Aquatic Resource Management

Delineation GIS Data Description

The purpose of this document is to provide a description and set of instructions for creating a Geographic Information System (GIS) dataset for delineations submitted to the Department of State Lands (DSL). This document outlines the names of the GIS feature classes and their attributes required for a submitted dataset. When submitting a wetland delineation report, please use DSL's Delineation GIS Template or follow the structure outlined in this document.

The layers attributes below are provided in the Delineation GIS Template. If the DSL Delineation GIS template is not used, then the dataset must include all the following required attributes with fields fully populated.

1) **Format** – The DSL Delineation GIS data description below was developed by DSL as a File Geodatabase , a proprietary data structure developed by Esri.

2) **Projection –** All GIS datasets delivered shall be in in the State's standard map projection, Oregon Lambert Conic Conformal, WKID 2992, EPSG 2992 (Datum: NAD 83; Units: International feet: 3.28084; Spheroid: GRS1980). For more information about the correct standard projection please consult the Oregon Coordinate Reference System Standard.

3) **Layers and Attributes**
   Note: Shaded attributes indicate those that are populated by the GIS software. All other attributes need to be populated by those preparing the delineation GIS data. A 'Pick List' of options occur for some Attributes. They are listed in **Appendix A**. Most attributes can be entered in the field, however, a few may require entry after field work is complete (e.g. HMT_ELEVATION, ACRES).

4) **How to Submit –** There is no change to submitting the full wetland delineation report, via email to DSL. However, upload the GIS file to DSL's file intake system, with the date included in the file name. Please confirm that this step has been completed in your report submission email to wetland.delineation@dsl.oregon.gov, providing the name of the uploaded GIS file(s).

5) **Additional Resources**
   See Appendix B

I. **Highest Measured Tide (HMT_LINE)**
   Mandatory when present

Attribute	Type	Width	Description
OBJECTID			Database unique ID
SHAPE	Line		Database Feature Type
ESTUARY_NAME	Text	50	Estuary or waterway name
HMT_ELEVATION	Double		HMT elevation, using **NAVD88 datum**
SHAPE_LENGTH	Double		Database calculation of the length of the line

II.   Sample Plot Point (SAMPLE_PLOT)
Optional-highly encouraged

Attribute	Type	Width	Description
OBJECTID			Database unique ID
SHAPE	Point		Database Feature Type
SP_ID	Text	15	Sample plot with identification code that corresponds to the code on the data form.

III.   Stream Centerline (STREAM_CL)
 Optional (May be used for streams ≤6' wide in lieu of OHWL)
 Note: If multiple ARSC classifications, add digitized polyline and label to the map otherwise map components separately in the field.

Attribute	Type	Width	Description
OBJECTID			Database unique ID
SHAPE	Line		Database Feature Type
STREAM_ID	Text	50	If named in National Hydrography Dataset (NHD) or 3D Hydrography Program (3DHP) use that. If not, use unique identifier
WIDTH_MAX	Text	100	Provide the maximum width of the reach in feet, or the estimated maximum width if one bank is outside of the study area
STREAMFLOW_DURATION	Text	15	Choose streamflow duration - *from pick list*
ESH	Text	5	Is ESH-designated habitat present - *from pick list*
ARSC	Text	50	Choose ARSC - *from pick list*
SHAPE_LENGTH	Double		Database calculation of the length of the line

IV.   Stream OHW line (STREAM_OHWL)
Mandatory when present
Note: If multiple ARSC classifications, add digitized polyline/polygon with label to the map, otherwise map components separately in the field.

Attribute	Type	Width	Description
OBJECTID			Database unique ID
SHAPE	Line		Database Feature Type
STREAM_ID	Text	50	If named in National Hydrography Dataset (NHD) use that. If not, use unique identifier
BANK_SIDE	Text	5	Looking downstream choose bankside - *from pick list*
STREAMFLOW_DURATION	Text	15	Choose streamflow duration - *from pick list*
ESH	Text	5	Is ESH-designated habitat present - *from pick list*
ARSC	Text	50	Choose ARSC - *from pick list*
WIDTH_MAX	Text	100	Provide the maximum width of the reach in feet, or the estimated maximum width if one bank is outside of the study area
SHAPE_LENGTH	Double		Database calculation of the length of the line

V. **Study Area Polygon (STUDY_AREA)**
Mandatory

Attribute	Type	Width	Description
OBJECTID			Database unique ID
SHAPE	Polygon		Database Feature Type
SA_NAME	Text	50	Study Area Name
WD_NUMBER	Text	15	Filled in by DSL upon approval
ACRES	Double		Study area acres. In X.xx format
ACCESS	Text	5	Property access granted for entire study area - *from pick list*
SHAPE_AREA	Double		Database calculation of the area of the polygon in square feet
SHAPE_LENGTH	Double		Database calculation of the perimeter of the polygon

VI. **Tax Lot Polygons (TAX_LOT): Mandatory** for Study Area Location

Note: Only tax lots within study area or those intersected by study area. Non-tax lots (e.g. ROAD, ROW, WATER, RAIL clipped to study area edge)

Attribute	Type	Width	Description
OBJECTID			Database unique ID
SHAPE	Polygon		Database Feature Type
MAP_NUMBER	Text	30	Must use Tax Map number as stored in the County's Assessor's database
TAXLOT	Text	5	Tax lot number NOT padded with leading zeros (e.g. 100, 200). For polygons without tax lot numbers, the allowable values are, ROADS, RAILS, WATER or NONTL
MAPTAXLOT	Text	25	Map and tax lot number as stored in the assessor's database
COMMENT	Text	100	Any additional comment regarding access.
TL_SOURCE	Text	100	Describe how tax lot boundary(s) were added to map
SHAPE_AREA	Double		Database calculation of the area of the polygon in square feet
SHAPE_LENGTH	Double		Database calculation of the perimeter of the polygon

VII.　Water Polygons (WATER_POLY)

Mandatory when waterbody present (e.g. lake >6.6 feet deep). Optional alternate method to map streams >6' wide

Note: If multiple ARSC classifications, add digitized polyline/polygon with label to the map otherwise map components separately in the field.

Attribute	Type	Width	Description
OBJECTID			Database unique ID
SHAPE	Polygon		Database Feature Type
WATER_ID	Text	50	If named in NHD or 3DHP, use that, if not use unique identifier.
ESH	Text	5	Is ESH-designated habitat present - *from pick list*
ARSC	Text	50	Choose ARSC - *from pick list*
OPTIONAL_MAX WIDTH	Text	100	For waterways mapped as polygons, provide the maximum width of the reach in feet, or the estimated maximum width if one bank is outside of the study area
OPTIONAL_LINEAR FEET	Text	100	For streams mapped as polygons, list linear feet
OPTIONAL_STREAMFLOW_DURATION	Text	15	Choose streamflow duration - *from pick list*
OPTIONAL_ACRES	Double		Waterbody area (in acres) within the study area. In X.xx format, unless <0.01, then X.xxx.
SHAPE_AREA	Double		Database calculation of the area of the polygon in square feet
SHAPE_LENGTH	Double		Database calculation of the perimeter of the polygon

VIII.　Wetland Polygons (WETLANDS)

Mandatory when present

Note: If multiple Cowardin/HGM/ARSC classifications, add digitized polyline/polygon with label to the map otherwise map components separately in the field.

Attribute	Type	Width	Description
OBJECTID			Database unique ID
SHAPE	Polygon		Database Feature Type
WETLAND_ID	Text	15	Unique identifier.
ACRES	Double		Wetland area (in acres) within the study area. In X.xx format, unless <0.01, then X.xxx.
DSL_FILE_NO	Text	100	For polygons sourced from previous DSL files, provide file number(s). Leave blank if not sourced from previous file.
ESH	Text	5	Is ESH-designated habitat present - *from pick list*
COWARDIN	Text	50	Choose Cowardin system and class code - *from pick list*
HGM	Text	50	Choose HGM class and subclass - *from pick list*
ARSC	Text	50	Choose ARSC - *from pick list*
MOSAIC	Text	5	Is wetland a wetland/upland mosaic - *from pick list*

SHAPE_AREA	Double		Database calculation of the area of the polygon in square feet
SHAPE_LENGTH	Double		Database calculation of the perimeter of the polygon

Additional Considerations

(a) Effective June 1, 2028, applicants are required to submit GIS data for all applicable layers in an updated DSL Delineation GIS Template [OAR 141-090-0035(5)(b)]. That update is expected to include elements that are required on paper maps but not required in GIS at this time. Examples: Photo Points, Compensatory Wetland Mitigation boundaries, Ground Disturbance in Wetlands/Other Waters, and Project Mile Posts for Large or Linear study areas

(b) Metadata must be completed for each layer and conform to the current Oregon Geographic Information Council Metadata Standard. and must include the following disclaimer: "**This mapping documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of the investigator's knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk until it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055. A current approved wetland delineation is required for state removal-fill permits. You are advised to contact the Department of State Lands and the U.S. Army Corps of Engineers with any regulatory questions.**"

(c) For consultants that exclusively use computer-aided design (CAD), DSL suggests the following steps (1-5) as a means to satisfy OAR 141-090-0035(5).

   (1) Complete the survey (GPS or PLSS) in, or accurately convert the survey to, the State's standard map projection/coordinate system [NAD83 / Oregon Statewide Lambert (Intl Feet), WKID #2992]. In CAD, use OR-GIS83.

   (2) Utilize the list of mandatory and optional layers above [(I)-(VII)] to create the required layers in CAD (e.g. STUDY_AREA & SAMPLE_PLOT).

   (3) Fill out the required attributes in Layer Properties: The grey portions of the attribute tables above are auto-generated in GIS, but the white cells are tailored to the layer. Please add the attributes in white as Layer Properties and include the required Description column information.

   (4) Utilize AutoDesk's Help website to export the required layers to a file geodatabase (FGDB) format. Please note that DSL only wants GIS data for the required layers listed, not all the data that you may have saved in your drawing.

   (5) Upload the FGDB file to DSL's file intake system, with the date included in the file name. Please confirm that this step has been completed in your report submission email to wetland.delineation@dsl.oregon.gov, providing the name of the uploaded GIS file(s).

Appendix A: Pick Lists

	CODE	VALUE/Description

- **ACCESS**
  - **Y**   **Yes**
  - **N**   **No**

- **ARSC_TYPE**
  - **Not Present**   **Not Present**
  - **Core Cold Water Habitat / Refugia**   **Core Cold Water Habitat / Cold Water Refugia**
  - **Stream Alcoves / Side Channels**   **Stream Alcoves / Side Channels**
  - **Eel Grass / Kelp Beds**   **Eel Grass / Kelp Beds**
  - **Wooded Tidal Wetlands**   **Wooded Tidal Wetlands**
  - **Alkali Wetlands / Lakes / Playas**   **Alkali Wetlands / Lakes / Playas**
  - **Poor Fens / Bogs**   **Poor Fens / Bogs**
  - **Fens**   **Fens**
  - **Hot Springs**   **Hot Springs**
  - **Interdunal Wetlands**   **Interdunal Wetlands**
  - **Mature Forested Wetlands**   **Mature Forested Wetlands**
  - **Ultramafic (Serpentine) Wetlands**   **Ultramafic (Serpentine) Wetlands**
  - **Vernal Pools**   **Vernal Pools**
  - **Willamette Valley Wet Prairie**   **Willamette Valley Wet Prairie**
  - **Multiple**   **Multiple**

- **BANKSIDE**
  - L   Left
  - **R**   Right

- **COWARDIN**
  - **PEM**   Palustrine Emergent Wetland
  - **PSS**   Palustrine Scrub-Shrub Wetland
  - **PFO**   Palustrine Forested Wetland
  - **Multiple**   Multiple
  - **PAB**   Palustrine Aquatic Bed
  - **PML**   Palustrine Moss-Lichen Wetland
  - **PRB**   Palustrine Rock Bottom
  - **PUB**   Palustrine Unconsolidated Bottom
  - **PUS**   Palustrine Unconsolidated Shore
  - **R1AB**   Riverine Tidal Aquatic Bed
  - **R1EM**   Riverine Tidal Emergent Wetland
  - **R1RB**   Riverine Tidal Rock Bottom
  - **R1RS**   Riverine Tidal Rocky Shore
  - **R1UB**   Riverine Tidal Unconsolidated Bottom
  - **R1US**   Riverine Tidal Unconsolidated Shore
  - **R2AB**   Riverine Lower Perennial Aquatic Bed
  - **R2EM**   Riverine Lower Perennial Emergent Wetland
  - **R2RS**   Riverine Lower Perennial Rocky Shore
  - **R2UB**   Riverine Lower Perennial Unconsolidated Bottom
  - **R2US**   Riverine Lower Perennial Unconsolidated Shore
  - **R3AB**   Riverine Upper Perennial Aquatic Bed
  - **R3RB**   Riverine Upper Perennial Rock Bottom
  - **R3RS**   Riverine Upper Perennial Rocky Shore

- R3UB   Riverine Upper Perennial Unconsolidated Bottom
- R3US   Riverine Upper Perennial Unconsolidated Shore
- R4SB   Riverine Intermittent Streambed
- E1AB   Estuarine Subtidal Aquatic Bed
- E1RB   Estuarine Subtidal Rock Bottom
- E1RF   Estuarine Subtidal Reef
- E1UB   Estuarine Subtidal Unconsolidated Bottom
- E2AB   Estuarine Intertidal Aquatic Bed
- E2EM   Estuarine Intertidal Emergent Wetland
- E2FO   Estuarine Intertidal Forested Wetland
- E2RF   Estuarine Intertidal Reef
- E2RS   Estuarine Intertidal Rocky Shore
- E2SB   Estuarine Intertidal Streambed
- E2SS   Estuarine Intertidal Scrub-Shrub Wetland
- E2US   Estuarine Intertidal Unconsolidated Shore
- L1AB   Lacustrine Limnetic Aquatic Bed
- L1RB   Lacustrine Limnetic Rock Bottom
- L1UB   Lacustrine Limnetic Unconsolidated Bottom
- L2AB   Lacustrine Littoral Aquatic Bed
- L2EM   Lacustrine Littoral Emergent Wetland
- L2RB   Lacustrine Littoral Rock Bottom
- L2RS   Lacustrine Littoral Rocky Shore
- L2UB   Lacustrine Littoral Unconsolidated Bottom
- L2US   Lacustrine Littoral Unconsolidated Shore
- N/A   Not Applicable

- **ESH**
  - **Y**   **Yes**
  - **N**   **No**

- **HGM**
  - **RFT**   Riverine Flow-Through
  - **RI**   Riverine Impounding
  - **DCP**   Depressional Closed Permanently Flooded
  - **DCNP**   Depressional Closed Non-permanently Flooded
  - **DOF**   Depressional Outflow
  - **DA**   Depressional Alkaline
  - **DB**   Depressional Bog
  - **SH**   Slope Headwater
  - **SV**   Slope Valley
  - **Flats**   Flats
  - **LFH**   Lacustrine Fringe Headwater
  - **LFV**   Lacustrine Fringe Valley
  - **EFRS**   Estuarine Fringe River-Sourced
  - **EFB**   Estuarine Fringe Embayment
  - **Multiple**   Multiple
  - **N/A**   Not Applicable

- **MOSAIC**
  - **Y**   **Yes**
  - **N**   **No**

- **STREAMFLOW_DURATION**
  - Perennial   Perennial
  - Intermittent   Intermittent
  - Ephemeral   Ephemeral

Appendix B: Additional Resources

DSL's Local Wetlands Inventory (LWI) Digital Data Standards (OAR 141-086-0225)
secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=351

DSL's Wetland Delineation Report Standards and Requirements for Figures and Maps (OAR 141-090-0035)
https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=355

Adamus, P.R. 2001. Guidebook for Hydrogeomorphic (HGM)–based Assessment of Oregon Wetland and Riparian Sites. Statewide Classification and Profiles. Oregon Division [Department] of State Lands, Salem, OR. https://www.oregon.gov/dsl/wetlands-waters/Documents/HGMGuide.pdf

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, Washington, D.C.

Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States, FGDC-STD-004-2013, Second Edition, Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.

Oregon Geographic Information Council. 2010. Oregon Wetland Mapping Standard. Version 2.1.1—revised April 2010 based on comments from ODSL, ORNHIC, The Wetlands Conservancy, and the March 2010 GIS Standards Forum. https://www.oregon.gov/eis/geo/OGIC%20Approved%20Data%20Standards/Wetland_Mapping_Standard_v2_1_1.pdf

United States Fish & Wildlife Service. 2016. National Wetland Inventory Water Regime Restriction Table. https://www.fws.gov/media/national-wetland-inventory-water-regime-restriction-table