NOAA Grant Update:
Enhancing Data Management Capacity among the CRITFC, its Four Member Tribes, and the WCOA

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ITMD Annual Meeting

February 13, 2024

Grant Summary

Objective: Develop capacity for the CRITFC and its four member tribes to participate in regional data sharing and upgrade existing data management infrastructure.

Tribal Engagement: Increase tribal engagement with West Coast Ocean Alliance data activities.
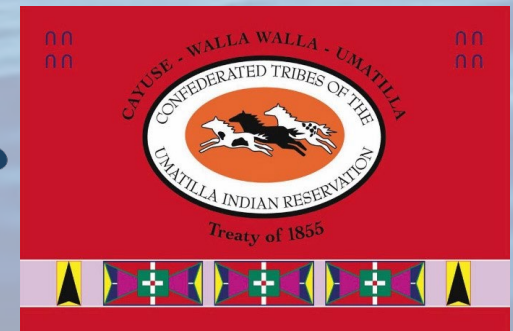
Infrastructure Improvement: Enhance centralized data management systems (CDMS, STAR-IMS).

Expansion of Tribal Datasets: Add additional tribal datasets to the existing repositories.

Capacity Building: facilitate tribal data sharing with regional repositories, such as WCOA data portal.

Goal 1: Enable CRITFC member tribes and the Coastal Margin Observation & Prediction (CMOP) program to engage with WCOA data priorities

Task 1.1   Develop tribal engagement in the WCOA

- Attended WCOA meetings and reported back to ITMD and CRITFC departments:
    - *WCOA member meetings*
    - *Tribal Caucus meetings*
    - *WCODP meetings*
    - *Annual Summits*
    - *Offshore wind summit (Gradoville, planned)*
- Invited CRITFC member tribes to engage with WCO Tribal Caucus
    - *Invitation letters sent to CRITFC member tribes*
    - *Elaine Harvey (YN) regularly attends meetings*

West Coast
Ocean Tribal Caucus

Goal 1: Enable CRITFC member tribes and the Coastal Margin Observation & Prediction (CMOP) program to engage with WCOA data priorities

Task 1.2 Assessment of data gaps and integration of ocean observation and model data with tribal data (led by CMOP scientists)

- *WCODP does not currently include CMOP observatory data (or any data from NANOOS)*

- *CMOP provides all historical data through our website*

- *Working with WCODP team to daylight CMOP data within the data portal*
  - Currently waiting for them to provide metadata template
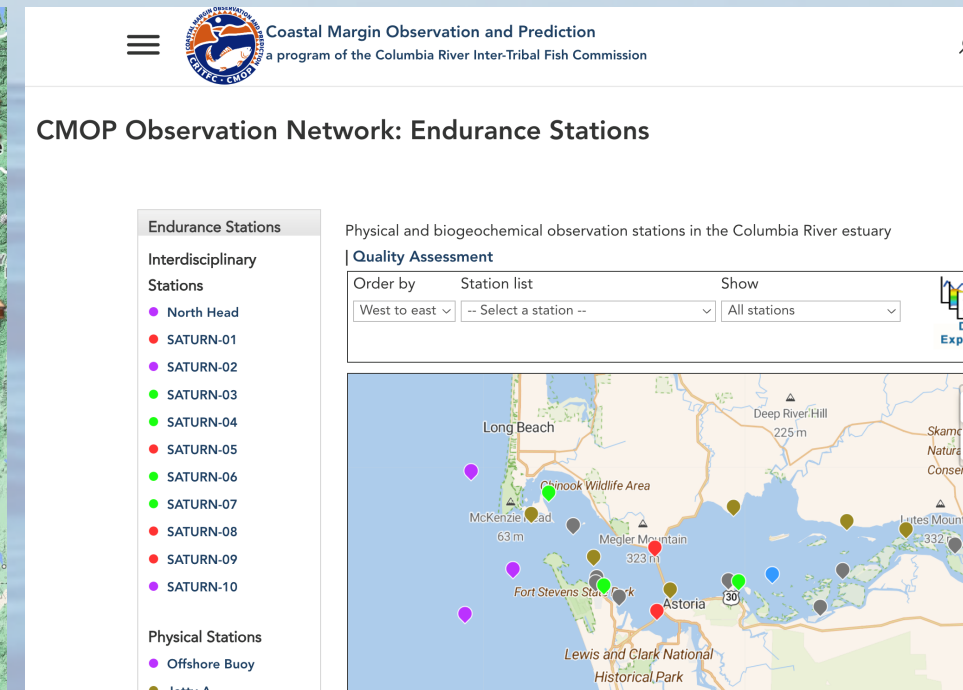
Goal 2: Improve metadata capability in tribal data systems

*Task 2.1   Design metadata schema and fields for tribal data systems*

- Drafted metadata status report for CRITFC's CDMS to assess status quo:
  - *Inconsistent coverage*
  - *Poorly organized*
  - *Accessibility issues*
  - *No export/download*
  - *Validation*
  - *Not searchable*
- Proposed a collaborative process to improve metadata (NOAA Interim Grant Report #2 - Appendix A)
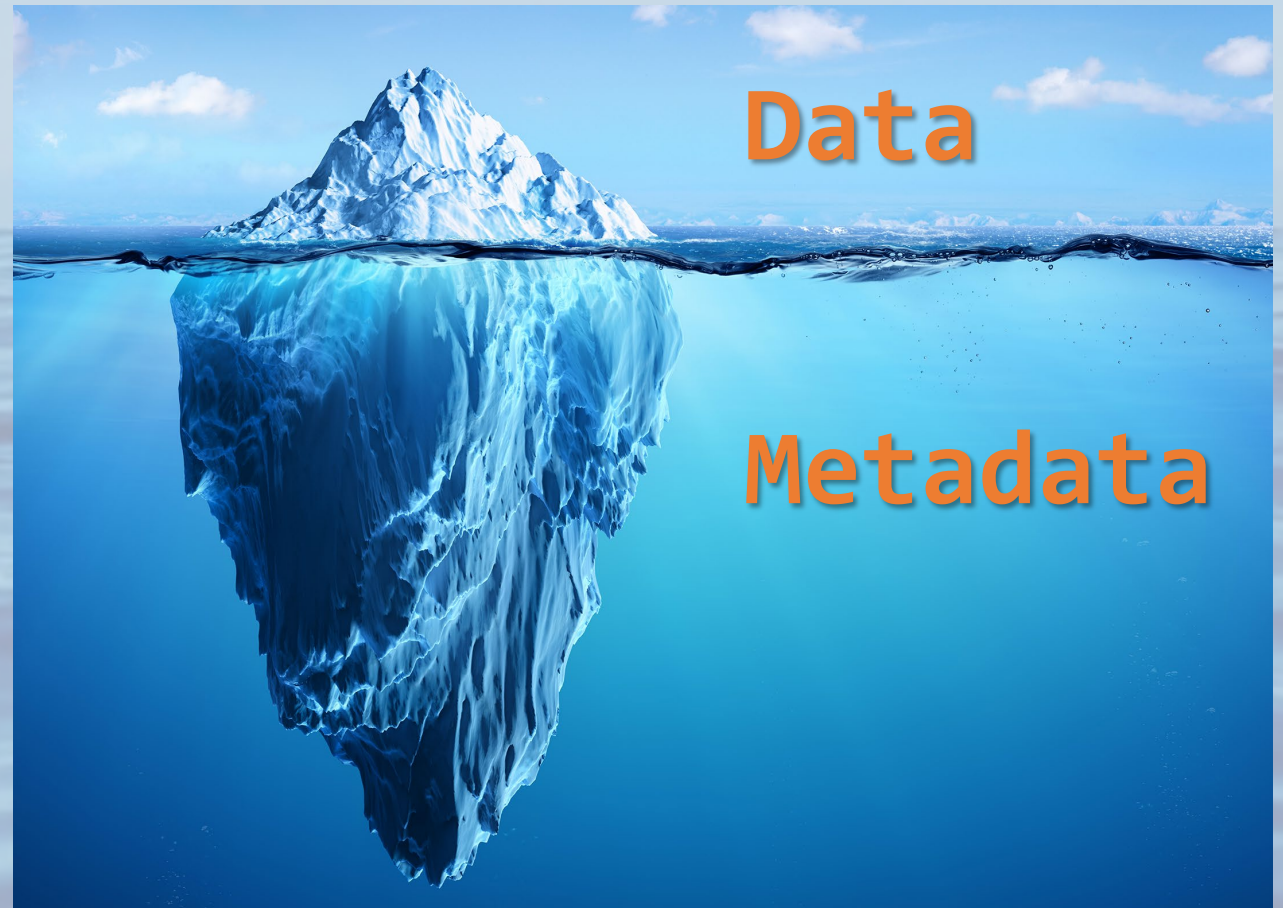
Data

Metadata

Goal 2: Improve metadata capability in tribal data systems

*Task 2.2 and 2.3 Test and Incorporate metadata schema and attributes*

- Limited scope for planning and management, not technical coding implementation

- Established a metadata workgroup to coordinate improvement planning

- Developed work plan for programming vendor Innovate!, Inc., supported by a BPA grant
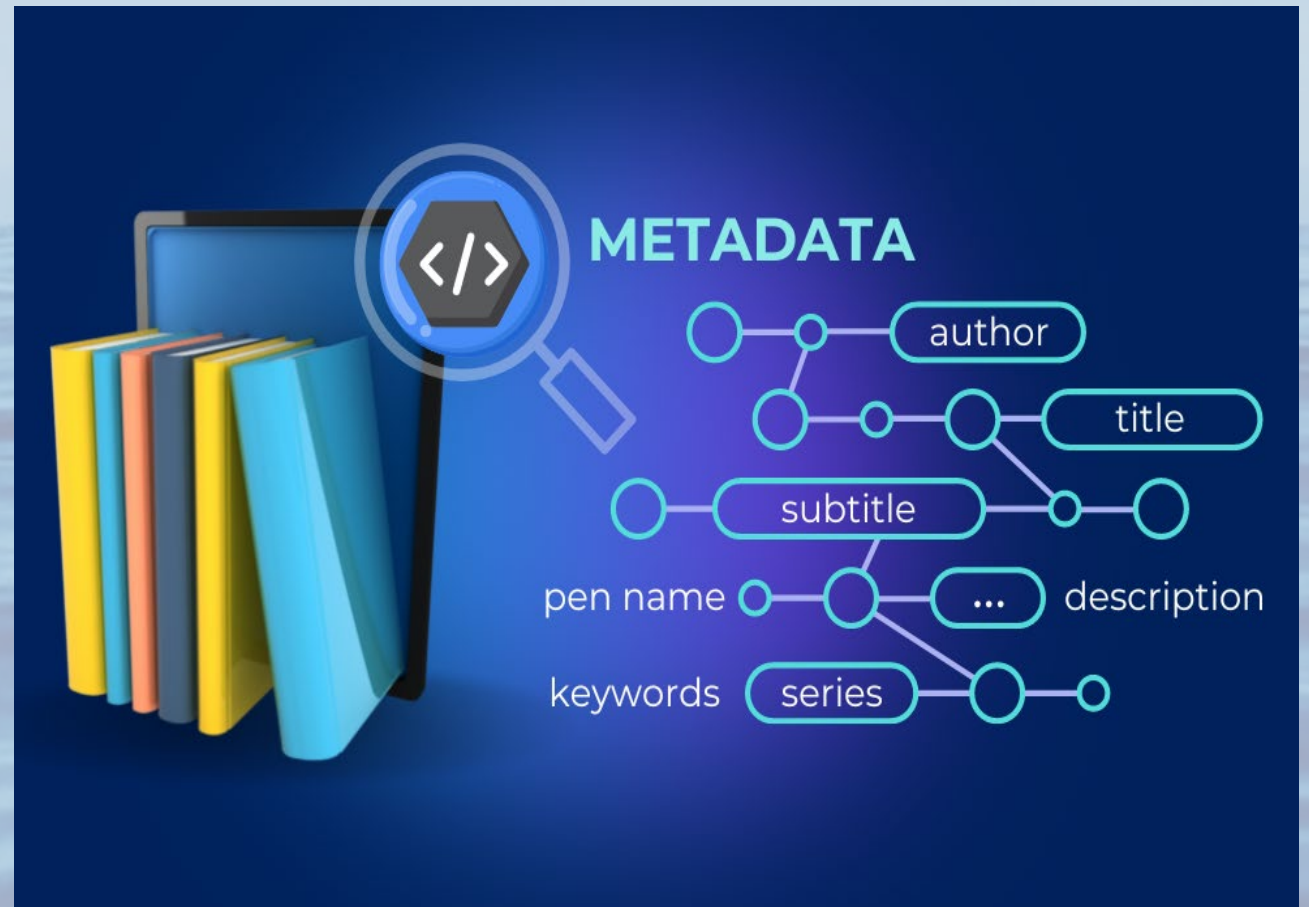
Goal 3: Improve the CDMS and STAR-IMS to increase ability and capacity to engage with regional data management entities, including the WCOA data portal

Task 3.1   Database or web programmer to improve centralized data management systems

- Consolidated tribalCDMS builds
  - *GitHub version control*
- Upgraded CRITFC and WS CDMS v2.3 -> v3
  - *Improved performance and security*
  - *Location table improvements*
  - *Bug fixes*
- Helpdesk functions and data coordinator roles
- YN hired Vaughan Gilmore on 6/5/23
  - *Data integration into STAR-IMS*
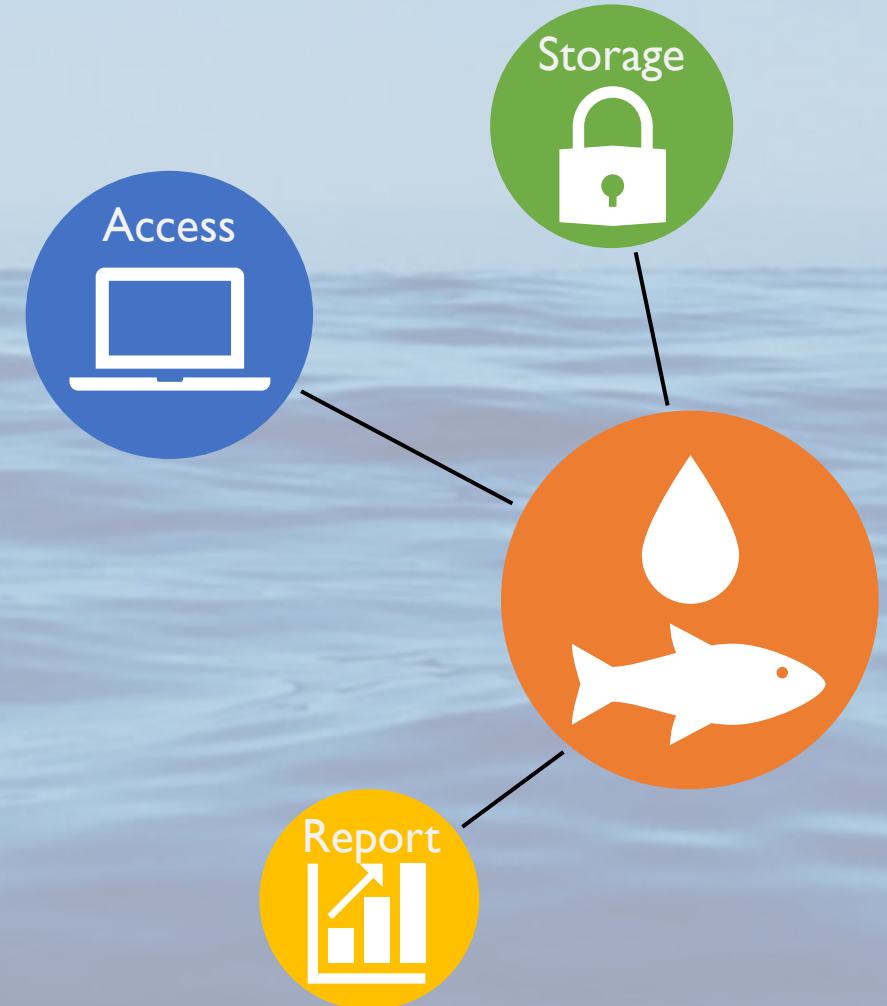
Access

Storage

Report

Goal 3: Improve the CDMS and STAR-IMS to increase ability and capacity to engage with regional data management entities, including the WCOA data portal

Task 3.2 Better User Interface (UI); APIs streamlined, maintained; fields for TEK items & links to data sharing agreements. Strategy to identify feature needs

- Strategy:
  - *Bi-weekly group meetings*
  - *Incorporation of [Pivotal tracker](#)*
- Feature needs:
  - *Upgrade/testing automation (Jenkins)*
  - *Handling of large datasets*
  - *Data importer enhancements*
- CDMS web UI improvements
  - *Revamp with mockup illustrations*

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Next Steps

- Further engagement among the WCOA, CRITFC and its member tribes.
- Establish a metadata template to daylight CMOP data within the WCODP.
- Metadata improvements: content, functions, and infrastructure.
- User experience improvements: permissions, user-interface.
- Data sharing, dataset citations, APIs for dataflow.

Tribal CDMS

STORIES | ANALYTICS | MEMBERS | INTEGRATIONS | MORE

WHAT'S NEW | HELP | JAMMIN

My work — 14
Current iteration
Backlog
Icebox
Blocked — 0
Done
Epics
Labels
Project history

Display: Normal

Done

Displaying last 5 iterations. Show all.

0 points	22 • 8 - 14 Jan	100%	
0 points	23 • 15 - 21 Jan	100%	
11 points	24 • 22 - 28 Jan	100%	

CTUIR: Remove nav link for Permits (GC)
core repo, ctuir, gc

CTUIR: Remove link on Tools -> GIS Website (GC)
core repo, ctuir, gc

CTUIR: Remove link on Tools -> ArcGIS Online (GC)
core repo, ctuir, gc

Save error after copy/paste ag-grid into new row Priority - Medium GIT-#50 (CW, CC)
aggrid, edit, npt, save

Develop Core Repo on GitHub (GC, CC, SS)
core repo, ctuir, github

Add a field select box not populating in "Edit Project Dataset" menu GIT-#54 (CW, CC)
dataset, dataset creator

CTUIR sanitizing Tribal Repo (GC, SS)

0 points	25 • 29 Jan - 4 Feb	100%

Exporter Issues: select-field box, Location filter, Grid Row Counter GIT-#47 (CW, CC)
aggrid, npt

Data entry page Save & Close button bug GIT-#38 (JY, CC)
large data, save

0 points	26 • 5 - 11 Feb	100%

Consolidate & Compare CTUIR and CRITFC CDMS-GIT-#68 (DS, JY)
ctuir en

Set up Repo w/in CRITFC to fork CTUIR Public 3.0 (FE/BE) GIT-#71 (JY)
ctuir en

CDMS 2.2. Importer Issues-GIT#32 (CC)
critfc, delete?, import

Current Iteration   3   + Add Story

0 of 14 points	27 • 12 - 18 Feb	100%	

Location tab-Admin/Edit privileges to add/edit GIT-#82 (MB)   **Finish**
locations, npt, permissions

Query/export page row count number doesn't update

ID #186403711   **Collapse**

STATE   **Finish**   Started ▾

REVIEWS   + add review

STORY TYPE   🐞 Bug ▾

POINTS   Unestimated ▾

REQUESTER   JY Jammin ▾

OWNERS   MB mbergamini +

FOLLOW THIS STORY   (2 followers)

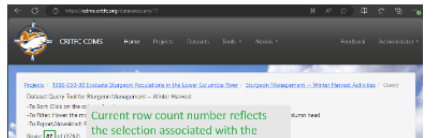Updated: 11 Dec 2023, 06:29am

BLOCKERS

+ Add blocker or impediment

DESCRIPTION

Expected Behavior

When executing a filter criterion on the query/export page, the row count should update to reflect the number of rows matching the applied filter, not the total row count for the dataset.

Screenshot/Recording:

Backlog   + Add Story

3 points	28 • 19 - 25 Feb	100%

Update Libraries-Update aging libraries within the CDMS system
code libraries, ctuir en

Excel (.xlsx,.csv) file importer error - datatype assignments Priority - High GIT- #44   **Start**
controltype, ctuir en, importer

Error: (would be fixed with ticket #185022418) Data import that includes "QA Status"- GIT-#43 (CW)   **Start**
ctuir en, import, row qa

QA Status-Decouple from the DatasetQAStatus/DatasetQASt atus1 tables and place them in the dataset attributes themselves
ctuir en, dataset qa

Export from AG-Grid that includes a look up the export reflects the Id number rather than the text (ie Location, Waterbody, instrument, qa)   **Start**
aggrid, ctuir en, export

3 points	29 • 26 Feb - 3 Mar	100%

User permissions management tool (MB, CW)   **Start**
ctuir en, permissions, user group

Open API Data Catalog   **Start**

NTP CDMS: Customization - Project Summary Page Priority - High GIT-#65 (CW)   **Start**
project

Location Status-filtering and sorting GIT-#15   **Start**
filter, locations, sort

Ability to query entire datastore across projects and same location in different datastores GIT-#75 (CW)   **Start**
ctuir en, query

Newly created instrument not   **Start**

Icebox   + Add Story

Implement frontend end-to-end testing in Jenkins (KS)   **Start**
e2e-test, jenkins, testing

CTUIR En-CTUIR wordpress website to supply public access to water temperature and water quality data
ctuir en, download, query, wordpress website

Data to EPA-Expansion of WQX through development of critical internal tribal data systems
automated flow, ctuir en, wqx

Metadata-Develop Metadata user interface to capture information and allow documentation to flow with data when exported
ctuir en, metadata

Instruments-Ability to import a large list of instruments into the table at once GIT-#78 (JY)
import, insturment

API - automated data transfer improvement GIT-#81   **Start**

Ability to QA/QC and edit in web UI, view/edit data in a query grid GIT-#80   **Start**
aggrid, editing, qa/qc, query

Group Permissions-Success/Failed response issues #57 (JY)   **Start**
permissions

Ability to import data to update existing records or insert new records for activities High Priority GIT-#77 (JY)   **Start**
import

Multi child to single parent table architecture GIT-#76 (JY)   **Start**
multi table, parent/child id, single table

Copy + Paste over existing row fails to overwrite previous data GIT-#67 (JY)

Example showing minimum universal metadata for data citations

Element Name	Obligation	Explanation or example
Title	Mandatory	Project title
Purpose	Mandatory	Project goals
Dataset type upload	Mandatory	Project data format (csv, tiles, images, mixed, etc.)
Dataset(s) title	Mandatory	Will link to both DOI and citation
Dataset purpose	Dependent	Option to choose project purpose as a drop-down choice
Date latest dataset upload	Mandatory	
QA/QC status	Mandatory	Drop-down pick lists
TEK Fields in dataset	Mandatory	First foods; Cultural Significance, e.g.
Dataset collection dates	Mandatory	xx/xx – xx/xx or xx/xx – present(ongoing)
Dataset location(s)	Mandatory	text description, or UTM extents
Organization data producer	Mandatory	Organization Name(s), e.g. CRITFC + YNF; as drop-down pick lists
Organization role	Mandatory	e.g., funders, tribal entity; Drop down pick lists
Individual contact for dataset	Mandatory	Contact person
Person role	Mandatory	e.g., PI, data steward, data analyzer; use drop-down pick lists
Data set type download	Mandatory	(csv, tiles, images, mixed, etc.)
Version identifier	Mandatory	for each downloaded dataset
Dataset Unique Identifier	Mandatory	Digital Object Identifier – (DOI), upon download

Appendix A Goal 2 Progress - Improve metadata capability in tribal data systems

Over this first year of the NOAA grant, we have been assessing the current status of existing CDMS metadata and metadata gaps, and which missing metadata is most necessary, first. Work during Year 2 will focus on improving metadata searching, user policy accessibility, and metadata reports. This is because Dr. Yang noted that the CDMS metadata is structured in a hierarchy – Project metadata, then Datasets' metadata within each project, and that those metadata fields are not searchable or accessible across projects and datasets by all users.

Our collaborative process among CRITFC member tribes will involve:

1. *determining functions we require* that need metadata support, such as

    - **descriptive** (contextual) metadata – to enable identification, discovery, access, re-usability, for example.
    - **administrative** metadata – to assist preservation, rights, and appropriate usage.
    - **structural** metadata – to enable machine processing, such as to build citations, or allow Application Programming Interfaces (APIs) to transfer datasets. These metadata ensure data exchange standards (DESs) that are machine and human readable fields and are necessary for current repositories to interact with the WCO Data Portal, among others. See Semantic Primer

2. assessing our current repositories' existing metadata and metadata gaps.

3. mapping redundant metadata in our tables, then revising, or adding standard metadata for our required uses.

4. developing the ability for users to *search metadata, then produce reports for metadata* across projects for better collaboration. This is a high priority and is in progress.

5. developing machine readable metadata to better allow API data transfer among repositories.