
MBON Data Management

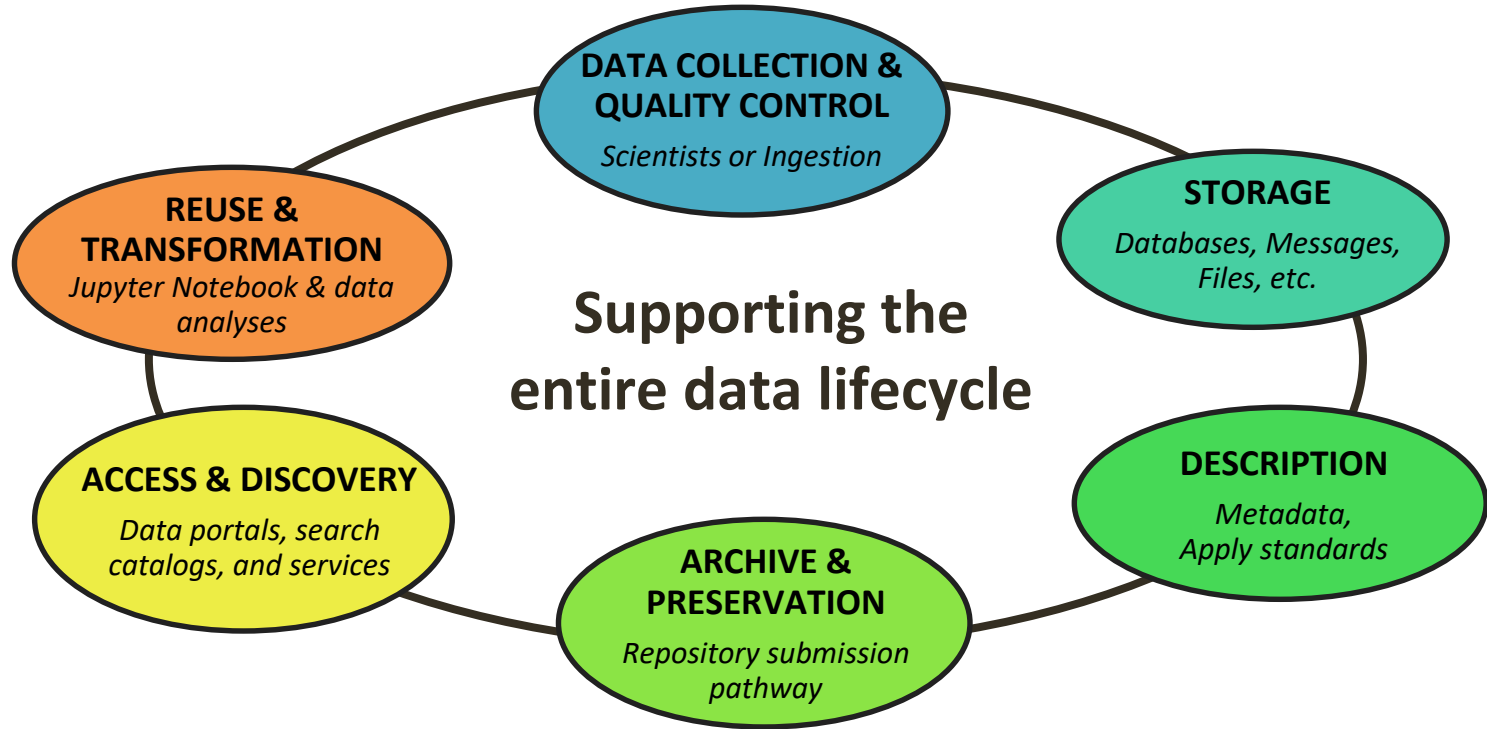
2019-05-24

Stacey Buckelew, Margaret O'Brien

Outline

- MBON Portal and Views Update
- Partnerships with Integrated Ecosystem Assessment and National Marine Sanctuaries Programs
- Pathways for data to the MBON Portal, OBIS, and other platforms
- Advancing standards for biological data in the US and globally
- Next steps and gaps

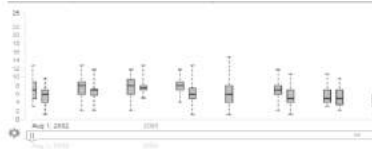
Data Management Lifecycle



Data Categories

Biodiversity

count, richness, diversity indices



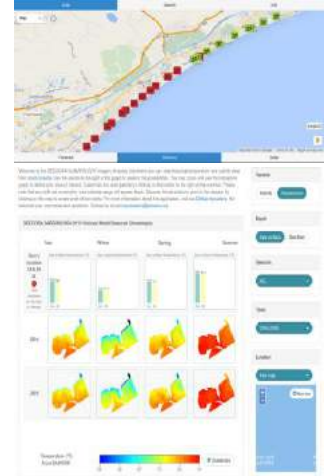
Platforms

moorings, shore stations



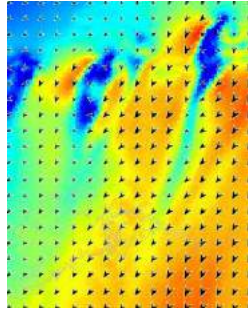
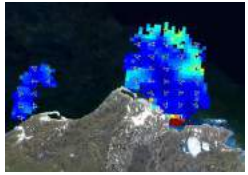
Products

skill assessment, shoreline change, etc.



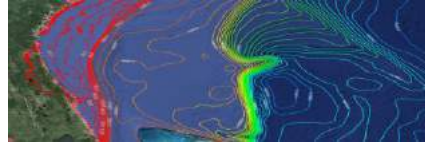
Grids

models, satellite, HFR



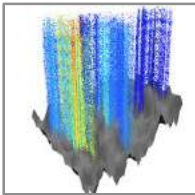
GIS

Habitat types, bathymetry, boundaries, etc.

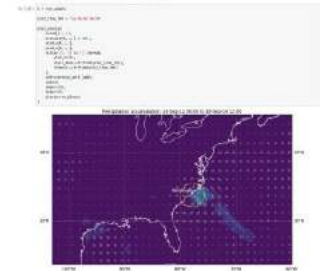


Moving Platforms

animal tags, gliders, particle trajectory

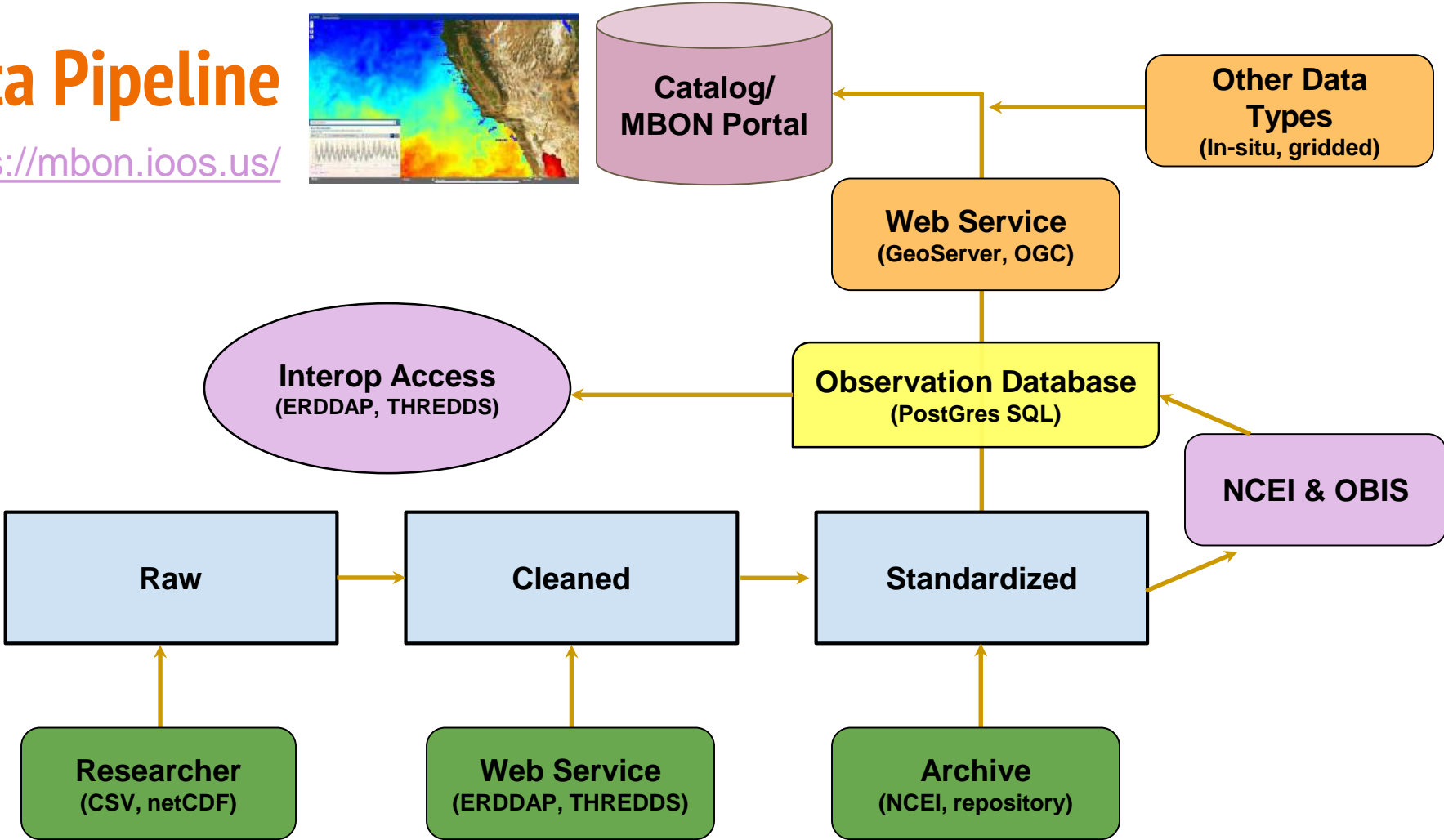
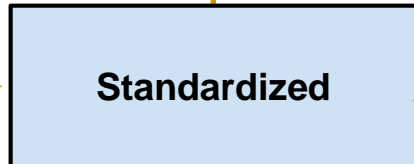
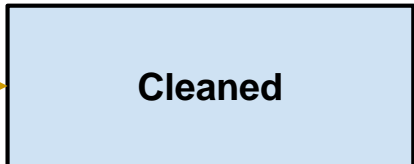
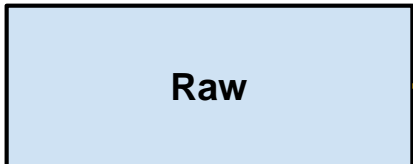
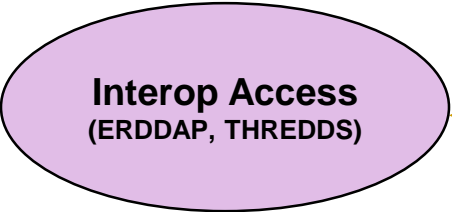
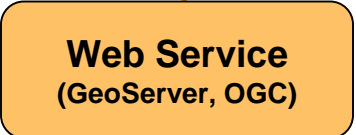
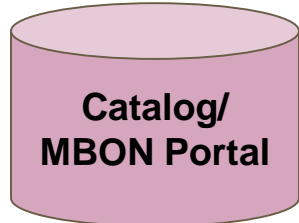
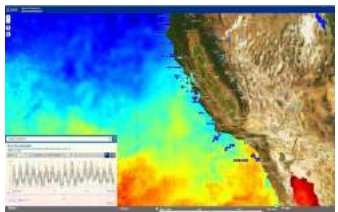


Unstructured Data



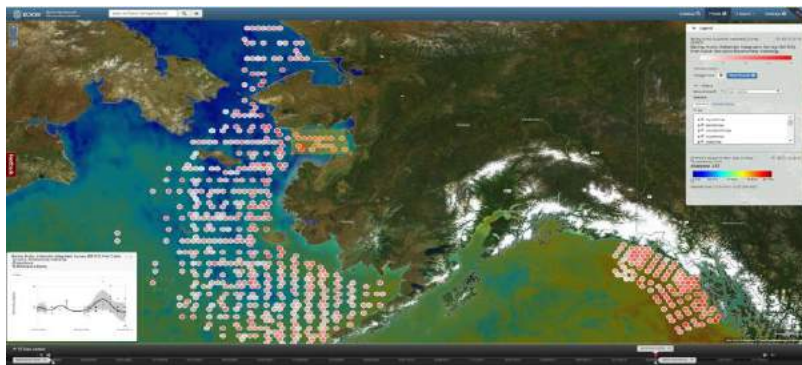
Data Pipeline

<https://mbon.ioos.us/>



Map

Integrate & visualize data from many sources

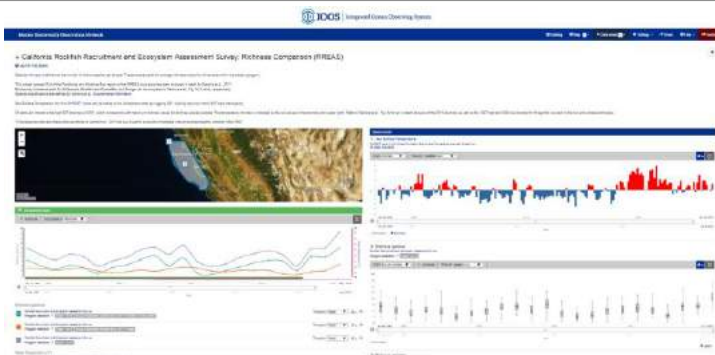


Catalog

Search, metadata, & data download

Data Views

Rapidly assimilate & compare different data streams



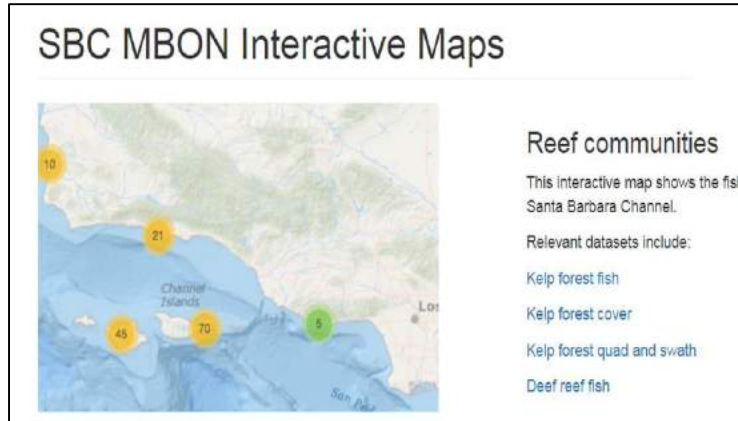
MBON Portal Progress

Demonstration Regions			Demo Portal
FK/MB Sanctuaries	SBC	Arctic	Infrastructure
<p><u>Portal:</u></p> <ul style="list-style-type: none"> • CREMP (ERDDAP refresh) • FGNMS (4 pending) • SEAMAP (in progress) • FL Reef Fish / RREAS • BeachCOMBER (pending) • ACCESS <p><u>Data Views (underway):</u></p> <ul style="list-style-type: none"> • CREMP (updated) • Coral diversity • Cold water bleaching, 2010 	<p><u>Portal:</u></p> <ul style="list-style-type: none"> • Kelp forest fish <p><u>Ready for Ingest:</u></p> <ul style="list-style-type: none"> • LTER DwC kelp forest (3) • SBC fish, kelp, etc (7) <p><u>Data Views:</u></p> <ul style="list-style-type: none"> • Kelp & SST • LTER Kelp, fish (3) 	<p><u>Portal:</u></p> <ul style="list-style-type: none"> • 16 published • 6 visualized • 4 visualized (pending) • 6 archived, 10 (pending NCEI) <p><u>Data Views:</u></p> <ul style="list-style-type: none"> • BASIS: CTD (complete), Fish (underway) • Fish spp richness, MBON • Cross-spp assemblage 	<ul style="list-style-type: none"> • Next generation system - <i>complete</i> • Enhancement, maintenance, feedback - <i>ongoing</i> • ncWMS optimization for ROI data extraction • User authentication & data view narration <p>Other:</p> <ul style="list-style-type: none"> • Global SeaScapes

Partnerships: NMS, IEA

SBC

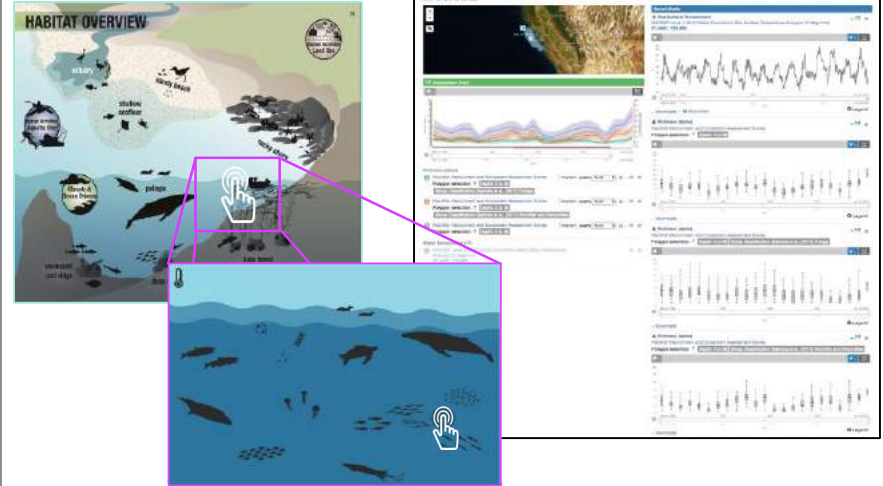
- Prototype maps for CINMS
- Targets Condition Reports:
 - spp status & temporal trends
 - key spp details, potential



<http://sbc.marinebon.org/data/map/>

FK/MB NMS & IEA

- Curated data views for Condition Reports (advisory groups, researchers, managers)
- Integrated with tiered web products (MBON Explorer- public, educators)



Data Standards

Essential features standardized

- Dates
- Location (latitude, longitude)
- Taxonomic names and codes
- Measurement units

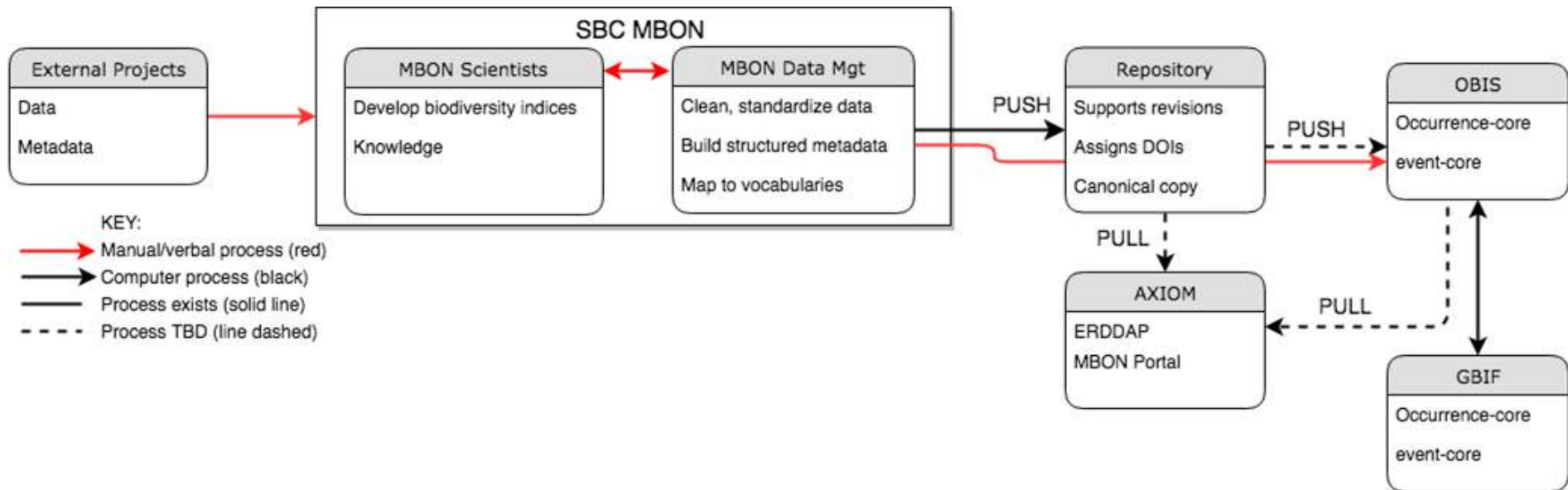
Data versions

- Canonical version is preferred (i.e., citable and archived in a repository)
 - Compatible with many delivery systems and indexers (e.g., ERDDAP, OBIS, DataONE)

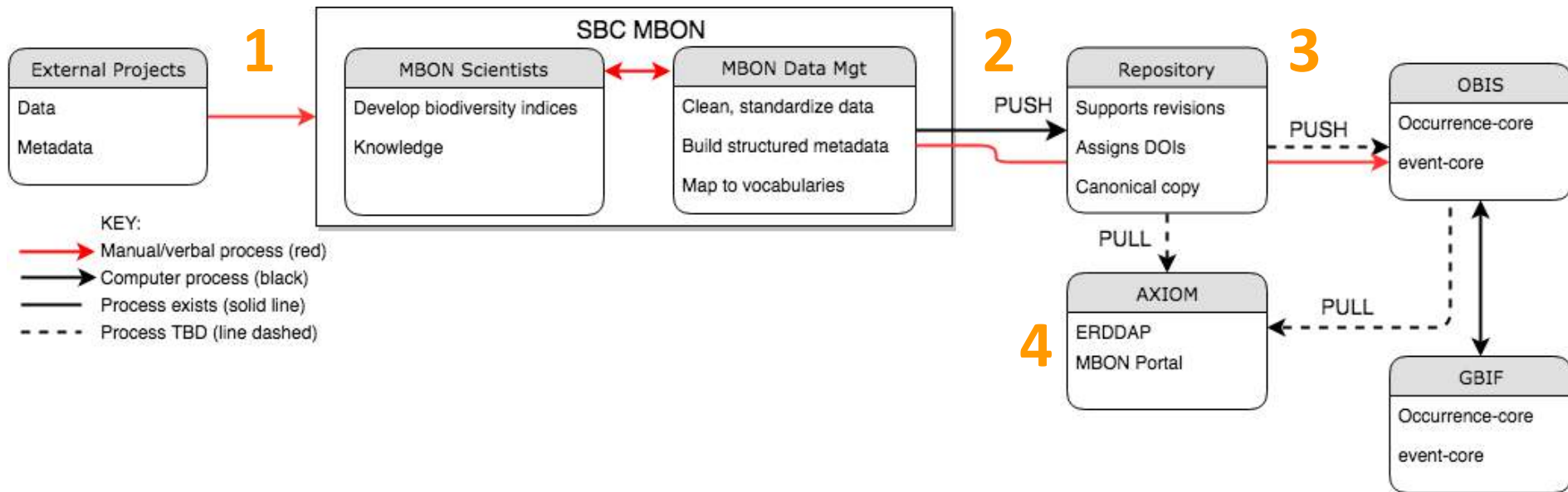
Complete Metadata

- On par with an Ecological Archives “data paper”

Data Pathway



Data Pathway



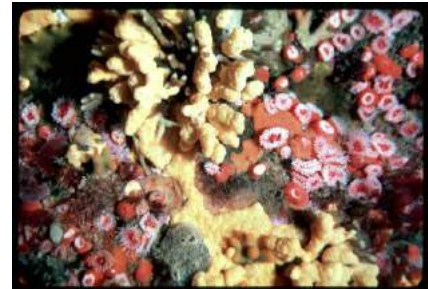
Next Steps - Data Management

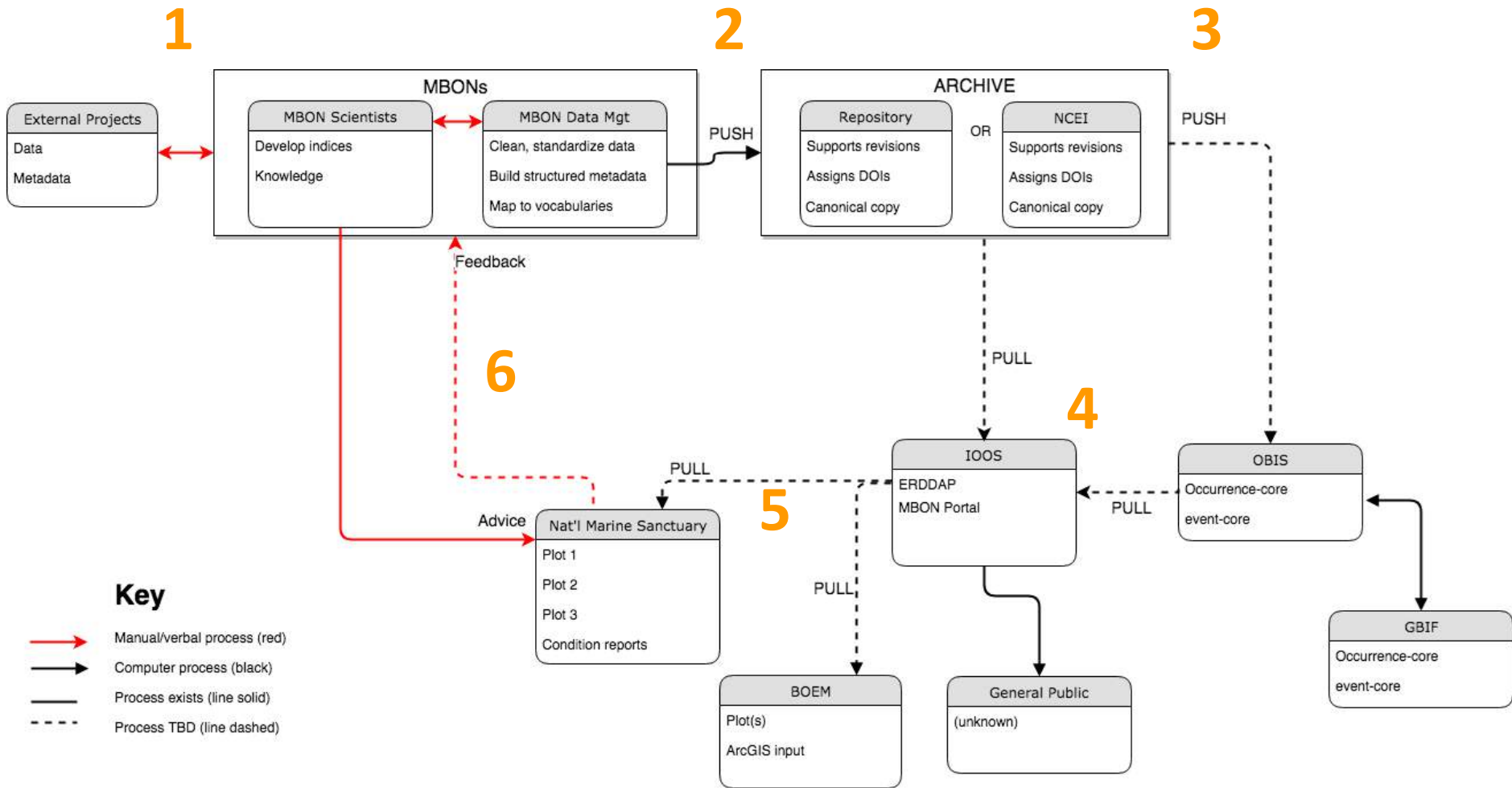
Goal:

Demonstration projects become an operational system

Address Gaps

Formalized MBON DM practices





Gaps

Need	To	Step	Potential solutions
*Consistent dataset design	Simplify reuse by multiple customers. Ensure time-series code runs after data update	2, 3, 5	Outlined by MBON DM Group, 2015 Report
*Vocabularies	Describe measurements	2, 3, 4	Minimum: <i>Text definitions per CF Conventions</i> Better: <i>Community ontology, with URIs</i>
*Formal data queues	Alert systems and users to new data	4, 5, 6	Dataset registry, (e.g., with JSON-LD)
Policy/priority agreement, adherence & buy-in	Ensure data sources are reliable	1	Formalize collaborations Enhance communication structures
Data cleansing/mgt expertise at the source	Maintain coordinated data flow Use personnel efficiently	all	Regional coordinators with resources

Data Management Tools

