**ReadMe File**

**Oregon’s 2012 Integrated Report – Submitted to EPA for Review and Action**

**Assessment Geodatabase**

**Oregon Department of Environmental Quality**

This document provides information for those using Oregon’s 2012 Integrated Report Assessment Geodatabase. The geodatabase was developed by the Oregon Department of Environmental Quality (DEQ) to spatially display information about water quality in Oregon's waters based on information in Oregon’s 2012 Integrated Report Assessment Database and 303(d) List which is available on-line at <http://www.deq.state.or.us/wq/assessment/rpt2012/search.asp>. The on-line searchable database should be used in conjunction with this geodatabase, and is the reference source to verify all attribute information about water quality. DEQ submitted Oregon’s 2012 Integrated Report and 303(d) list to EPA on November 5, 2014. EPA will review and either approve or disapprove the 2012 303(d) list as submitted. After EPA has taken final action, the 2012 303(d) list will become effective for Clean Water Act purposes. Contact DEQ for information about the status of Oregon’s 2012 303(d) list or check the website at <http://www.deq.state.or.us/wq/assessment/assessment.htm> .

The Assessment geodatabase is provided in an ArcGIS10 geodatabase. Information about the feature class and attribute table field names and definitions/descriptions is contained in the **metadata**. Metadata was prepared using the FGDC CSDGM metadata style. (Download an FGDC Metadata Editor add-in at <http://blogs.esri.com/esri/arcgis/2010/06/25/fgdc-metadata-editor-for-arcgis-10/> ).

**Content**

The Assessment geodatabase contains:

|  |  |  |
| --- | --- | --- |
| Name | Type | Content |
| OR\_Streams\_WaterQuality\_2012 | Line feature class | Geospatial information and 2012 Integrated Report assessment information for Oregon streams and rivers |
| OR\_Streams\_WaterQuality\_2012\_Attaining  OR\_Streams\_WaterQuality\_2012\_InsuffData  OR\_Streams\_WaterQuality\_2012\_WQLimited | Line feature class | Subsets of feature class with 2012 INTEGRATED REPORT assessment information for streams and rivers |
| OR\_Lakes\_WaterQuality\_2012 | Polygon feature class | Geospatial information and 2012 Integrated Report assessment information for Oregon lakes, ponds, and reservoirs |
| OR\_Lakes\_WaterQuality\_2012\_Attaining  OR\_Lakes\_WaterQuality\_2012\_InsuffData  OR\_Lakes\_WaterQuality\_2012\_WQLimited | Point feature class | Subsets of feature class with 2012 Integrated Report assessment information for lakes, ponds, and reservoirs |
| OR\_Beaches\_WaterQuality\_2012 | Line feature class | Geospatial information with 2012 Integrated Report assessment information for Oregon coastal beaches |
| Assessment\_Report\_Summary | Table | 2012 Integrated Report assessment data |
| Surface\_Water\_Monitoring\_Stations | Point feature class | Location information for monitoring stations used in the 2012 Integrated Report assessment |
| Action, Affected\_Use, Narrative\_Criteria, Numeric\_Criteria, Pollutant, Season, Status | Tables | Reference tables for assessment information |
| DEQ\_Streams | Line feature class | Base hydrography |
| DEQ\_Lakes | Polygon feature class | Base hydrography |
| Coastal\_Beaches | Line feature class | Base geospatial information for Oregon coastal recreation beaches |

**Water Quality Information**

The Assessment geodatabase contains information about the water quality condition in streams, rivers, lakes, ponds, and reservoirs. Based on evaluating water quality information, DEQ assigns a status category to each assessment record. The status categories in the 2012 Integrated Report are given as text and identifying codes in the assessment database and include:

**Category 1**: All standards are met. (This category is not used by DEQ.) (Status\_ID = 11)

**Category 2**: **Attaining** - Specific water quality standards are met. (Status\_ID = 12)

**Category 3: Insufficient data** to determine whether a standard is met. (Status\_ID = 13) or

**Category 3B:** **Insufficient data, potential concern** - Some data indicate non-attainment of a criterion, but data are insufficient to assign another category. (Status\_ID = 19)

**Note: Category 3C**: Impairing pollutant unknown. (Status\_ID = 22) was disapproved by EPA and is no longer used.

**Category 4**: Water is **water quality limited but a TMDL is not needed**. (Status\_ID = 20) or

**Category 4A:** Water quality limited, TMDL approved - TMDLs needed to attain applicable water quality standards have been approved. (Status\_ID = 14) or

**Category 4B:** Water quality limited, other pollution control requirements are expected to address all pollutants and will attain water quality standards. (Status\_ID = 15) or

**Category 4C**: Water quality limited, Impairment is not caused by a pollutant (e.g., flow or lack of flow is not considered a pollutant.) (Status\_ID = 16)

**Category 5**: Water is **water quality limited and a TMDL is needed; Section 303(d) list.**

(Status\_ID = 17).

In some instances when Oregon water quality standards have been revised, the assessment is no longer appropriate and no status category is assigned. Instead, the assessment will be noted as **Criteria change or use clarification** (Status\_ID = 10), **Inactive** (Status\_ID = 21), or **No criteria** (Status\_ID = 18).

The Assessment geodatabase contains current status information for all the waters that have been assessed. Some feature classes with subsets of assessment information have been provided in the geodatabase and include:

Attaining – Category 2 (Status\_ID = 12)

Insufficient Data – all Category 3 (Status\_ID = 13 or 19)

Water quality limited or impaired waters – all Category 4 and Category 5. (Status ID = 14, 15, 16, 17, or 20)

**Hydrography datasets**

DEQ compiled digital vector hydrography datasets for the purposes of producing, analyzing, and displaying georeferenced information for the Integrated Report. Oregon rivers and streams are represented in a feature class named DEQ\_Streams. Lakes, ponds, and reservoirs are represented in a feature class named DEQ­\_Lakes.

The DEQ\_­Streams feature class combines geospatial files from both 1:100,000 (1:100K) and 1:24,000 (1:24K) scales as needed to represent water bodies where water quality information was assessed for the Integrated Report. The bulk of the stream network presented in the DEQ\_Streams feature class is from the 1:100K scale data originating from StreamNet100K, described below. Attributes including Longitude/Latitude Identifier (LLID) and water body name from the 1:100K dataset were used if available. When water bodies were not represented in the 1:100K dataset, line work from the USGS 1:24K stream layer, Pacific Northwest 24K (from Pacific Northwest Hydrography), NHD High, and NHD Med were added to the 1:100K dataset as needed. In addition, some line work was modified to correct line work gaps, inaccuracies, or errors in the feature class. For example, DEQ added a "stream" line to represent the Pacific Ocean coast line and calculated a latitude/longitude identifier (LLID), river mile minimum and river mile maximum end values. For DEQ assessment purposes, the Pacific Ocean river mile start (RM 0) was set at the Oregon/Washington border with river miles increasing from north to south to a river mile maximum (RM 357.97) at the Oregon/California border. Oregon coastal recreation beaches were assigned river miles representing start and end points for segments along the Pacific Ocean line that are used for the Integrated Report. Contact DEQ to obtain the dataset.

**Feature Class DEQ\_Streams**

The DEQ\_Streams feature class is based on the following sources:

* **StreamNet 100K -** U.S. Geological Survey (USGS) in Portland, in cooperation with Bonneville Power Administration, the Northwest Power Planning Council, and other Federal and state agencies and NW Indian Tribes 1:100,000-scale River Reach data layer, 2001
* **Modified StreamNet 100K -** OR DEQ modifications to base data
* **PNW Hydrography 24K** - Extracted from the Pacific Northwest (Oregon & Washington) Hydrography Framework, Date: 20061030
* **Modified PNW 24K** - OR DEQ modifications to base data
* **NHD High** - High resolution, 1:24,000/1:12,000 scale, USGS National Hydrography Dataset, 2007. USGS Earth Science Information Center
* **NHD Med** - Medium resolution, 1:100,000 scale, USGS National Hydrography Dataset, 2004, USGS Earth Science Information Center. Medium resolution NHD is based on the content of the U.S. Geological Survey 1:100,000-scale Digital Line Graph (DLG) hydrography data, integrated with reach-related information from the U.S. Environmental Protection Agency Reach File Version 3.0 (RF3).

U.S. Geological Survey in cooperation with the U.S. Environmental Protection Agency, 1999, National Hydrography Dataset (NHD) - Medium-resolution: U.S. Geological Survey, Reston, Virginia.

* **DEQ Digitized** - Gaps in stream line work filled by hand digitizing

**Feature Class DEQ\_Lakes**

DEQ prepared the **DEQ\_Lakes** feature class for water bodies and added additional water bodies as needed to the StreamNet\_Lake data. DEQLakes is based on the following sources:

* **StreamNet 100K -** U.S. Geological Survey (USGS) in Portland, in cooperation with Bonneville Power Administration, the Northwest Power Planning Council, and other Federal and state agencies and NW Indian Tribes 1:100,000-scale River Reach data layer, 2001. Lake features are mainly from the “lakes\_stwide” shape file.
* **PNW\_Waterbody –** The Pacific Northwest Waterbody polygon data was used to supplement the StreamNet lakes. If a lake polygon was not present in the existing lakes data set the lake was added from the PNW 24K data.
* **DEQ Digitized –** In cases where the lake was not found in either of the above datasets, a representative polygon was hand digitized using the USGS 1:24,000 topographic maps as a template.
* **StreamNet 100K modified** - In rare cases a lake polygon was modified to represent the area between dams with water quality monitoring information.

**Feature Class Coastal\_Beaches**

DEQ obtained information from the Oregon Public Health Authority on the names and locations of Oregon coastal recreation beaches used in EPA’s Beach Advisory and Closing On-Line Notification (BEACON) system for reporting pollution incidents for coastal beaches. The georeferenced locations are based on the latitude and longitudes of the beach starting and ending points and EPA Reach Address Database (RAD). The beach locations are projected onto a "stream" line to represent the Pacific Ocean coast line. For DEQ assessment purposes, the Pacific Ocean river mile start (RM 0) was set at the Oregon/Washington border with river miles increasing from north to south to a river mile maximum (RM 357.97) at the Oregon/California border. Oregon coastal recreation beaches were assigned river miles representing start and end points for segments along the Pacific Ocean line that are used for the Integrated Report.

**Feature Class OR\_Streams\_WaterQuality\_2012**

The feature class OR\_Streams\_WaterQuality\_2012 provides spatial information for rivers and streams along with water quality information for the stream or stream segment. Each record in this feature class represents a combination of water body information (name, Longitude/Latitude Identifier (LLID), river mile start and end for the segment) and pollutant assessment information (pollutant name, season assessed, status or condition of the water relative to the pollutant and water quality standard, etc.). There may be multiple records for the same stream representing different pollutants, seasons, or segments of the stream. Both spatial information and assessment information are provided in the attribute table for this feature class. Reference tables in this geodatabase provide lists for the text and numeric codes that populate the assessment information fields. In previous assessments, georeferencing information may not have been available for a water body and placeholder LLID values were assigned (example: 1111111111101 or 2222222222003). The attribute table contains the full set of records including those with placeholder LLIDs. Lakes may be identified by both a stream LLID for a through going stream and a lake LLID and are also included in this attribute table for completeness.

Subsets of the stream feature class with the water quality status of Attaining, Insufficient Data, and Water Quality Limited are included in this geodatabase.

**Feature Class OR\_Lakes\_WaterQuality\_2012**

The feature class OR\_Lakes\_WaterQuality\_2012 provides spatial information for the polygon shape of an assessed lake, pond, or reservoir along with water quality information for the water body. Each record in this feature class represents a combination of water body information (name, Longitude/Latitude Identifier (LLID)) and pollutant assessment information (pollutant name, season assessed, status or condition of the water relative to the pollutant and water quality standard, etc.). There may be multiple records for the same lake representing different pollutants, seasons, or segments of the stream. Each water body has a unique 13 digit Longitude/Latitude Identifier (Field name: LLID\_Lake) representing the centroid of the water body polygon that is included in the water quality assessment record. Lakes with through going streams are represented with both the stream miles and stream LLID and the lake LLID concatenated as Stream LLID/Lake LLID

Subsets of the lake feature class with the water quality assessment status of Attaining, Insufficient Data, and Water Quality Limited are included in this geodatabase.

**Geodatabase tables**

Tables of supporting reference information are included in the 2012 Integrated Report Assessment geodatabase. These tables provide lists of water quality assessment information text and numeric codes that are used in the attribute tables.

|  |  |  |  |
| --- | --- | --- | --- |
| Reference Table | Reference Table Field Label | Description | Attribute Field Label |
| Action | Action  Action\_ID | Reference table with actions taken in a specific cycle of Water Quality Assessment Integrated Reporting. This includes adding new records to the assessment report for water quality conditions in specific waters, or changing the water quality condition reporting status for the record. | Action  Action\_ID |
| AffectedUse | AffectedUses  AffectedUse\_ID | Reference table of beneficial uses protected by water quality standards. The beneficial use may be impaired by the presence of a pollutant or conditions in the water. A pollutant may potentially affect multiple beneficial uses. Also, beneficial uses may be impaired because of negative impacts from multiple pollutants or water conditions. | AffectedUses  (Multiple reference texts in one field)  (No numeric ID field) |
| Narrative Criteria | NarrativeText  NarrativeCriteria\_ID | Summary table of narrative water quality standards used for the water quality assessment. Narrative criteria are set out in Oregon Administrative Rules Chapter 340 Division 41. | Criteria  Criteria\_ID  (May refer to either Narrative or Numeric Criteria) |
| Numeric Criteria | Criteria  NumericCriteria\_ID | Summary table of numeric water quality standards used for the water quality assessment. Numeric criteria for pollutants are set out in Oregon Administrative Rules Chapter 340 Division 41 or federal rules if applicable. (Note: VALID=0 for Criteria revised or replaced, no longer effective; VALID=1 for Current and effective criteria. CritRevDate=Date when criteria were revised or replaced.) | Criteria  Criteria\_ID  (May refer to either Narrative or Numeric Criteria) |
| Pollutant | Pollutant  Pollut\_ID | Reference table with pollutants or conditions evaluated for the water quality assessment. | Pollutant  Pollutant\_ID |
| Season | Season  Season\_ID | Reference table with time periods when specific water quality criteria apply or when data are grouped to assess seasonal water quality conditions. | Season  Season\_ID |
| Status | Status  Status\_ID | Reference table with the water quality condition categories. A status category (Category 1 through 5) for the water quality condition is assigned to each record based on evaluating water quality information using DEQ’s assessment methodology decision rules. | Status  Status\_ID |

**Contact**

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