC-259	CHS326
CHS350	WCC-255	CHS350
CHS354	WCC-267	CHS354
CHS355	WCC-263	CHS355
CHS356	WCC-251	CHS356
CHS357	WCC-271	CHS357
CHS421	NORC-199	CHS421
CHS422	NORC-203	CHS422
CHS423	NORC-207	CHS423
CHS521	NORC-167	CHS521
CHS522	WCC-234	CHS522
CHS525	WCC-238	CHS525
CHS610	NORC-215	CHS610
CHS611	WCC-279	CHS611
CHS613	WCC-287	CHS613
CHS614	WCC-275	CHS614
CHS615	WCC-283	CHS615

CHS616	NORC-211	CHS616
CLF111	WINEMA-11	CLF111
CLM101	ODNRA-60	CLM101
CLS413	WINEMA-12	CLS413
CLS414	WINEMA-13	CLS414
CLS832	ODNRA-58	CLS832
CMG212	WCC-310	CMG212
CMS111	WINEMA-24	CMS111
CMS117	WCC-306	CMS117
CMS118	WCC-350	CMS118
CMS224	WCC-346	CMS224
CMS225	WCC-318	CMS225
CMS226	WCC-326	CMS226
CMS227	WCC-330	CMS227
CMS228	WCC-338	CMS228
CMS229	WCC-342	CMS229
CMS613	WCC-334	CMS613
CPS111	WINEMA-9	CPS111
CPS211	WINEMA-14	CPS211
CPS212	WINEMA-15	CPS212
CRG111	WINEMA-22	CRG111
CRS112	WINEMA-23	CRS112
CRS311	WINEMA-21	CRS311
CSF121	NORC-78	CSF121
CSF321	NORC-74	CSF321
CSS221	NORC-66	CSS221
CSS321	NORC-62	CSS321
CSS521	NORC-82	CSS521
CSS522	NORC-86	CSS522
CSS621	NORC-70	CSS621
CWC215	WINEMA-17	CWC215
CWF211	WCC-106	CWF211
CWH112	WINEMA-20	CWH112
CWM111	WINEMA-16	CWM111
CWS116	WINEMA-18	CWS116
CWS312	WINEMA-19	CWS312
CWS521	WCC-102	CWS521
CWS522	WCC-126	CWS522
CWS527	WCC130/NORC47	CWS527
CWS528	WCC116/NORC38	CWS528
CWS529	WCC121/NORC43	CWS529

CWS555	WCC113/NORC55	CWS555
CWS622	WCC110/NORC51	CWS622
FMXX	MOIST (MESIC) FORBLAND	FMXX
FWXX	WET FORBLANDS/FORB MEADOWS	FWXX
FXXX	FORBLAND	FXXX
GAXX	ANNUAL GRASS VEGETATION	GAXX
GBXX	BUNCHGRASS VEGETATION	GBXX
GM80	COASTAL GRASSLAND	GM80
GMXX	MOIST GRASSLAND IN FOREST	GMXX
GR8211	ODNRA-90	GR8211
GRXX	RHIZ GRASS/SEDGE VEGETATION	GRXX
GSXX	SUBALPINE/ALPINE GRASSLAND	GSXX
GXXX	GRASSLAND	GXXX
LIDE-10	SWO/LIDE3-10	HTC521
LIDE-12	SWO/LIDE3-12	HTS621
LIDE-14	SWO/LIDE3-14	HTH421
LIDE-16	SWO/LIDE3-16	HTH321
LIDE-18	SWO/LIDE3-18	HTC626
LIDE-20	SWO/LIDE3-20	HTC421
LIDE-22	SWO/LIDE3-22	HTC621
LIDE-24	SWO/LIDE3-24	HTC622
LIDE-26	SWO/LIDE3-26	HTC321
LIDE-28	SWO/LIDE3-28	HTH422
LIDE-30	SWO/LIDE3-30	HTC624
LIDE-32	SWO/LIDE3-32	HTC623
LIDE-34	SWO/LIDE3-34	HTC625
LIDE-36	SWO/LIDE3-36	HTS121
LIDE-38	SWO/LIDE3-38	HTC221
LIDE-40	SWO/LIDE3-40	HTC222
LIDE-42	SWO/LIDE3-42	HTC223
MDXX	DRY MEADOW	MDXX
MMXX	MOIST MEADOW	MMXX
MSXX	SUB/ALPINE MOIST MEADOW	MSXX
MW8101	ODNRA-106	MW8101
MW8102	ODNRA-108	MW8102
MWXX	WET MEADOW	MWXX
MXC0	ANY OF ABOVE W/ SCATTERED CON	MXC0
MXXX	MEADOW/GRASS-SEDGE	MXXX
NAC0	SCATTERED CONIFERS	NAC0
NAS0	SCATTERED SHRUBS	NAS0
NCA0	CINDRS/LAVA/MUD/GLACIAL WASH	NCA0

NCXX	CINDERS/MUD/LAVA FLOW	NCXX
NFXX	DENUDED FLOODPLAIN	NFXX
NIXX	ICE FIELDS/SNOW/GLACIERS	NIXX
NLXX	LANDFORM FAILURE	NLXX
NMXX	MINE TAILINGS/DREDGE PILES	NMXX
NRA0	ROCKS>50% COVER	NRA0
NRL0	LEDG/CLIFF/ROCK FACE (>200%)	NRL0
NRQ0	ROCK PIT, QUARRY	NRQ0
NSXX	SAND/SAND DUNES	NSXX
NTA0	TALUS SLOPES	NTA0
NTXX	TALUS SLOPES	NTXX
PICO-4	SWO/PICO-4	CLC721
PICO-6	SWO/PICO-6	CLS531
PICO-8	SWO/PICO-8	CLC521
PIJE-10	SWO/PIJE-10	CPC422
PIJE-12	SWO/PIJE-12	CPC423
PIJE-14	SWO/PIJE-14	CPC123
PIJE-16	SWO/PIJE-16	CPC424
PIJE-18	SWO/PIJE-18	CPC425
PIJE-20	SWO/PIJE-20	CPC122
PIJE-22	SWO/PIJE-22	CPC121
PIJE-8	SWO/PIJE-8	CPC421
PIMO3-4	SWO/PIMO3-4	CQF021
PIMO3-6	SWO/PIMO3-6	CQH121
PIMO3-8	SWO/PIMO3-8	CQC121
PIPO-4	SWO/PIPO-4	CPC621
PIPO-6	SWO/PIPO-6	CPH221
PISI-4	SWO/PISI-4	CSC121
PISI-6	SWO/PISI-6	CSS323
PSME-14	SWO/PSME-14	CDS524
PSME-16	SWO/PSME-16	CDS123
PSME-18	SWO/PSME-18	CDS122
PSME-20	SWO/PSME-20	CDC322
PSME-22	SWO/PSME-22	CDC321
PSME-24	SWO/PSME-24	CDS663
PSME-26	SWO/PSME-26	CDS214
PSME-28	SWO/PSME-28	CDH521
PSME-30	SWO/PSME-30	CDS523
PSME-32	SWO/PSME-32	CDS522
PSME-34	SWO/PSME-34	CDS521
PSME-36	SWO/PSME-36	CDH522

PSME-38	SWO/PSME-38	CDH524
PSME-40	SWO/PSME-40	CDH321
PSME-42	SWO/PSME-42	CDH523
PSME-44	SWO/PSME-44	CDC521
PSME-46	SWO/PSME-46	CDC323
PSME-48	SWO/PSME-48	CDC422
PSME-50	SWO/PSME-50	CDC421
PSME-52	SWO/PSME-52	CDS215
PSME-54	SWO/PSME-54	CDS121
QUGA4-4	SWO/QUGA4-4	HOC121
QUGA4-6	SWO/QUGA4-6	HOG321
SD1913	WINEMA-10	SD1913
SDXX	DRY SHRUBLAND	SDXX
SMXX	MOIST SHRUBLAND	SMXX
SSXX	SUB/ALPINE SHRUBLAND	SSXX
SW1101	ODNRA-76	SW1101
SW1102	ODNRA-80	SW1102
SWXX	SHRUB WETLANDS	SWXX
SXXX	SHRUBLAND	SXXX
THPL-2	SWO/THPL-2	CCS521
TSHE-12	SWO/TSHE-12	CHS420
TSHE-14	SWO/TSHE-14	CHF120
TSHE-16	SWO/TSHE-16	CHH121
TSHE-18	SWO/TSHE-18	CHS609
TSHE-20	SWO/TSHE-20	CHH123
TSHE-22	SWO/TSHE-22	CHS320
TSHE-24	SWO/TSHE-24	CHC221
TSHE-26	SWO/TSHE-26	CHS118
TSHE-28	SWO/TSHE-28	CHC521
TSHE-30	SWO/TSHE-30	CHH321
TSHE-32	SWO/TSHE-32	CHH122
TSHE-34	SWO/TSHE-34	CHC421
TSHE-36	SWO/TSHE-36	CHS319
TSHE-38	SWO/TSHE-38	CHS821
TSHE-40	SWO/TSHE-40	CHC621
TSHE-42	SWO/TSHE-42	CHS117
TSHE-44	SWO/TSHE-44	CHS119
TSHE-46	SWO/TSHE-46	CHS219
TSHE-48	SWO/TSHE-48	CHS220
TSHE-50	SWO/TSHE-50	CHC321
TSHE-52	SWO/TSHE-52	CHC322

TSME-10	SWO/TSME-10	CMC221
TSME-12	SWO/TSME-12	CMS219
TSME-14	SWO/TSME-14	CMS116
TSME-16	SWO/TSME-16	CMS141
TSME-18	SWO/TSME-18	CMF021
TSME-6	SWO/TSME-6	CMS621
TSME-8	SWO/TSME-8	CMC222
WEXX	ESTUARY	WEXX
WL90	INTERMITTENT LAKE/POND	WL90
WLXX	LAKE/POND/IMPOUND/Nonmoving	WLXX
WOXX	OCEAN/SEAS/SALINE WATER BODY	WOXX
WR90	INTERMITTENT STREAMS	WR90
WRXX	RunningWater/Stream/River/Crk	WRXX
WXXX	Water Covered Areas	WXXX

dom_MS_SA_PAG_SRC

code	desc
SWO	SWO - Southwestern Oregon
NWO	NWO - Westside Central Cascades of Northwest Oregon
NOC	NOC - Northern Oregon Coast Range
SCO	SCO - South Central Oregon-Klamath Basin
ODN	ODN - Oregon Dunes National Rec Area
RPC	RPC - Riparian Plant Communities in Northwestern Oregon
TAN	TAN - A Field Guide to the Tanoak and the Douglas-fir Plant Associations in Northwestern California (1996)
OEC	OEC - Forested Plant Associations of the Oregon East Cascades. USDA FS 2007 by Michael Simpson. R6-NR-ECOL-TP-03-2007 http://ecoshare.info/2009/12/16/forested-plant-associations-of-the-oregon-east-cascades/

dom_MS_SA_SIT50

code	desc
Douglas-fir - Hann	Douglas-fir - Hann - Hann, Scriver 1987 OSU Forest res Lab. Bulletin 59
Douglas-fir - King	Douglas-fir - King - King 1966 Weyerhaeuser Forest Paper No. 8
Ponderosa Pine - Hann	Ponderosa Pine - Hann - Hann, Scriver 1987 OSU Forest res Lab. Bulletin 59
Red Alder	Red Alder - Harrington, Curtis 1986 PNW Res Paper 358
Red fir	Red fir - Schumacher 1928 UC Ag Exp Sta Bulletin 456
Western White Pine	Western White Pine - Haig 1932 USDA FS Technical Bulletin 323
White fir - California	White fir - California - Schumacher 1926 UC Ag Exp Sta Bulletin 407
White/Grand Fir, E. OR	White/Grand Fir, E. OR - Cochran 1979 PNW Res Paper 252
No Site Index Required	No Site Index Required - For non-forest areas

dom_MS_SA_SIT100

code	desc
Douglas-fir - Curtis	Douglas-fir - Curtis - Curtis, Herman, Demars, 1974 Forest Sci. 20(4):307-316
Douglas-fir - McArdle	Douglas-fir - McArdle - McArdle, Meyer, Bruce rev. 1961 Technical Bulletin 201
Mountain Hemlock	Mountain Hemlock - Means 1988 OSU Fir Report Vol. 10 No. 1
Noble Fir	Noble Fir - Herman, Curtis, Demars 1978 PNW-243
Ponderosa Pine - Barrett	Ponderosa Pine - Barrett - Barrett 1978 PNW-232
Ponderosa Pine - Meyer	Ponderosa Pine - Meyer - Meyer 1961 USDA Technical Bulletin 630
Sitka Spruce	Sitka Spruce
Sitka Spruce/With Hemlock	Sitka Spruce/With Hemlock - Meyer 1937 PNW-544
Western Hemlock	Western Hemlock - Barnes 1962 USDA Technical Bulletin 1273
Western Red Cedar	Western Red Cedar - Barnes 1962 PNW Technical Bulletin 1273
No Site Index Required	No Site Index Required - For non-forest areas

dom_MS_SA_SS

code	desc
Even	Even - Even Aged Stand
NF	NF - Non-Forest
Uneven	Uneven - Uneven Aged Stand
Unknown	Unknown - Legacy Micro*Storms data was blank for this field

dom_MS_TrueFalse

code	desc
T	T - True
F	F - False

dom_MS_Veg_Source

See table listed above.

B3.4 Stand Species Related Table (MS_STD_SPP)**dom_MS_Layer_Species_All**

List of species codes and vegetative names too long to list here. See the domain in ArcGIS.

B3.5 Snags Related Table (MS_SNAG)**dom_MS_Veg_Source**

See table listed above.

B3.6 Snag Decay Class Related Table (MS_SG_DECAY)

dom_MS_DecayClass

code	desc
1	1
2	2
3	3
4	4
5	5

Decay Class					
	1	2	3	4	5
Bark	Tight, intact	50% loose or missing	75% missing	75% missing	75% missing
Decay	Minor	None to advanced	Early stage of decay to advanced	Early stage of decay to advanced	to crumbly
Sapwood Decay	None to early stage of decay	None to early stage of decay	None to 25% decay	25% + decay	50% + advanced decay
Limbs	Mostly present	Small limbs	Few remain	Few remain	Absent
Top Breakage	May be present	May be present	1/3 may be missing	1/3 to 1/2 missing	1/2 + missing
Bole Form	Intact	Intact	Mostly intact	Loosing form, soft	Form mostly lost

B3.7 Down Log Related Table (MS_DOWNLOG)

dom_MS_Veg_Source

See table listed above.

B3.8 Down Log Decay Class Related Table (MS_DL_DECAY)

dom_MS_DecayClass

code	desc
1	1
2	2
3	3
4	4
5	5

	1 	2 	3 		
		4 	5 		
Decay Class	1	2	3	4	5
Bark	Intact	Intact	Trace	Absent	Absent
Twigs <1.18in	Present	Absent	Absent	Absent	Absent
Texture	Intact	Intact to partly soft	Hard, large pieces	Small, soft, blocky pieces	Soft, powdery
Shape	Round	Round	Round	Round to oval	Oval
Color of wood	Original	Original	Original to faded	Light brown to faded brown or DF may be red brown	Faded to light yellow or gray DF may be red brown to dark brown
Portion of log on ground	Log elevated on support points	Log elevated on support points but sagging slightly	Log is sagging near ground	All of log on ground	All of log on ground with greater than 50% above ground