

Aquatic Resource Management



Statewide Wetlands Inventory

The SWI web map provides state-recognized wetlands, waters, and certain soils mapping in one location.

It includes multiple sources of aquatic resource mapping because DSL regulates wetlands and waters.

If you have GIS desktop capabilities and wish to download the original datasets and configure them to display as in the SWI, or to connect to the SWI layers as web services on your system, find directions at the *"Using the SWI web map tools and dataset directions"* link on the [DSL Inventories webpage](#). Find descriptions of these layers below. Most of the map datasets displayed on the SWI are updated annually from the original sources and published on December 1. Essential Salmonid Habitat (ESH) is updated annually on February 1. State Scenic Waters and Local Wetlands Inventories are updated as designated or approved.

Disclaimer

Information shown on this map is for planning purposes, represents the conditions that exist at the map date, and is subject to change. The location and extent of wetlands and other waters is approximate. ***There may be unmapped wetlands and other waters present that are subject to regulation.*** A current Oregon Department of State Lands-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.

The Statewide Wetlands Inventory (SWI) represents the best data available at the time the data was published and is updated as new data becomes available. In all cases, actual field conditions determine the presence, absence and boundaries of wetlands and waters (such as creeks and ponds). An onsite investigation by a wetland professional can verify actual field conditions.

This product is for informational purposes, and may not be suitable for legal, engineering, or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

Some SWI data layers are created and maintained by organizations and entities outside of the Department of State Lands. Brief descriptions and limitations are provided. Refer to the original source documentation to better understand the data sources, results, methodologies and limitations of each dataset presented. DSL makes no claims, representations or warranties as to the accuracy or completeness of these external data layers.

Layer Descriptions and Limitations

It is always good to know the limitations and accuracy of each map source. These descriptions are provided for general information. See the original map source documentation for full map dataset details.

US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI)

"The National Wetlands Inventory (NWI) was established by the US Fish and Wildlife Service (FWS) in 1974 to conduct a nationwide inventory of U.S. wetlands to provide its biologists and others with information on the distribution of wetlands to aid in wetland conservation efforts."

NWI mapping was originally based on high-altitude aerial photography used to identify visible wetlands and other waters. The scope of this national effort limited the amount of field verification possible. Most of the Oregon mapping dates to the mid-1980s. The coastal zone up to 100' elevation was updated between 2001 and 2011 when the NWI was digitized. NWI mapping is available for the entire state.

There are limitations with the Oregon NWI, including:

- There are unmapped wetlands and waters, including many smaller, seasonal, and forested wetlands that may not have been detected from the aerials, or were considered too small to map.
- By policy, the NWI excludes certain types of "farmed wetlands" as may be defined by the Food Security Act. Although many farmed areas in Oregon meet wetland criteria, many of these important wetlands are unmapped on the NWI.
- The development scale of 1:24,000 and other factors cited above make the wetland and water boundary locations approximate. Conducting on-the-ground wetland delineations is the only way to verify wetland boundary locations.

For more information go to the NWI home page: <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>

USGS National Hydrography Dataset (NHD)

"The US Geological Survey's NHD represents the nation's drainage networks and related features, including rivers, streams, canals, lakes, ponds, glaciers, coastlines, dams and stream gages. The NHD High Resolution, at 1:24,000 scale or better, is the most up-to-date and detailed hydrography dataset for the nation."

The NHD is developed through complex modeling using multiple types of information, including some local level input. The mapped resource boundaries may differ from their actual location on the ground. Onsite investigations may be needed to confirm wetlands and waters boundaries.

The NHD has many more features than are displayed in the SWI because many of these features are structures within or beside waters and overly complicate the SWI mapping of waters. The subset of the NHD represented in the SWI includes only those items listed below. Items may occur in different groups because the waters are mapped slightly differently. Structures like flumes were included because they may convey potential waters of this state.

- NHDPoint – Spring/Seep
- NHDFlowline (line) – Canal/Ditch, Coastline, Stream/River
- NHDWaterbody – Estuary, Lake/Pond, Playa, Reservoir, Swamp/Marsh
- NHDArea – Area of complex channels, Bay/Inlet, Canal/Ditch, Flume, Foreshore, Inundation area, Lock chamber, Rapids, Sea/ocean, Spillway, Stream/river, Submerged stream, Wash, Water intake/outflow

For general information about the NHD see <https://nhd.usgs.gov/>.

USDA NRCS Soils

The US Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) develops soil surveys that include maps of soil units and related reports. Extensive fieldwork is done to complete the mapping and document findings. The maps consist of outlined areas called *map units*. These are areas with generally similar soils, or a similar mix of soil types that can be consistently identified across the landscape. When more than one named soil occurs in a map unit, each soil is called a component of the map unit. Each component makes up a certain percentage of the map unit. Two subsets of the soils dataset are helpful in predicting the presence of wetlands and are included in the SWI as "SWI Soils." The two subsets creating the SWI Soils are predominantly hydric soil map units and Agate-Winlo soil, and are described below.

The dataset used for the SWI is newly created by the NRCS called "gNATSGO." This combines two levels of mapping, called "SSURGO" and "STATSGO," and has added more than 6 million acres of previously unmapped areas in Oregon including, for the first time, mapping for all of Wheeler County.

As with the other map layers in the SWI, there may be areas mapped as SWI Soils that do not contain wetlands, and wetlands may also occur outside of the SWI Soils. The presence of SWI Soils helps planners, landowners, and others recognize where further site assessment is needed.

Predominantly hydric soil map units

Some soils naturally retain water longer than others, especially when they occur on certain parts of the landscape, such as in depressions. These soils often exhibit characteristics (e.g. "routinely flooded") that meet the definition of, and are designated as "hydric soils." (NRCS Hydric Soils List Criteria <https://www.nrcs.usda.gov/publications/query-by-state.html>) Because of these characteristics hydric soils are often found on the landscape where wetlands occur.

The SWI shows soil map units that are comprised of predominantly (greater than 50%) hydric soil components. This means that a user can expect more than half of that soil map unit to include soil components that have been designated as hydric by NRCS. These map units indicate places across the landscape with a higher likelihood for wetland occurrence. Displaying predominantly hydric soil map units in the SWI is especially helpful in recognizing potential wetland areas in places where only the NWI wetland mapping is available.

Agate-Winlo soil, Jackson County

Agate-Winlo soil occurs in Jackson County near Medford and is highly associated with a type of aquatic resource of special concern called vernal pools. This soil is not a predominantly hydric map unit so is a separate layer.

More information on the NRCS soil survey: <https://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

For information on the gNATSGO dataset: <https://www.nrcs.usda.gov/resources/data-and-reports/gridded-national-soil-survey-geographic-database-gnatsgo>

Local Wetlands Inventories (LWI) – Now available digitally and added to the SWI web map

In addition to mapping wetlands and waters within a specific study area, LWIs include a report describing the study methods, study area, detailed information about each wetland identified and a functional assessment of each wetland greater than 0.5 acre in size. The functional assessment scores each wetland's capacity to provide or perform functions such as improving water quality, water storage and delay, and fish and wildlife habitats. These findings are used to determine if a wetland is a "locally significant wetland" (LSW). These significant wetlands may gain additional local protection.

The more accurate LWI wetlands and waters mapping replaces the above listed SWI map national layers within the study area of the LWI. LWI mapping is for planning purposes. DSL approved wetland delineation mapping supersedes LWI mapping and is required for state Removal-Fill (and federal Clean Water Act) permits.

Characteristics of LWI mapping include:

- Wetland boundaries are mapped onsite where access permission is granted. Where access is not permitted, resource boundaries are estimated using offsite methods. Offsite methods yield less reliable results; there may be wetlands and waters that are unmapped and boundary accuracy is decreased.
- Recent LWIs have a boundary accuracy of approximately 5 meters (16.4 feet). Prior to 2009 the goal accuracy was +/- 25 feet.
- Wetlands that are estimated to be smaller than 0.5 acre are represented as “probable wetlands” (PW). LWIs that were developed prior to 2001 rules were not required to map wetlands or waters smaller than 0.5 acres. These LWIs generally have approval dates prior to 2002.
- Most LWI field work includes some level of ground-verification of stream locations.
- LWIs include multiple feature types. See the LWI Data Description on the Inventories webpage (below).
- The SWI will be updated with new LWIs as they are approved. The maps, reports and datasets will be available on the LWI webpage at about the same time.

The older LWIs were developed and approved in paper format only. After a 2001 rule change LWI products included digital datasets. With a grant from the Environmental Protection Agency (EPA), DSL had the paper maps digitized and had all the datasets standardized into a consistent structure. Previous versions of the SWI web map showed only the LWI study areas. LWI wetlands and waters feature layers are now added to the SWI web map. Data layers include Wetlands, Probable Wetlands, LWI Streams, LWI Waterbodies, and Artificial Features. For more information on these layers, view or download the DSL LWI GIS data description at the link below. View and download PDF versions of the LWI reports and maps, and download the standardized individual LWI GIS datasets or the blank LWI GIS template here: <https://oregon.gov/dsl/wetlands-waters/Pages/inventories-maps.aspx>

Essential Salmonid Habitat (ESH) and State Scenic Waterways (SSW) – Now available on the SWI web map

Being aware of the locations of ESH and SSW can be helpful for project planning. Any removal and fill activities within ESH and SSW designated waters and hydrologically connected wetlands require a DSL permit. Activities customarily associated with agriculture in ESH may have a 50 cubic yard permit threshold. Oregon Parks and Recreation Department’s (OPRD) SSW Classification Areas include adjacent land within 1/4-mile of the bank of Waldo Lake and SSW river segments. Projects within this area may require additional permitting and coordination with OPRD.

SWI mapping that *may* be added to the web map in the future:

Compensatory mitigation (CM) sites – all removal and fill in CM sites requires a DSL permit and double mitigation. DSL has received an EPA grant to create a polygon dataset of all DSL CM sites statewide. This will be added to the SWI when “completed.”

DSL-Approved Wetland Delineation Mapping – This is the most accurate wetland mapping and supersedes other mapping types within a study area, but it is not available in GIS format. DSL has received an EPA grant to create a polygon dataset of all wetland delineation and determination study area boundaries for the SWI.

More information:

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<https://oregon.gov/dsl/wetlands-waters/Pages/inventories-maps.aspx>

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