Hydropower Infrastructure- LAkes, Reservoirs, and Rivers (HILARRI)

Dataset Overview

Dataset Title: HILARRI

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Summary: HILARRI is a database of links between major datasets of operational hydropower dams and powerplants (National Inventory of Dams (2021), Global Reservoir and Dam Database (GRanD v1.3), Existing Hydropower Assets (EHA 2022), and inland water bodies (NHDPlusV2 river network, NHD water bodies, NHD Watershed Boundary Dataset, HydroLAKES, and LAGOS-US).

Keywords: Existing Assets, Hydrography

Acknowledgments: The dataset was produced with funding from the US Department of Energy Water Power Technology Office.

Related Publication: NA

Related Datasets: Existing Hydropower Assets (DOI: 10.21951/EHA_FY2022/1865282)

Dataset Characteristics

Spatial Resolution: point locations describing approximate locations of hydropower dams and power plants

Projection Information: EPSG 4269

Temporal Resolution: N/A

Temporal Coverage: up to April 2022 (last published Existing Hydropower Assets dataset)

File Format: .csv

File Naming Convention:

- HILARRI_vX (where X is the release version) is the full dataset with all links for infrastructure and hydrography features
- HILARRI_vX_SubsetHydropowerDams is a table limited to just the unique hydropower dams. No additional hydrography information is included.
- HILARRI_vX_SubsetHydropowerDams_Plants is a table limited to just unique pairs between hydropower dams and plants. No additional hydrography information is included.

File Descriptions: See HILARRI_v2_Field_Descriptions.csv and HILARRI_v2_UserNotes.docx

Data Dictionary: See HILARRI_v2_Field_Descriptions.csv and HILARRI_v2_Acronyms.csv

Application & Derivation

Connections between major hydropower infrastructure and hydrographic data are critical for conducting large-scale

analysis of hydropower infrastructure and their associated natural and engineered water systems.

Quality Assessment

Estimate of Uncertainty: The HILARRI dataset also incorporates information from additional datasets to facilitate more effective and accurate analysis. For example, dams were checked against the most recent American Rivers Dam Removal Database to identify and remove facilities that no longer exist. Additionally, dams that are listed multiple times in the NID are identified and flagged to avoid double-counting when analyzing and summarizing information.

Other quality flags include certainty of operational hydropower (i.e., if one or more datasets indicates hydropower at a particular location), and whether an associated water body is accurate or composed of multiple polygons. These additional data flags will increase confidence in data usage for individual to large-scale analyses.

Data Acquisition, Materials & Methods

Data were processed and compiled using QGISv3.22.14

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SUPPLEMENTAL FILES

HILARRI_Acronyms.csv

HILARRI_v2_Field_Descriptions.csv