Developing Metadata for the DRInet Repository

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DRInet is a regional-scale drought information network. It seeks to advance the state of collection and synthesis of local and regional scale data in multiple domains that contribute to the national drought information needs of stakeholders.

Use Cases & Functionality of DRInet

- Assessing droughts & their impacts
- Determining drought abatement strategies
- Improve forecasting and monitoring of drought indicators
- Linkages between casual factors of drought
- Synthesizing information for decision making
- Assessing variability and context in drought triggers
- Assessing causality and relation between drought and regional air & water quality
- Impact of drought on plant disease
- Economic (Impact) Assessment
- Drought education

Role of Metadata in DRInet

- Discovery – to enable searching and browsing of data within DRInet
- Description – to enable the user to understand the nature, purpose and potential uses of the data.
- Define Relationships between data set – to identify how a particular data set fits into DRInet as a whole.
- Dissemination – to enable others to find the data from outside of the DRInet portal. Metadata should be made harvestable by search engines, union catalogs and other external agencies as appropriate.

Sample DIF Metadata Record for DRInet Data

- **Data Center Name** - <Long_Name>Drought Research Initiative Network (DRInet)</Long_Name>  <Data_Center_URL>https://drinet.hubzero.org/</Data_Center_URL>  <Data_Center_Name> <Long_Name>Drought Research Initiative Network (DRInet)</Long_Name>  <Data_Center_URL>https://drinet.hubzero.org/</Data_Center_URL>  

- **Abstract** - YSI Multi-parameter water quality radiosonde (YSI 600 series system) was installed on the left bank of the Massie Creek, OH by the bridge on Wilberforce-Citizen Road around January 2007. The same location (Lat 39°43'22", Long -83°52'58") also has a continuous USGS stream flow monitoring station (Hydrologic Unit 05090202) 1.7 mi upstream from the Clark Run, a designated tributary to the creek. The radiosonde water quality sensor has multiple probes to simultaneously measure water level, temperature, pH, dissolved oxygen, turbidity, and conductivity of the stream in real time. Water quality parameters are remotely monitored using radio-telemetry and processed using a Nexsens iChart 6 software. The sampling frequency is 30 minutes. The base station also receives signals from a weather station. The WXT 520 weather station provides a complete sensor interface and data collection platform for simultaneously measuring wind speed and direction, precipitation, barometric pressure, temperature, and relative humidity. 

- **Purpose** - Hydrological data received from the weather station, in stream water quality radiosonde, and the USGS stream flow monitoring station is being used in our work to improve management and environmental engineering curricula to teach the principles of watershed hydrology using Massie Creek watershed as an example. Studies majoring in Water Resources Management program have been using the data to study water quality on the Massie creek and calculate water quality indices at different times of the year as part of the requirements for passing "WRM 310: Streams and Lakes" course. This data may also be used in a large scale national study on development of drought triggers for agricultural applications. The study will be part of a USDA research project that has recently been awarded to Purdue University through its Agriculture and Food Research Initiative (AFRI) Competitive Grants Program.

- **Location** - <Latitude>39°43'22"</Latitude> <Longitude>-83°52'58"</Longitude> <Location_Subregion2>Ohio</Location_Subregion2>  <Location_Subregion3>Greene</Location_Subregion3>  

- **Temporal Coverage** - <Start_Date>2010/01/01</Start_Date> <Stop_Date>2010/12/31</Stop_Date>  

- **Spatial Coverage** - <Latitude>39°43'22"</Latitude> <Longitude>-83°52'58"</Longitude>  

- **Parameters** - <Parameter_Level_1>Water Level</Parameter_Level_1> <Parameter_Level_2>Water Temperature</Parameter_Level_2> <Parameter_Level_3>Water pH</Parameter_Level_3>  

- **Originating Center** - Central State University, Wilberforce, OH  

- **DIF Creation & Revision** -<DIF_Creation_Date>2011-02-11</DIF_Creation_Date>  <Last_DIF_Revision_Date>2011-02-11</Last_DIF_Revision_Date>  

- **Data Set Citation** - <Dataset_Publisher>driNET</Dataset_Publisher> <Dataset_Release_Place>Purdue University, West Lafayette, IN</Dataset_Release_Place>  <Dataset_Release_Date>2010/02/11</Dataset_Release_Date>  <Dataset_Series_Name>Real time data collection of water quality parameters for the Massie Creek, Ohio</Dataset_Series_Name>  <Dataset_Title>Real time data collection of water quality parameters for the Massie Creek, Ohio</Dataset_Title>  <Dataset_Release_Date>2010/02/11</Dataset_Release_Date>  <Dataset_Release_Date>2010/02/11</Dataset_Release_Date>  

- **Personnel** - <Role>TECHNICAL CONTACT</Role>  <First_Name>Subramania</First_Name>  <Last_Name>Sritharan</Last_Name>  

- **Data Set Citation** - <Dataset_Citation> <Originating_Center>Central State University, Wilberforce, OH</Originating_Center> <Data_Set_Citation> <Sensor_Name>YSI Multi-parameter water quality radiosonde (YSI 600 series system)</Sensor_Name>  

- **Metadata Name** - CEOS IDN DIF - <Metadata_Name>CEOS IDN DIF</Metadata_Name>  <Metadata_Version>VERSION 9.8.2</Metadata_Version>  

- **Sensor Name** - <long_name>YSI Multi-parameter water quality radiosonde (YSI 600 series system)</long_name>  

- **Location** - The named location where the data were generated.

- **Entry ID** - The unique document identifier of the metadata record.

- **Metadata Name** - The name and version of the standard used (DIF).

- **Coverage** - Information about the temporal and spatial attributes of the data.

- **Data Center** - The agency responsible for distributing the data (DRInet).

- **Parameters** - A hierarchical representation of keywords that describe the data set.

- **Data Set Citation** - Allows the data set producer to be cited properly.

- **Personnel** - Who to contact with questions about the data or its handling in the repository.

- **ISO Topic** - A thematic classification using a controlled vocabulary.

- **Intended Audiences** - Climatologists, Hydrologists, Farmers, County Extension Educators, Economists, Policy Makers, Town Managers, Agriculture Experts, Economists, Policy Makers.

- **Summary** - A description of the data set that include its history, development purpose, and use.

- **Data Center** - <Data_Center_Name> <Long_Name>Drought Research Initiative Network (DRInet)</Long_Name>  <Data_Center_URL>https://drinet.hubzero.org/</Data_Center_URL>  

- **Last DIF_Revision_Date** - <Last_DIF_Revision_Date>2011-02-11</Last_DIF_Revision_Date>  

- **Originating Center** - The agency that originally generated the data.

- **DIF Creation & Revision** - Tracking information about the metadata record.