

CDI Project: Standardizing Stream-Landscape Summaries

This FY2016 Center of Data Integration (CDI) project formed a collaborative effort between the EPA, Michigan State University, and the USGS to develop a standard workflow to efficiently summarize landscape information to local and network catchments, while considering needs of potential data users. This site is intended to document and organize the intent, progress, and products resulting from this effort. For additional information or to become involved contact Daniel Wieferrich at dwieferrich@usgs.gov.

Summary:

As technology advances information about the landscapes around us is becoming more readily documented and made available in digital formats. Although ample data are currently available, the raw forms of these data are not always useful for scientific research, but rather the information needs to be processed into appropriate spatial units for analyses. While studying streams, research suggests a stream and its condition can be characterized by landscape information (e.g. percent of the land with urban development vs. natural forest) by accounting for the landscape draining to a stream segment (local catchment) and the landscape upstream of the stream segment (network catchment). Currently three national efforts have independently produced similar stream summarizations to local and network catchments which is inefficient, duplicative, and may be producing inconsistent results. We will form a collaborative effort to develop a common workflow that efficiently summarizes information to local and network catchments, while taking into consideration needs of data users. We will test the summarization using a commonly used land use dataset and publish the developed software and processed dataset for public consumption. A plan will be developed to process other needed data summaries through time.

Expected Products:

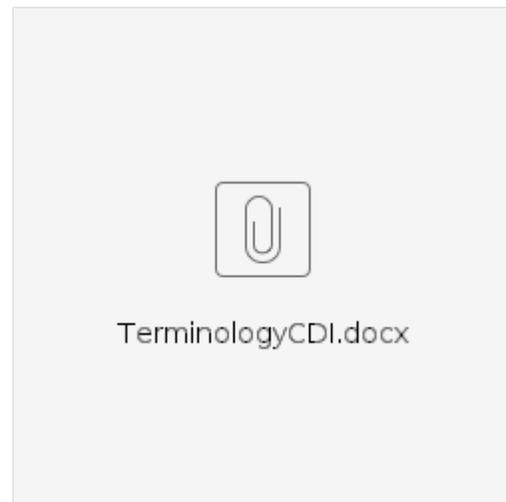
1. USGS-EPA release of a scientific workflow (code) documenting the standardized method of attribution (local catchment summaries) and aggregation (upstream network catchment summaries) of landscape information to NHDPlus catchments. Feedback from collaborating partners will be considered in the development of the workflow. It will focus current efforts on the commonly used NHDPlusV2.1 (1:100,000) dataset yet will be developed in consideration of transferability to future stream networks such as the NHD High Resolution Dataset Plus (1:24,000).
2. List of national datasets where local and network summaries are needed in ecological and hydrologic modeling efforts of the USGS, EPA, USFWS, and other collaborating agencies.
3. USGS-EPA data release of complete local and up-stream network summaries, documented with FGDC metadata for the pilot dataset of the National Land Cover Dataset (2011).
4. Proposed work plan for collaborative efforts of summarizing and documenting (e.g. metadata development) the list of variables identified in product #2 along with variables processed in previous efforts, and for updating / processing newly developed datasets (e.g. updated NLCD). This plan will include a list of variables along with a timeline for processing the information.

More detailed information can be found in the following documents

Funded Proposal:



Project Terminology:



Additional Reference Information:

CDI ScienceBase Page: <https://www.sciencebase.gov/catalog/item/56d88158e4b015c306f6d001>

Final CDI Project Repo, this will be available upon completion of the workflow : <https://my.usgs.gov/bitbucket/projects/CDI/repos/stream-summarization/browse>

**Note the child pages of this site that help organize and document progress of this effort.*