SNAGS AND COARSE WOODY DEBRIS

SPATIAL DATA STANDARD

Owl nesting atop a tree snag. Photo courtesy of BLM Medford District

DOCUMENT REVISIONS

Revision	Date	Author	Description	Affected Pages
1.0	11/6/2018	Carolina Hooper, Bruce Hollen, John Guetterman, Jay Bernards, Dana Baker-Allum	1st released version.	All

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1. GENERAL INFORMATION

Dataset (Theme) Name: Snags and Coarse Woody Debris
Dataset (Feature Class): SNAG_CWD_PT, SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL

1.1 ROLES AND RESPONSIBILITIES

Roles	Responsibilities
State Data Stewards	The State Data Steward 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.
GIS Technical Lead	The GIS Technical Lead works with data stewards to convert business needs into GIS applications and derive data requirements and participates in the development of data standards. The GIS Technical Lead coordinates with system administrators and GIS coordinators to manage the GIS databases. The GIS Technical Lead 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 GIS Technical Lead provides technical assistance and advice on GIS analysis, query and display of the dataset.
State Data Administrator	The State Data Administrator 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 State Records Administrator 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 (FOIA) category.

Table 1 Role and Responsibilities

1.2 FOIA CATEGORY

Public

1.3 RECORDS RETENTION SCHEDULE

The DRS/GRS/BLM Combined Records Schedule under Schedule 20/52a3 (Electronic Records/Geographic Information Systems) lists vegetation treatment and management as one of the system-centric themes that are significant for Bureau of Land Management (BLM)'s mission that must be permanently retained.

> "PERMANENT. Cutoff at the end of each Fiscal Year (FY), or, when significant changes and additions have been made, before and after the change. Use BLM 20/52a. Transfer to the National Archives every three years after cutoff. Under the instruction in 36 CFR 1235.44-50, or whichever guidance is in place at the time of the transfer. Submissions are full datasets and are in addition to, not replacements, of earlier submissions."

Oregon/Washington (OR/WA) BLM Guidebook for Management of Geospatial Data (v1) Section 15.2 - Corporate Data Online Archives prescribes:

> "Vector annual archives are retained online for 12 years. Each year, data that has reached 12 years old is copied off-line, to be retained until no longer needed (determined by data stewards and program leads), with format and readability maintained in a five (5) year "tech refresh" update cycle."

1.4 SECURITY/ACCESS/SENSITIVITY

The Snags and Coarse Woody Debris set of themes do not require any additional security other than that provided by the General Support System (the hardware/software infrastructure of the OR/WA BLM).

This dataset is not sensitive and there are no restrictions on access to this data either from within the BLM or external to the BLM. This dataset falls under the standard Records Access Category 1A-Public Data.

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

1.5 KEYWORDS

Keywords used to locate this dataset include:

- BLM Thesaurus Keywords: Forestry, Wildlife, Vegetation
- ISO Thesaurus Keywords: biota, environment
- Additional Keywords: Snag, Coarse Woody Debris, Resource Management Plan Monitoring

1.6 SUBJECT FUNCTION CODES

BLM Subject Function codes that can be used to describe this dataset include:

1283 - Data Administration
5000 – Forest Management
6500 – Wildlife Management

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2. DATASET OVERVIEW

2.1 DESCRIPTION

The Snags and Coarse Woody Debris dataset represents spatial location, core attributes, treatment, and monitoring information about Snags (a tree which has been manipulated to provide wildlife habitat, can be dead or alive) and coarse woody debris. Snags or coarse woody debris can be created either through timber harvest or as a stand-alone project.

This dataset includes the following objects:

Snags and Coarse Woody Debris Points (SNAG_CWD_PT) – location about the snag and attributes that are unlikely to change over time.

Snags and Coarse Woody Debris Treatments Table (SNAG_CWD_TRT_TBL) – attributes related to the creation of the snag/coarse woody debris treatment.

Snags and Coarse Woody Debris Monitoring Table (SNAG_CWD_MON_TBL) – attributes captured during subsequent monitoring visits to the snag/coarse woody debris. There may be many monitoring visits over time to each point.

2.2 USAGE

This dataset is used to track corporate information regarding the characteristics of created snags and coarse woody debris. This data will allow users and managers to understand the costs, benefits and the effectiveness of different approaches to snag and coarse woody debris management. The data can be used for both regional and local planning processes.

The dataset is to be used for Resource Management Plan Monitoring after harvest activities to ensure compliance with the snag and coarse woody debris requirements.

2.3 SPONSOR/AFFECTED PARTIES

The sponsor for this data set is the Deputy State Director for the Division of Resources, Lands, Mineral and Fire.

2.4 RELATIONSHIP TO OTHER DATASETS, DATABASES or FILES

This dataset is considered part of the Micro*Storms database, which consists of Forest Operations Inventory Vegetation Polygons, Forest Survey Polygons, and forestry Treatments. A snag point must be related to one Micro*Storms Harvest or Mechanical Treatment polygon. A treatment polygon can be related to zero or many snags.

This dataset is a complementary dataset to Geographic Biotic Observations (GeoBOB) dataset. This dataset is designed to track created snags and coarse woody debris, with limited opportunity for performing additional surveys on each feature. GeoBOB represents spatial location, inventory, and basic information about special status, threatened, and endangered species. It is possible that created snags or coarse woody debris will be become locations for federally listed, BLM special status, survey & manage, and other rare species on BLM lands in Oregon and Washington.

2.5 DATA CATEGORY/ARCHITECTURE LINK

These data themes are a portion of the Oregon Data Framework (ODF). The ODF utilizes the concept of inheritance to define specific instances of data. All OR/WA resource-related data are divided 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 the basic data set that cannot be further sub-divided. Those basic data sets inherit all characteristics of all groups/categories above them. The basic data sets are where physical data gets populated (those groups/categories above them do not contain actual data, but set parameters that 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 Snags and Coarse Woody Debris entities are highlighted. For additional information about the ODF, contact the State Data Administrator. The State Data Administrator's contact information can be found at the following link:
https://www.blm.gov/about/data/oregon-data-management.

In the ODF, Snags and Coarse Woody Debris is considered an activity and categorized as follows:

ODF
- Activities
  - Sampling
    - SNAG_CWD_MON_TBL
  - Treatment
    - SNAG_CWD_PT
    - SNAG_CWD_TRT_TBL

Figure 1 provides a graphic representation of the entities and hierarchical relationships.

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

The Department of the Interior (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 through the section on Attribute Descriptions. Data context is addressed through the data organization and structure portions of this document. In addition, the DOI Data Resource Model categorizes data by use of standardized Data Subject Areas and Information Classes.

For this data set, the Data Subject Area and Information Class are:

- Data Subject Area: Geospatial
- Information Class: Location

2.7 SNAGS AND COARSE WOODY DEBRIS DATA ORGANIZATION / STRUCTURE

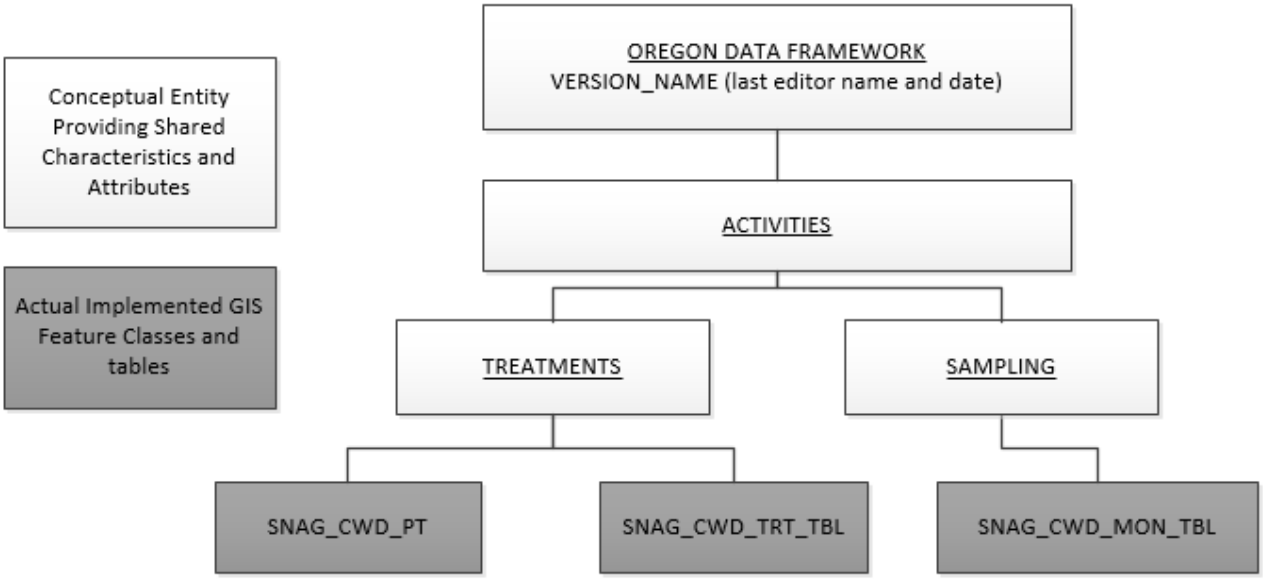

Figure 1 Data Organization Structure

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3. DATA MANAGEMENT PROTOCOLS

3.1 ACCURACY REQUIREMENTS

There are no rigid requirements for the collection of point data. The data can be collected using a GPS device, map, aerial photograph, or can be referenced from other features using a compass. Since the point locations may be revisited over time, high accuracy feature positions will help staff find features more easily in the future.

Locational accuracy is specified in the attribute ACCURACY_FT, but there are many instances where the value may be unknown.

When using the snags per unit calculation tool, the default buffer threshold will be 15 meters. The user can specify another threshold if desired.

3.2 COLLECTION, INPUT, AND MAINTENANCE PROTOCOLS

Resource specialists have the option of entering data from field forms in the office using ArcGIS Desktop or field-going staff may collect data using the S1 Mobile for Android application.
To collect mobile data, a staff member must first obtain the appropriate mobile editor user account within the BLM ArcGIS Online (AGOL) organization. Then, administrators will add mobile editors to the designated group in AGOL which allows them to access the editable feature service. Specific decisions about how to manage AGOL users can be made at the District or Field Office level.

Once added to the correct group, users can log in to the S1 Mobile for Android Application and download an editable replica of the Snag/Coarse Woody Debris dataset to their device for offline use in the field. This application allows users to create features.

When the user returns to the office and re-establishes wireless internet connectivity on the device, they will then choose the option to sync and submit their data from the mobile application. This will add the created, updated, and/or deleted features/records to a BLM SDE Version queue. Authorized editors will then import this mobile version into ArcGIS Desktop, where they will review the data, perform any needed corrections or updates, and submit the version for automated QAQC, reconcile, and posting.

The automated QAQC process will check the version for missing values in required fields, values outside of applied range and/or coded value domains, and other data rules.

An automated tool will be provided for ArcGIS Desktop that allows the user to select a harvest or mechanical treatment polygon and then calculate the snags per acre based on the input Snags and Coarse Woody Debris data.

3.3 UPDATE FREQUENCY AND ARCHIVAL PROTOCOLS

Data is updated as needed, but at least annually. Data is archived annually at the end of the fiscal year.

3.4 STATEWIDE MONITORING

Each year, the Resource Science Data team of the BLM Division of Resources, Lands, Minerals and Fire meets with each state data steward for every corporate geospatial theme to conduct an annual review of the data. During the annual review, geospatial staff present the state data stewards with a report detailing Quality Assurance/Quality Control (QAQC) results performed on the data. The QAQC does the following:

- Checks that all attribute values conform to the range or coded-value domains to which they are applied
- Checks that all attributes marked as required in the data standard have values
- Checks for multipart polygons if they are forbidden by the data standard
- Checks for duplicate features which have the same geometry and attributes
- Checks for overlapping features if forbidden by the data standard
- Checks for invalid geometry (such as self-intersections)
- Checks for slivers
- Other checks as necessary (can be customized according to the data standard)

In addition to this report, geospatial staff conduct a qualitative needs assessment with the steward to identify any unmet needs or problems with the current status of the data. At the conclusion of the review, the team records the steward's approvals of the datasets reviewed. These approvals are then added to the corporate metadata.

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4. SNAGS AND COARSE WOODY DEBRIS 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. 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. Current domains are found on the internal OR/WA SharePoint data management page. Some of the domains used in this data standard are also available at the following web site: https://www.blm.gov/about/data/oregon-data-management.

For additional information about the ODF, contact the State Data Administrator. The State Data Administrator's contact information can be found at the following link: https://www.blm.gov/about/data/oregon-data-management.

4.1 FEATURE CLASSES

4.1.1 SNAG_CWD_PT (Snags Coarse Woody Debris Points)

Attribute Name	Data Type	Length	Default Value	Required?	Domain
BLM_ORG_CD	String	5		Yes**	dom_BLM_ORG_CD
TRT_NAME	String	60		Yes**	
UNIT_NUM	String	10		Yes**	
TREE_NUM	String	20		No	
SPECIES	Long Integer			Yes	dom_MS_LAYER_SPECIES_TREE
FILEPATH	String	150		No	
COORD_SRC	String	7		No	dom_COORD_SRC
ACCURACY_FT	Integer	Short		No	
SNAG_ID	GUID			Yes*	
MS_ID	GUID			Yes*	
VERSION_NAME	String	50	InitialLoad	Yes*	

* Values automatically generated
** Enforced during quality control

4.2 TABLES

4.2.1 SNAG_CWD_MON_TBL (Snags Coarse Woody Debris Monitoring Table)

Attribute Name	Data Type	Length	Default Value	Required?	Domain
VISIT_DT	Date			Yes**	
CLASSIFIER	String	30		Yes**	
DBH	Long Integer			Yes	
SNAG_LEN_HT_FT	Short Integer			Yes	
RTNTN_TREE_TYPE	String	30		Yes	dom_MS_RTNTN_TREE_TYPE
DECAY_CLASS	Short Integer		0	Yes	dom_MS_DECAYCLASS

TREE_STATUS	String	10		Yes	dom_MS_TREE_STATUS
BOLE_COV_CAVITY_PCT	Short Integer			No	
BARK_SLUFF_PCT	Short Integer			No	
FILEPATH	String	150		No	
COMMENTS	String	255		No	
SNAG_ID	GUID			Yes*	
VERSION_NAME	String	50	InitialLoad	Yes*	
CREATED_USER	String	30		No*	
CREATED_DATE	Date			No*	
LAST_EDITED_USER	String	30		No*	
LAST_EDITED_DATE	Date			No*	

* Values automatically generated
** Enforced during quality control

4.2.2 SNAG_CWD_TRT_TBL (Snags Coarse Woody Debris Treatments Table)

Attribute Name	Data Type	Length	Default Value	Required?	Domain
DATE	Date			Yes**	
CLASSIFIER	String	30		Yes**	
TRT_STATUS	String	12		Yes	dom_TRT_STATUS
DBH_SC	Long Integer			Yes	
SNAG_LEN_HT_FT	Short Integer			Yes	
RTNTN_TREE_TY	String	30		Yes	dom_MS_RTNTN_TREE_TYPE
DECAY_CLASS	Short Integer		0	Yes	dom_MS_DECAYCLASS
CREATE_MECH	String	20		Yes	dom_MS_CREATE_MECH
FUNGAL_TY	String	10		No	dom_MS_FUNGAL_TYPE
CONTRACTID	String	50		Yes**	
BUDGET_CD	String	50		Yes**	
WORKAGENT	String	40		Yes**	dom_WORKAGENT
FILEPATH	String	150		No	
COMMENTS	String	255		No	
SNAG_ID	GUID			Yes*	
VERSION_NAME	String	50	InitialLoad	Yes*	
CREATED_USER	String	30		No*	
CREATED_DATE	Date			No*	
LAST_EDITED_USER	String	30		No*	
LAST_EDITED_DATE	Date			No*	

* Values automatically generated
** Enforced during quality control

4.3 RELATIONSHIP CLASSES

4.3.1 rel_SNAG_PT_MON_TBL

Origin Table	SNAG_CWD_PT
Origin Field	SNAG_ID
Destination Table	SNAG_CWD_MON_TBL
Destination Field	SNAG_ID
Relationship Type	Simple
Labels	Snag CWD Monitoring, Snag CWD Points
Messages	None
Cardinality	1 to Many

4.3.2 rel_SNAG_PT_TRT_TBL

Origin Table	SNAG_CWD_PT
Origin Field	SNAG_ID
Destination Table	SNAG_CWD_TRT_TBL
Destination Field	SNAG_ID
Relationship Type	Simple
Labels	Snag CWD Treatment, Snag CWD Points
Messages	None
Cardinality	1 to Many

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

SNAG_CWD_PT
Description: Instance of [ODF category or sub-category that provides inherited characteristics].
Geometry: Points; scattered small areas; points should not be coincident.
Topology: No topology enforced.
Integration Requirements: None.

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 Political/Admin SMA Line
Feature Class Use/Entity Table	SNAG_CWD_PT
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 (CADNSDI, DEM, SOURCEL) because the accuracy is determined by that theme. However, if COORD_SRC is MAP (digitized from a paper map), DRG, DOQ, DIS 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. Use a large number to flag uncertain coordinates.
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 BARK_SLUFF_PCT

Geodatabase Name	BARK_SLUFF_PCT
BLM Structured Name	Percent_of_Bark_Sluff_Measure
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL
Definition	Percent of bole missing bark, estimated to the nearest 5%.
Required/Optional	Optional
Domain (Valid Values)	Range domain: 0 – 100.
Data Type	Short Integer

7.3 BLM_ORG_CD

Geodatabase Name	BLM_ORG_CD
BLM Structured Name	Administrative_Unit_Organization_Code
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_PT
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, OR/WA BLM 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. This field is auto-populated based on spatial location. When data is edited in desktop ArcGIS it happens immediately. When data is collected on a mobile device, this happens when the data is checked in.
Required/Optional	Required
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)

7.4 BOLE_COV_CAVITY_PCT

Geodatabase Name	BOLE_COV_CAVITY_PCT
BLM Structured Name	Percent_of_Bole_Covered_by_Cavity_Measure
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL
Definition	Cumulative area covered by cavities estimated to the nearest 5%.
Required/Optional	Optional
Domain (Valid Values)	Range domain: 0 – 100.

Data Type	Short Integer

7.5 BUDGET_CD

Geodatabase Name	BUDGET_CD
BLM Structured Name	Funding_Program_Code
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_TRT_TBL
Definition	Primary funding program activity for a treatment. This attribute is not required during field collection. However, the attribute must be completed before the edit version can be submitted to the corporate dataset.
Required/Optional	Required
Domain (Valid Values)	None. Examples: 1020, 1040, 1220, 1060MX
Data Type	String (50)

7.6 CLASSIFIER

Geodatabase Name	CLASSIFIER
BLM Structured Name	Classifier_Name
Inheritance	Inherited from Oregon Data Framework
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Name (mixed case, first and last) of the subject matter specialist most knowledgeable about the site. The contact person. This attribute is not required during field collection. However, the attribute must be completed before the edit version can be submitted to the corporate dataset. For records collected in the field, this value will be auto-populated from the user name of the person collecting the data.
Required/Optional	Required
Domain (Valid Values)	No domain. Examples: Mary Smith, John Doe
Data Type	String (20)

7.7 COMMENTS

Geodatabase Name	COMMENTS

BLM Structured Name	Comments_Text
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_PT, SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Free text for comments.
Required/Optional	Optional
Domain (Valid Values)	No Domain.
Data Type	String (255)

7.8 CONTRACTID

Geodatabase Name	CONTRACTID
BLM Structured Name	Contract_Identification_Number
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_TRT_TBL
Definition	Timber sale, stewardship, planting, weed control or other contract number. Relates to the Micro*Storms Contracts table. More detailed information about the contact, such as Cost per Acre and Cost per Tree are recorded in the Micro*Storms Contracts table. This attribute is not required during field collection. However, the attribute must be completed before the edit version can be submitted to the corporate dataset.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples: “L17PC00048”, “L15PC00122”
Data Type	String (50)

7.9 COORD_SRC

Geodatabase Name	COORD_SRC
BLM Structured Name	Coordinate_Source_Code
Inheritance	Inherited from Entity Treatment
Feature Class Use/Entity Table	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	Required
Domain (Valid Values)	dom_COORD_SRC
Data Type	String (7)

7.10 CREATE_MECH

Geodatabase Name	CREATE_MECH
BLM Structured Name	Snag_Creation_Mechanism_Code
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_TRT_TBL
Definition	The mechanism used to create the snag.
Required/Optional	Required
Domain (Valid Values)	dom_MS_CREATE_MECH
Data Type	String (20)

7.11 CREATED_DATE

Geodatabase Name	CREATED_DATE
BLM Structured Name	Created_Date
Alias Name	None
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Date the record was created in the database. Automatically populated by the desktop and mobile software.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 5/23/2017, 1/1/2010
Data Type	Date

7.12 CREATED_USER

Geodatabase Name	CREATED_USER
BLM Structured Name	Created_User_Name
Alias Name	None

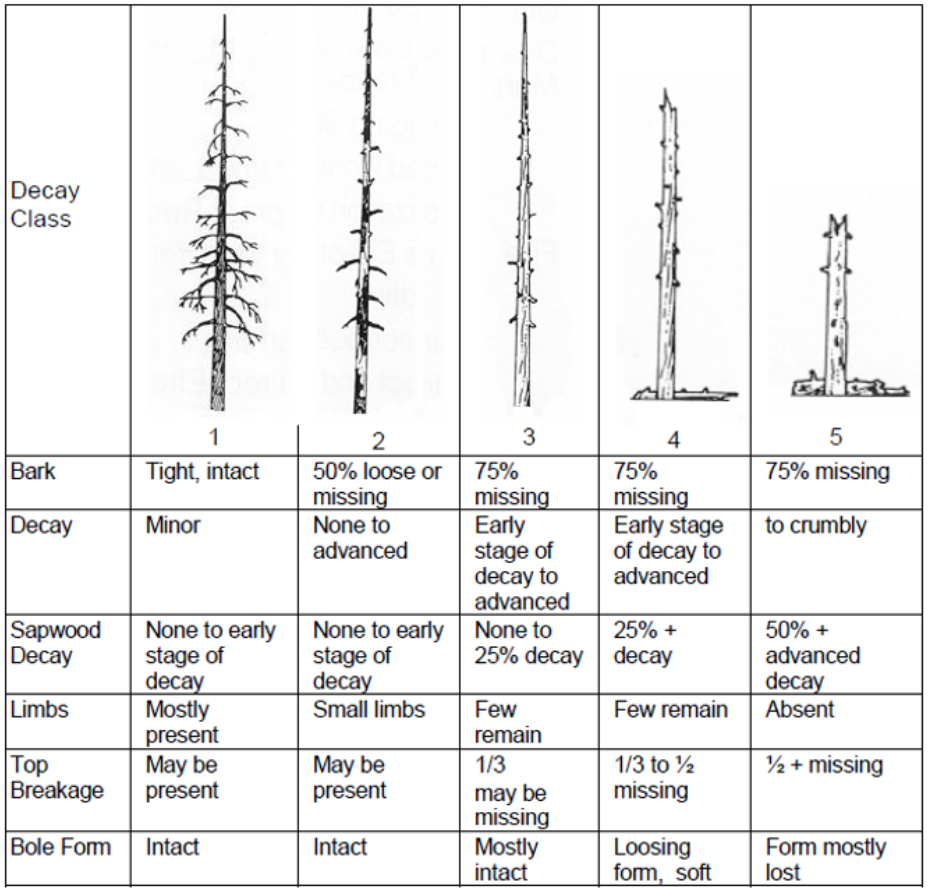
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Database user name for the person who created the record in the database. Automatically populated by the desktop and mobile software.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: dbakerallum, r1moore
Data Type	String (30)

7.13 DBH

Geodatabase Name	DBH
BLM Structured Name	Tree_Diameter_at_Breast_Height_Measurement
Inheritance	Inherited from Micro*Storms Layers
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Diameter at breast height, in inches. Can be estimated or measured.
Required/Optional	Required
Domain (Valid Values)	No domain. Examples: 5, 10
Data Type	Long Integer

7.14 DECAY_CLASS

Geodatabase Name	DECAY_CLASS
BLM Structured Name	Decay_Class_Code
Inheritance	Inherited from Micro*Storms Decay Class
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Describes the decomposition characteristics of snags or coarse woody debris. Decay classes are described in the graphic below. Live trees should be entered as decay class = 0. This field defaults to 0.

	
Required/Optional	Required
Domain (Valid Values)	dom_MS_DECAYCLASS
Data Type	Short Integer

7.15 FILEPATH

Geodatabase Name	FILEPATH
BLM Structured Name	Filename_Path_Text
Inheritance	Inherited from Entity Activities- Sampling
Feature Class Use/Entity Table	SNAG_CWD_PT, SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Computer storage location for a photo file (e.g., jpg), Word document, spreadsheet or other associated document. The value in this field serves as a hyperlink to that location and the file it opens. Could also be a directory or dataset that opens for further browsing (where multiple files are being referenced).
Required/Optional	Optional

Domain (Valid Values)	No Domain. Example: G:\bns\DistrictMonitoring\Upland\Andrews_Allotments\Alvord_Peak_6038\Pace_180\6038_001\6038-001.xls \EM_6.4.docx
Data Type	String (150)

7.16 FUNGAL_TYPE

Geodatabase Name	FUNGAL_TYPE
BLM Structured Name	Fungal_Type_Code
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_TRT_TBL
Definition	Identify the species of fungi that the tree was inoculated with. This field is required if the snag creation mechanism is fungal inoculation.
Required/Optional	Optional
Domain (Valid Values)	dom_MS_FUNGAL_TYPE
Data Type	String (10)

7.17 LAST_EDITED_DATE

Geodatabase Name	LAST_EDITED_DATE
BLM Structured Name	Last_Edited_Date
Alias Name	None
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Date the record was last modified in the database. Automatically populated by the desktop and mobile software.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 5/23/2017, 1/1/2010
Data Type	Date

7.18 LAST_EDITED_USER

Geodatabase Name	LAST_EDITED_USER
BLM Structured Name	Last_Editied_By_User_Name
Alias Name	None

Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Database user name for the person who last edited the record in the database. Automatically populated by the desktop and mobile software.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: dbakerallum, r1moore
Data Type	String (30)

7.19 MS_ID

Geodatabase Name	MS_ID
BLM Structured Name	MicroStorms_Identifier
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_PT
Definition	Linking field to the Micro*Storms harvest or mechanical treatment.
Required/Optional	Required
Domain (Valid Values)	No Domain. Example: "{29331D3C-62D6-40C1-92CE-54820089CDA2}"
Data Type	GUID

7.20 RTNTN_TREE_TYPE

Geodatabase Name	RTNTN_TREE_TYPE
BLM Structured Name	Retention_Tree_Type_Code
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	The current type or category of retained tree.
Required/Optional	Required
Domain (Valid Values)	dom_MS_RTNTN_TREE_TYPE
Data Type	String (30)

7.21 SNAG_ID

Geodatabase Name	SNAG_ID

BLM Structured Name	Snag_Identifier
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_PT, SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	Unique identified for the point feature class, used for linking to the monitoring and treatment tables.
Required/Optional	Required
Domain (Valid Values)	No Domain. Example: "{29331D3C-62D6-40C1-92CE-54820089CDA2}"
Data Type	GUID

7.22 SNAG_LEN_HT_FT

Geodatabase Name	SNAG_LEN_HT_FT
BLM Structured Name	Snag_Length_or_Height_Feet_Measure
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL, SNAG_CWD_TRT_TBL
Definition	The estimated height of the habitat tree or the length of a downed tree. Measured in feet.
Required/Optional	Required
Domain (Valid Values)	No domain. Examples: 8, 13
Data Type	Short Integer

7.23 SPECIES

Geodatabase Name	SPECIES
BLM Structured Name	Tree_Species_Code
Inheritance	Inherited from Micro*Storms Tree Layer
Feature Class Use/Entity Table	SNAG_CWD_PT
Definition	Tree species.
Required/Optional	Required
Domain (Valid Values)	dom_MS_LAYER_SPECIES_TREE
Data Type	Long Integer

7.24 TREE_NUM

Geodatabase Name	TREE_NUM
BLM Structured Name	Tree_Number_Identifier
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_PT
Definition	A unique number within the project unit that identifies the individual habitat tree or downed tree. The tree/log may be tagged with this number in the field, if desired.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: 1, 20
Data Type	String (20)

7.25 TREE_STATUS

Geodatabase Name	TREE_STATUS
BLM Structured Name	Tree_Status_Code
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL
Definition	Code to indicate if the tree is still there.
Required/Optional	Required
Domain (Valid Values)	dom_MS_TREE_STATUS
Data Type	String (10)

7.26 TRT_DT

Geodatabase Name	TRT_DATE
BLM Structured Name	Treatment_Date
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_TRT_TBL
Definition	Date the treatment was completed or planned start date. The TRT_STATUS provides the necessary information to know whether the

	treatment is completed or not.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples: 1/1/2018, 11/30/2015
Data Type	Date

7.27 TRT_NAME

Geodatabase Name	TRT_NAME
BLM Structured Name	Treatment_Name
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_TRT_TBL
Definition	Free text name that identifies the treatment entity, preferably with a place reference and treatment type reference. The name is one-to-one with TRT_ID and the two together provide more reliable identification as long as neither is changed. Naming conventions need to be standardized by programs and/or offices and enforced in order to avoid confusion and loss of information. When data is created in desktop ArcGIS, this field will be auto-populated from the most recent underlying Harvest Polygon treatment, if possible. Users will be presented with a message box asking them if they would like to do this.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples:
Data Type	String (60)

7.28 TRT_STATUS

Geodatabase Name	TRT_STATUS
BLM Structured Name	Treatment_Status_Code
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_TRT_TBL
Definition	Status of the treatment action. Used in conjunction with TRT_DATE.
Required/Optional	Required

Domain (Valid Values)	dom_TRT_STATUS
Data Type	String (12)

7.29 UNIT_NUM

Geodatabase Name	UNIT_NUM
BLM Structured Name	Harvest_Unit_Number_Identifier
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_PT
Definition	The unique harvest unit identifying number matching the given unit number in the Timber Sale Information System (TSIS) and contract Exhibit A map. When data is created in desktop ArcGIS, this field will be auto-populated from the most recent underlying Harvest Polygon treatment, if possible. Users will be presented with a message box asking them if they would like to do this.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples: 1, 2B
Data Type	String (10)

7.30 VERSION_NAME

Geodatabase Name	VERSION_NAME
BLM Structured Name	Geodatabase_Version_Text
Inheritance	Inherited from Entity ODF
Feature Class Use/Entity Table	All feature classes
Definition	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. Example: sfrazier.FIRE_POLY-121210-111034

	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.
Required/Optional	Required (automatically generated)
Domain (Valid Values)	No domain
Data Type	String (50)

7.31 MON_DT

Geodatabase Name	VISIT_DT
BLM Structured Name	Visit_Date
Inheritance	Not Inherited
Feature Class Use/Entity Table	SNAG_CWD_MON_TBL
Definition	The date of the monitoring visit.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples: 1/1/2018, 11/9/2015
Data Type	Date

7.32 WORKAGENT

Geodatabase Name	WORKAGENT
BLM Structured Name	Workagent_Text
Inheritance	Inherited from Entity Treatments
Feature Class Use/Entity Table	SNAG_CWD_TRT_TBL
Definition	"Who" did the work (or the type of procurement instrument). This attribute is not required during field collection. However, the attribute must be completed before the edit version can be submitted to the corporate dataset.
Required/Optional	Required
Domain (Valid Values)	dom_WORKAGENT
Data Type	String (40)

8. LAYER FILES (PUBLICATION VIEWS)

8.1 GENERAL

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. Feature classes that have been changed are indicated by "PUB" in their name. They are created through scripts that can be automatically 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.

8.2 SPECIFIC TO THIS DATASET

A publication view of the data will be created that will include the addition of two fields: District, Resource Area. Values for these fields are derived from the BLM_ORG_CD field.

The following fields will be dropped in the publication view: CREATED_USER, CREATED_DATE, LAST_EDITED_USER, LAST_EDITED_DATE, and VERSION_NAME.

A publication view will be created for publishing data to the web/release to the public that has the CLASSIFIER, CREATED_USER, CREATED_DATE, LAST_EDITED_USER, LAST_EDITED_DATE, and VERSION_NAME attributes removed (for privacy reasons).

9. EDITING PROCEDURES

9.1 THEME SPECIFIC GUIDANCE

There is much in the data standard that addresses editing and provides guidance especially in the Data Management Protocols (Section 3).

This dataset can be used in conjunction with either Harv_poly or Mech_poly. In Harv_Poly there is a separate tab where users will enter snag creation requirements and can report or calculate snags/acres. Snag per acre calculations can be done by using the 'unit #' data' or by using the polygon data from either Harv_Poly or Mech_Poly. If snags/cwd were located inside of a polygon in the field, but due to low GPS accuracy, appear to be outside of unit boundaries in the GIS, the user can attribute the snag/cwd as associated with the polygon to ensure it is included in the calculations. The snags per acre tool has a default buffer threshold of 15 meters, but the editor can change this.

For more detailed editing instructions, see the Micro*Storms User Guide at: http://teamspace/or/sites/MicroStormsDev/Application_Documentation/Forms/AllItems.aspx.

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10. OREGON/WASHINGTON DATA FRAMEWORK OVERVIEW

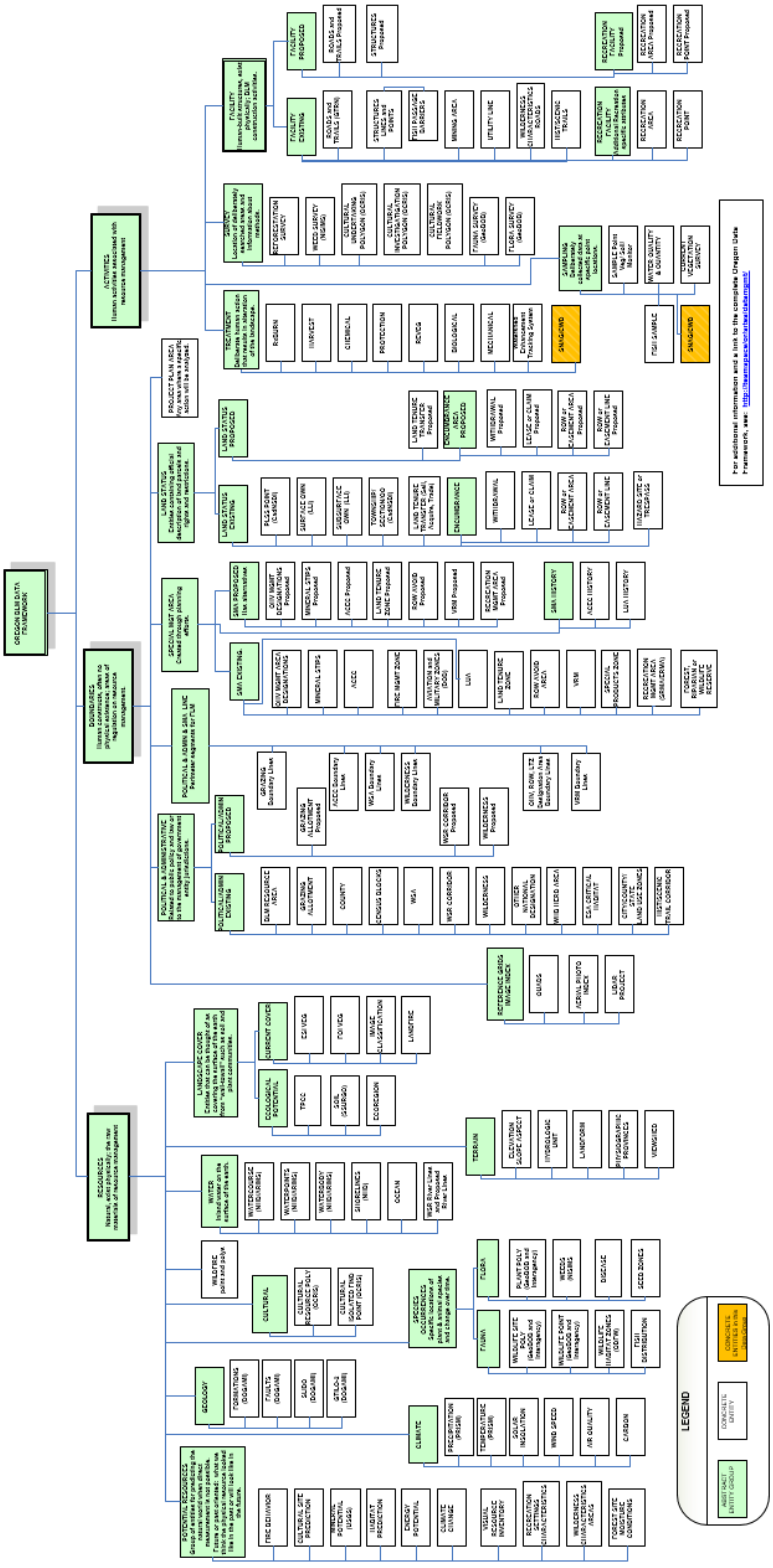

Figure 2 Oregon Data Framework Overview

11. ABBREVIATIONS AND ACRONYMS USED

(Does not include abbreviations/acronyms used as codes for particular data attributes or domain values)

Abbreviations	Descriptions
ARC	GIS line feature
BLM	Bureau of Land Management, U.S. Department of the Interior
CADNSDI	Cadastral National Spatial Data Infrastructure
CWD	Coarse Woody Debris
DEM	Digital Elevation Model
DLG	Digital Line Graphs
FOIA	Freedom of Information Act
GIS	Geographic Information System
GPS	Global Positioning System
GTRN	Ground Transportation GIS dataset
IDP	Interdisciplinary
NAD	North American Datum
NARA	National Archives and Records Administration
NEPA	National Environmental Policy Act
POLY	GIS polygon feature
PUB	Publication
RMP	Resource Management Plan
ODF	Oregon Data Framework
OR/WA	Oregon/Washington BLM Administrative State
USFS	United States Forest Service, U.S. Department of Agriculture
USGS	United States Geological Survey, U.S. Department of the Interior
SDE	Spatial Database Engine
WEB	Worldwide Web (internet)

Table 2 Abbreviations/Acronyms Used

APPENDIX A: DOMAINS (VALID VALUES)

These are the domains at the time the data standard was approved. Domains can be changed without a re-issue of the data standard. Some of the domains used in this data standard are also available at the following web site: https://www.blm.gov/about/data/oregon-data-management.

For domains not listed at that site contact the State Data Administrator for current lists. The State Data Administrator's contact information can be found at: https://www.blm.gov/about/data/oregon-data-management.

A.1 dom_BLM_ORG_CD

Administrative Unit Organization Code. Standard BLM organization codes generated from the national list. This is a subset of OR/WA administrative offices and those in other states that border OR/WA.

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
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
ORN00	ORN00 − Northwest Oregon District Office
ORN01	ORN01 − Cascades Field Office
ORN02	ORN02 − Marys Peak Field Office
ORN03	ORN03 − Siuslaw Field Office
ORN04	ORN04 − Tillamook Field Office
ORN05	ORN05 − Upper Willamette 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
ORV00	ORV00 − Vale District Office
ORV04	ORV04 − Malheur Field Office
ORV05	ORV05 − Baker Field Office
ORW00	ORW00 − Spokane District Office
ORW02	ORW02 − Wenatchee Field Office

ORW03	ORW03 − Border Field Office

A.2 dom_COORD_SRC

Coordinate Source Code. The source of the geographic coordinates - lines, points, polygons

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
DOQ	DOQ – Screen digitized linework over Digital Orthoquad backdrop
DRG	DRG − Screen digitized linework over Digital Raster Graphic (USGS) backdrop
GCD	GCD − Lines snapped to Geographic Coordinate Database Points
GPS	GPS − Coordinates obtained from a Global Positioning System device
IMG	IMG – Coordinates derived from interpretation of non-photographic imagery
MAP	MAP − Digitized coordinates from hardcopy map or onto a map backdrop
MTP	MTP − Lines duplicated from Digital Master Title Plat
SOURCEL	SOURCEL – Coordinates duplicated from a BLM GIS source layer
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

A.3 dom_MS_CREATE_MECH

Snag Creation Mechanism. The mechanism used to create the snag.

Felled	Felled
Fire Killed	Fire Killed
Basal Girdled	Basal Girdled - Girdled at breast height or less
High Girdled	High Girdled - Climbed the tree and girdled at greater than breast height.
Cavity Creation	Cavity Creation - Climbed into the crown to create cavities within the bole of the tree.
Inoculated	Inoculated
Logging Damage	Logging Damage
Natural	Natural
Pulled	Pulled
Topped	Topped

A.4 dom_MS_DECAYCLASS

Decay Class. Code to describe the decomposition characteristics of snags or coarse woody debris.

0	0 – Live tree
1	1 – Minimal decay; bark & limbs present
2	2 – Some decay; bark & limbs mostly present
3	3 – Advancing decay, bark & limbs mostly absent, bole intact
4	4 – Decayed, bark & limbs mostly absent, softening bole
5	5 – Well-decayed, soft snag/log

A.5 dom_MS_FUNGAL_TYPE

Fungal Type Code. The species of fungi that the tree was inoculated with.

ECTI	ECTI - Echinodontium tinctorium
FOCA	FOCA - Fomitopsis cajanderi
FOOF	FOOF - Fomitopsis officinalis
FOPI	FOPI - Fomitopsis pinicola
NELE	NELE - Neolentinus lepideus
POPI	POPI - Porodaedalia pini
STSA	STSA - Stereum sanguinolentum
WOCO	WOCO - Wolfiporia coco

A.6 dom_MS_LAYER_SPECIES_TREE

Tree Species Code. A list of tree species utilized by the Micro*Storms application.

231	PSME - Douglas Fir
297	TSHE - Western Hemlock
1	ABAM - Pacific Silver Fir
2	ABBR - Bristlecone Fir
3	ABCO - White Fir
4	ABGR - Grand Fir
7	ABLAL - Subalpine Fir
8	ABMA - California Red Fir
9	ABPR - Noble Fir
10	ABSH - Shasta Red Fir
15	ACMA3 - Bigleaf Maple
22	ALRH2 - White Alder
23	ALRU2 - Red Alder
43	ARME - Pacific Madrone
60	BEPAC - Western Paper Birch

69	CACH6 - Golden Chinkapin
71	CADE27 - Incense Cedar
90	CHLA - Port Orford Cedar
92	CHNO - Alaska Cedar
100	CONU4 - Pacific Dogwood
101	CRATA - Hawthorn
329	CUBA - Modoc Cypress
102	CUPRE - Cypress
119	EUCAL - Eucalyptus
126	FROR3 - Oregon Ash - Fraxinus Latifolia
349	JUGLA - Walnut
148	JUOC - Western Juniper
151	LALY - Subalpine Larch
152	LAOC - Western Larch
159	LIDE3 - Tanoak
176	MALUS - Apple
200	PIAL - Whitebark Pine
201	PIAR - Bristlecone Pine
202	PIAT - Knobcone Pine
203	PIBA - Foxtail Pine
204	PIBR - Brewers Spruce
205	PICO - Lodgepole Pine
206	PICO3 - Coulter Pine
207	PIEN - Engelmanns Spruce
208	PIFL2 - Limber Pine
209	PIJE - Jeffrey Pine
210	PILA - Sugar Pine
211	PIMO - Pinyon Pine
212	PIMO3 - Western White Pine
213	PIMU - Bishop Pine
214	PINUS - Pine
215	PIPO - Ponderosa Pine
216	PIRA2 - Monterey Pine
217	PISA2 - California Foothill Pine (digger Pine)
218	PISI - Sitka Spruce
219	PLRA - California Sycamore
220	POBAT - Black Cottonwood
225	POPUL - Cottonwood
228	POTR5 - Quaking Aspen
229	PREM - Bitter Cherry
230	PSMA - Bigcone Douglas-fir
238	QUAG - California Live Oak
239	QUCH2 - Canyon Live Oak
240	QUGA4 - Oregon White Oak

241	QUKE - California Black Oak
330	QULO - California White Oak
244	QUWI2 - Interior Live Oak
268	SALIX - Willow
272	SEGI2 - Giant Sequoia
273	SESE3 - Redwood
287	TABR2 - Pacific Yew
290	THPL - Western Redcedar
293	TOCA - California Torreya (nutmeg
298	TSME - Mountain Hemlock
299	UMCA - California Laurel
320	Z_C - Cedars As A Type Group
321	Z_FM - True Fir Mountain Hemlock Type
322	Z_HD - Hardwoods As A Type Group
324	Z_NH - Non-commercial Hardwoods
325	Z_OM - Oak Madrone Type
326	Z_P - White Pine As A Type Group
327	Z_PJ - Ponderosa-Jeffrey Pine Group
328	Z_WG - White Fir-Grand Fir Type
999	Unknown

A.7 dom_MS_RTNTN_TREE_TYPE

Retention Tree Type. The current type or category of retained tree.

Existing Habitat Tree	Existing Habitat Tree
Created Habitat Tree	Created Habitat Tree
Downed Tree	Downed Tree

A.8 dom_MS_TREE_STATUS

Tree Status Code. Code to indicate if the tree is still there.

Live	Live
Dead	Dead
Blow Down	Blow Down
Missing	Missing
Removed	Removed

A.9 dom_TRT_STATUS

Treatment Status Code. Status of the treatment action.

Completed	Completed – Treatment action completed.
Proposed	Proposed – Action not yet started.
Active	Active – Treatment action underway.
Deferred	Deferred – Treatment deferment is given in Reason.
Suspended	Suspended – Treatment action halted.
Rejected	Rejected – Considered by BLM and found unsuitable.

A.10 dom_WORKAGENT

Work Agent Code. Who did the work (or the type of procurement instrument).

Federal Labor	Federal Labor
Service Contract	Service Contract
IDIQ Contract	IDIQ Contract - non-Stewardship
Stewardship Contract	Stewardship Contract
Permittee	Permittee
Coop Agreement	Coop Agreement - ODFW, ODA, County, etc.
Grantee	Grantee
Volunteer	Volunteer
Timber Sale	Timber Sale
Landowner	Landowner
Purchase Order	Purchase Order
Micro-Purchase	Micro-Purchase
Unknown	Unknown