

Pilot Project: Update Stream Classifications in Coeur d'Alene Lake Area (Hydrologic Unit 17010303)

Introduction

The NHD uses the FCODE attribute to classify River/Stream NHD Flowlines as perennial, intermittent or ephemeral. When the NHD was developed, cartographers classified streams either as perennial or intermittent based on available aerial photography at the time the map was compiled. Where available, these data were verified by field checks. However, some areas are not classified and, by default, all these streams are classified as perennial. Therefore, stream classification in Idaho on the statewide or regional scale is not consistent and is difficult to use for applications. The Idaho Department of Water Resources (IDWR) would like to explore updating stream classification on selected hydrologic units. We propose to use subbasin 17010303 as a pilot area since all streams in this subbasin are classified as perennial even though many are intermittent.

Al Rea of the USGS has developed the Idaho Perennial Streams Model Data Series that is almost ready for publication and has focused on the classification of perennial and intermittent streams. Idaho Administrative Code defines an intermittent stream as one having a 7-day, 2-year low flow (7Q2) less than 0.1 cfs. Al Rea used regression equations in conjunction with a GIS technique known as weighted flow accumulation that allows for estimation of 7Q2 streamflow along a stream. This process creates attributed synthetic hydrography based on 10M National Elevation Dataset (NED) data.

The attributes of the synthetic hydrography have been transferred to the 1:100,000 scale National Hydrography Dataset, but have not been associated with the 1:24,000 scale (NHD). We propose to use this dataset to update the stream classification in the NHD within 17010303, which were omitted in the original production NHD by the USGS. Field verification will be used to check this method used to classify the streams and a brief report made that will be inserted into the metadata. Field verification information will be supplied by the Coeur d'Alene tribe, Forest Service and other agencies with land in subbasin 17010303. Additionally if funding permits, other 7.5-minute quadrangles in the state that are incorrectly classified as a result of NHD production errors will be similarly corrected when feasible. This funding is not intended for a widespread general reclassification of streams in the state.

While the USGS regression equations classification does not distinguish between ephemeral and intermittent streams, we may receive field data that shows ephemeral streams, and we will retain that information and code the NHD appropriately.

Benefits to the USGS and NHD Community

- The Department of Environmental Quality is already using NHD and would benefit from improved stream classifications.
- Improved stream classification data which may attract new NHD users that are currently do not incorporate the NHD into their business processes.
- This project will assess the methods and feasibility of improving stream classifications. Other States will be able to use this study to assess the feasibility and resources required to update stream classification in their jurisdictions.
- An updated stream classification for hydrologic unit 17010303.
- The project will set the stage for maintenance of stream classifications using standardized procedures and appropriate documentation of changes via metadata. For example, field investigations may determine a stream segment is perennial/intermittent, and this information can be entered into NHD along with a supporting metadata record. This would provide a permanent record of edits and the reasons behind them.

Proposed work

- The Idaho Department of Water Resources (IDWR) will update the stream classification in 17010303 and submit those updates for inclusion into the NHD. Other areas will be considered if funding is available.
- A report documenting the stream classification update process

Deliverables

- IDWR will write a report documenting
 - Procedures used to update stream classification
 - Challenges that are encountered and suggested solution to potential problems
 - An estimate on the resources required to update stream classification in other areas within Idaho.
 - The differences of the classification as it currently exists in the NHD and the classification after the stream classification update