Synthesis and Evaluation of Research, Monitoring and Evaluation in the Lower Columbia River and Estuary

Estuary Partnership, Science Work Group

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Portland, Oregon

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Background

- In 2010, the BiOp RME Workgroup Recommendations Report (May 2010) identified gaps in coverage of the 2008 FCRPS BiOp:
  - Habitat restoration and associated RME in the LCRE is being carried out by multiple agencies and entities, but there is no central, accessible, regional database.
  - Data integration, assessment, evaluation and synthesis for BiOp 2013 and 2016 comprehensive reporting poses a significant scientific challenge, which must be met to inform adaptive management and restoration prioritization
- In 2011, the Independent Scientific Review Panel (ISRP) expressed concern that Research, Monitoring and Evaluation (RME) and project development in the LCRE did not appear to be well-coordinated or well-organized.
- In 2012, the Corps initiated EST-P-12-1: Synthesis and Evaluation of Research, Monitoring and Evaluation in the Lower Columbia River and Estuary to address this need.

Study Goal

Develop an estuary-wide data management system for research, monitoring and evaluation studies and restoration project development using a web-based, geospatial database.

Facilitate data sharing among researchers and restoration practitioners

Study Objectives 2012

Objective 1: Coordinate with regional stakeholders to establish analytical needs for RME and habitat restoration in the LCRE.

Objective 2: Develop and demonstrate a web-based proof-of-concept geospatial database management and analysis system.

Objective 3: Apply the data within the Columbia Estuary Ecosystem Restoration Program.

Columbia Estuary Ecosystem Restoration Program

- CEERP Goal: *To understand, conserve and restore ecosystems in the Columbia River Estuary*
- *CEERP Objectives (**DRAFT**)*
  - *Increase the capacity and quality of estuarine and tidal-fluvial ecosystems*
  - *Increase the opportunity for access by aquatic organisms to shallow water habitats*
  - *Improve ecosystem realized functions*

Approach

	2012 Coordination and establish prototype database	**2013** Refine database applications	**2014** Transfer to Regional Entity
Objective 1 Coordinate	Stakeholder input on estuary data model and database.	Stakeholder review and feedback.	Stakeholder coordination for eventual transfer of technology.
Objective 2 Develop	Develop estuary data model and database (PNNL-collected data); Refine analytical questions and outputs; Identify relevant and compatible data systems.	Incorporate regionally available datasets; Normalize data; Link to other compatible data systems (example, PNAMP)	Finalize estuary data model and database management and analysis system
Objective3 Apply	Perform preliminary analysis . Apply results.	Analyze data. Apply results.	Analyze data. Apply results.

Philosophies

Objective 1. Coordinate

- Incremental roll-out of plans and products early and often to show progress and build regional support.
- Relates to other relevant regional data systems and programs (i.e., PNAMP)

Objective 1. Coordinate People

Avenue	Composition	Frequency	Purpose
A	Regional managers: •EP Science Work Group **1/** •AFEP SRWG **2/**	Quarterly	Awareness, feedback
B	Regional techies, data nerds	As Needed	Technical coordination, logistics
C	Corps/BPA/EP	Monthly	Programmatic coordination

1/ Lower Columbia River Estuary Partnership Science Work Group: Columbia Land Trust, Columbia River Estuary Study Taskforce, EPA, NMFS, USFWS, ODFW, WDFW, and others

2/ Regional "fish managers"

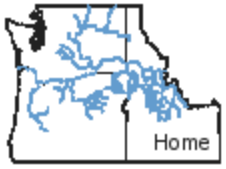
Objective 1. Coordinate Programs

- CBFISH.org
- Monitoringmethods.org
- CMOP.org/Saturn
- CHaMP
- PITAGIS
- DART
- Streamnet
- **Others?**

CHaMP Columbia Habitat Monitoring Program

COLUMBIA BASIN FISH & WILDLIFE PROGRAM PROJECTS & PORTFOLIOS aka Taurus

CMOP Center for Coastal Margin Observation & Prediction



Columbia River DART
Data Access in Real Time
Columbia R. DART | Status & Trends | Inseason Forecasts | Tools & Models | Research

Philosophies

Objective 1. Coordinate

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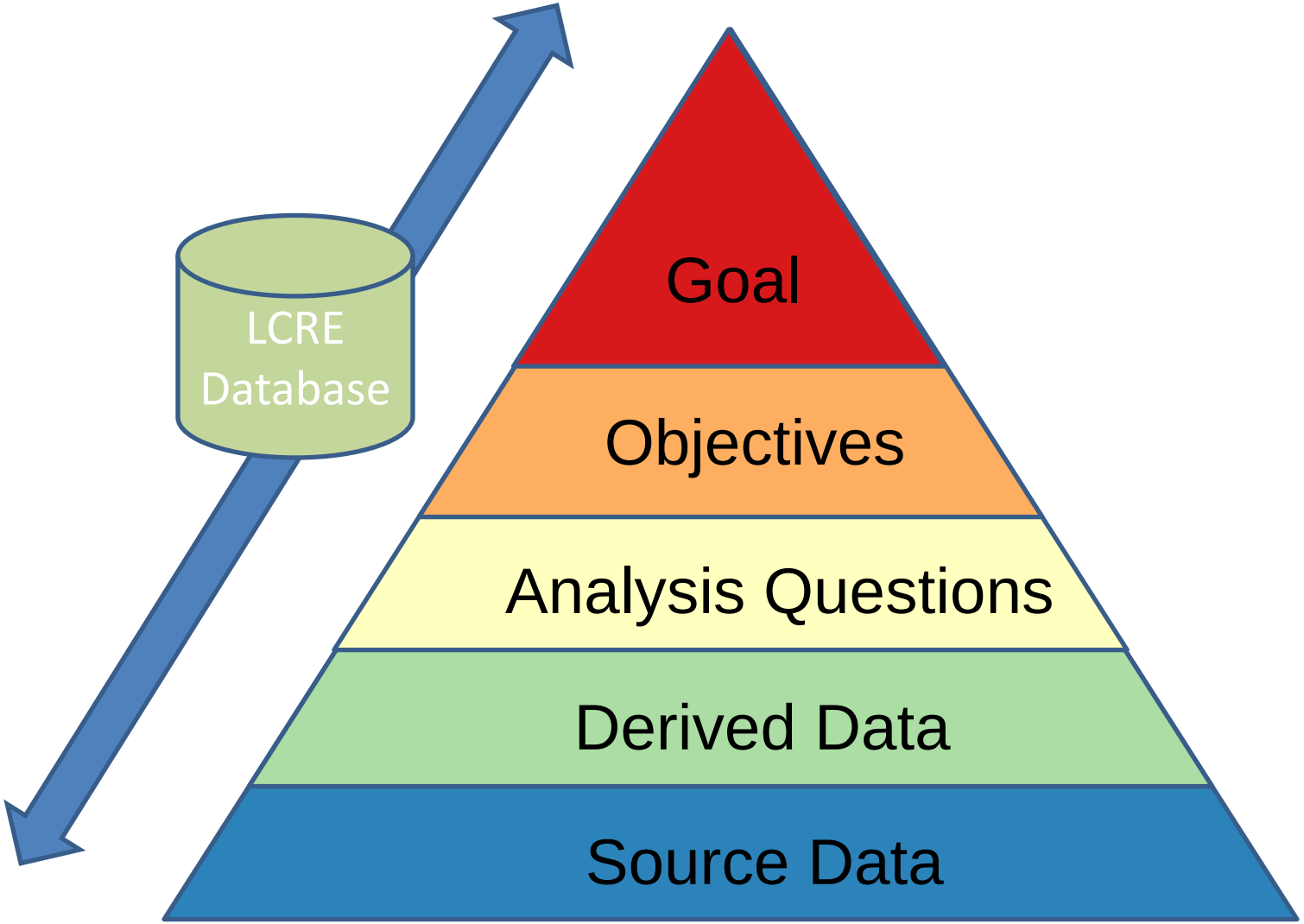
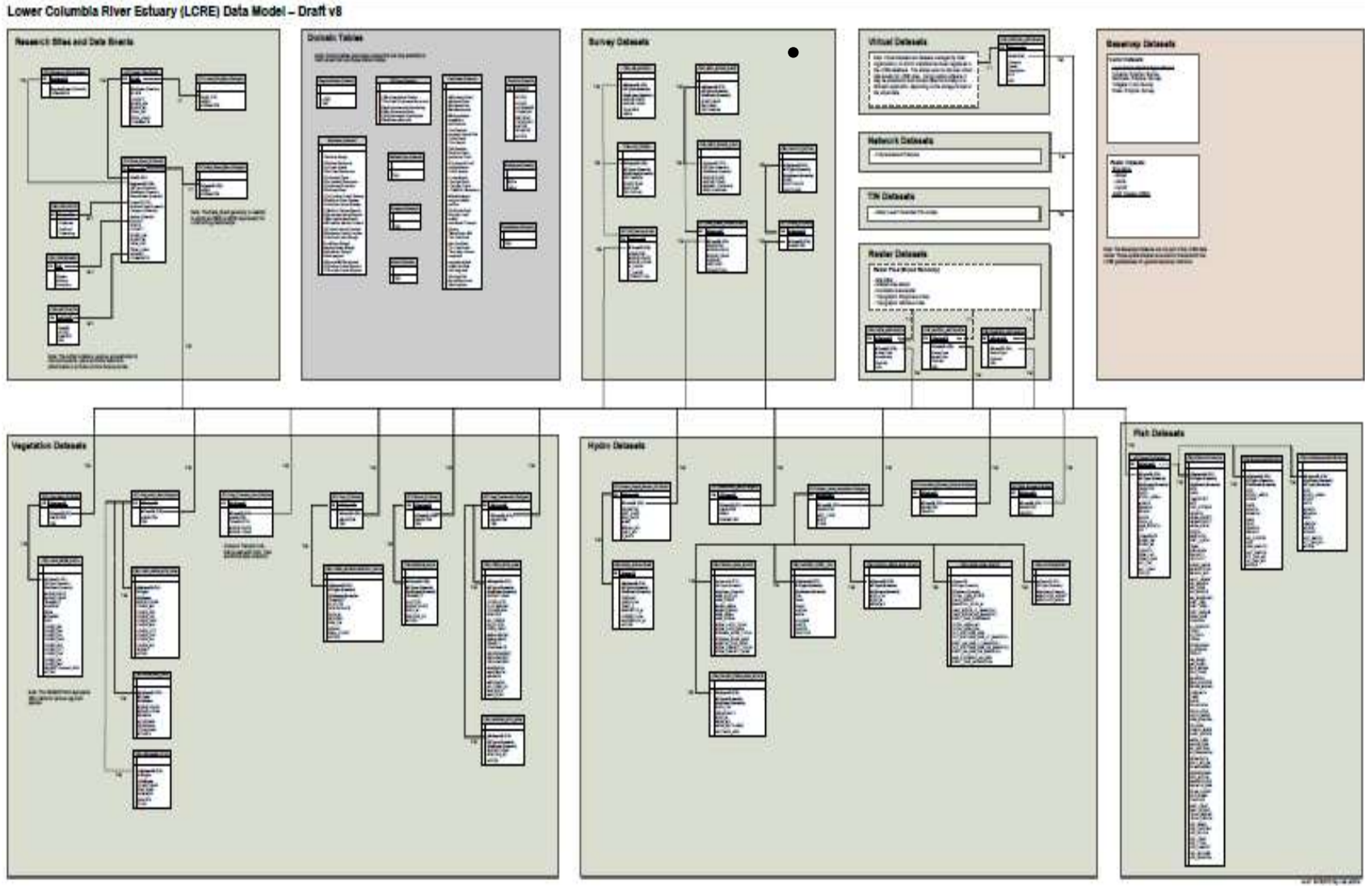
Objective 2. Develop

- Organizing framework: CEERP goal>>objectives >> analysis questions >>derived data>>source data
- LCRE Data Model that is adaptable and scalable (i.e., can add data categories, metrics)
- LCRE Database that allows for integrated analyses across studies and projects

Objective 2. Develop Organizing Framework



Objective 2. Develop LCRE Data Model



Objective 2. Develop LCRE Database

Allows for integrated analyses across studies and projects

Example,

- Hydrologic: water surface elevation, catchment boundary
- Water quality and chemistry: temperature, dissolved oxygen, phosphate
- Vegetation: herbs, trees, shrubs, biomass
- Fish: counts, sizes
- Invertebrates: benthos, neutron, insect

Philosophies

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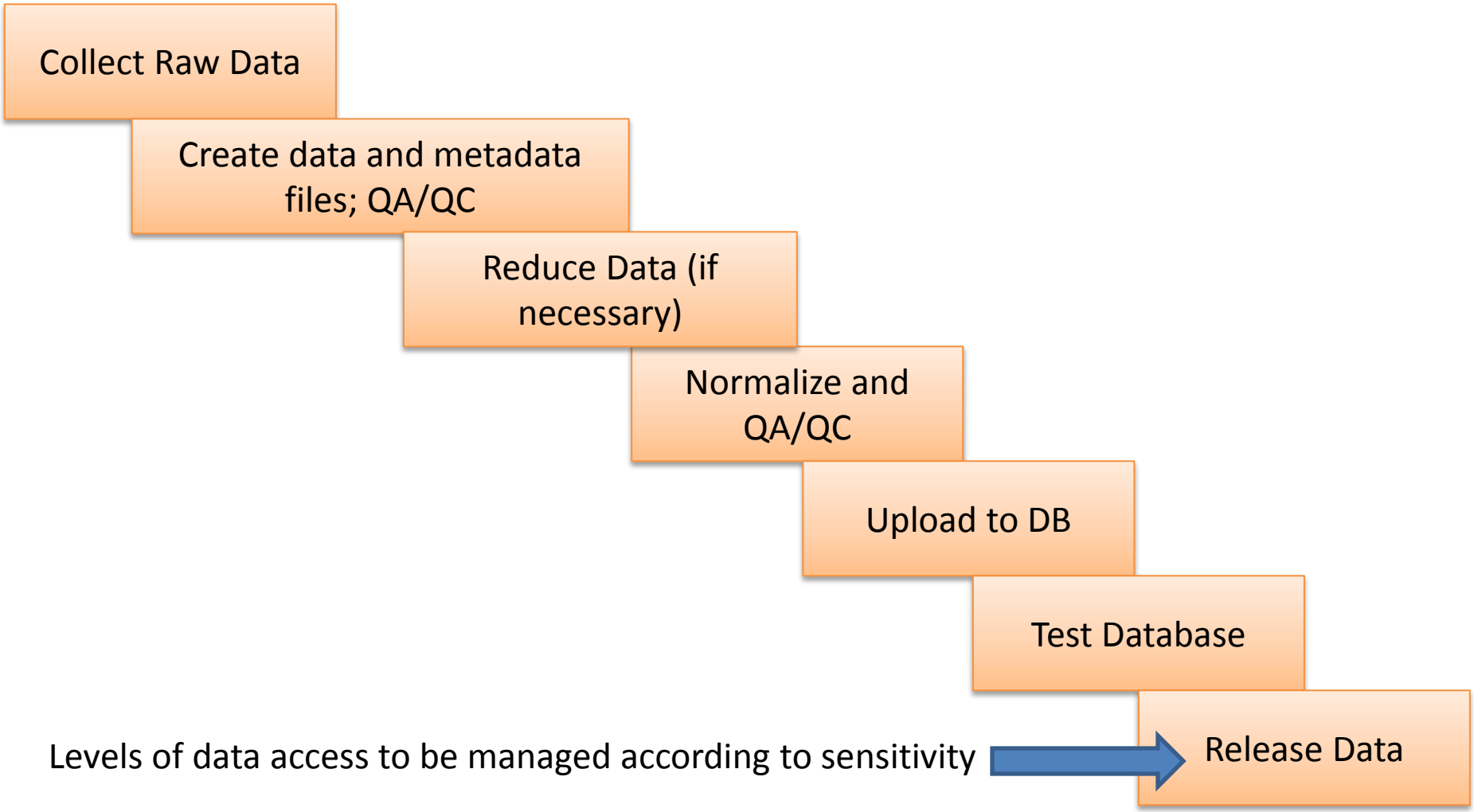
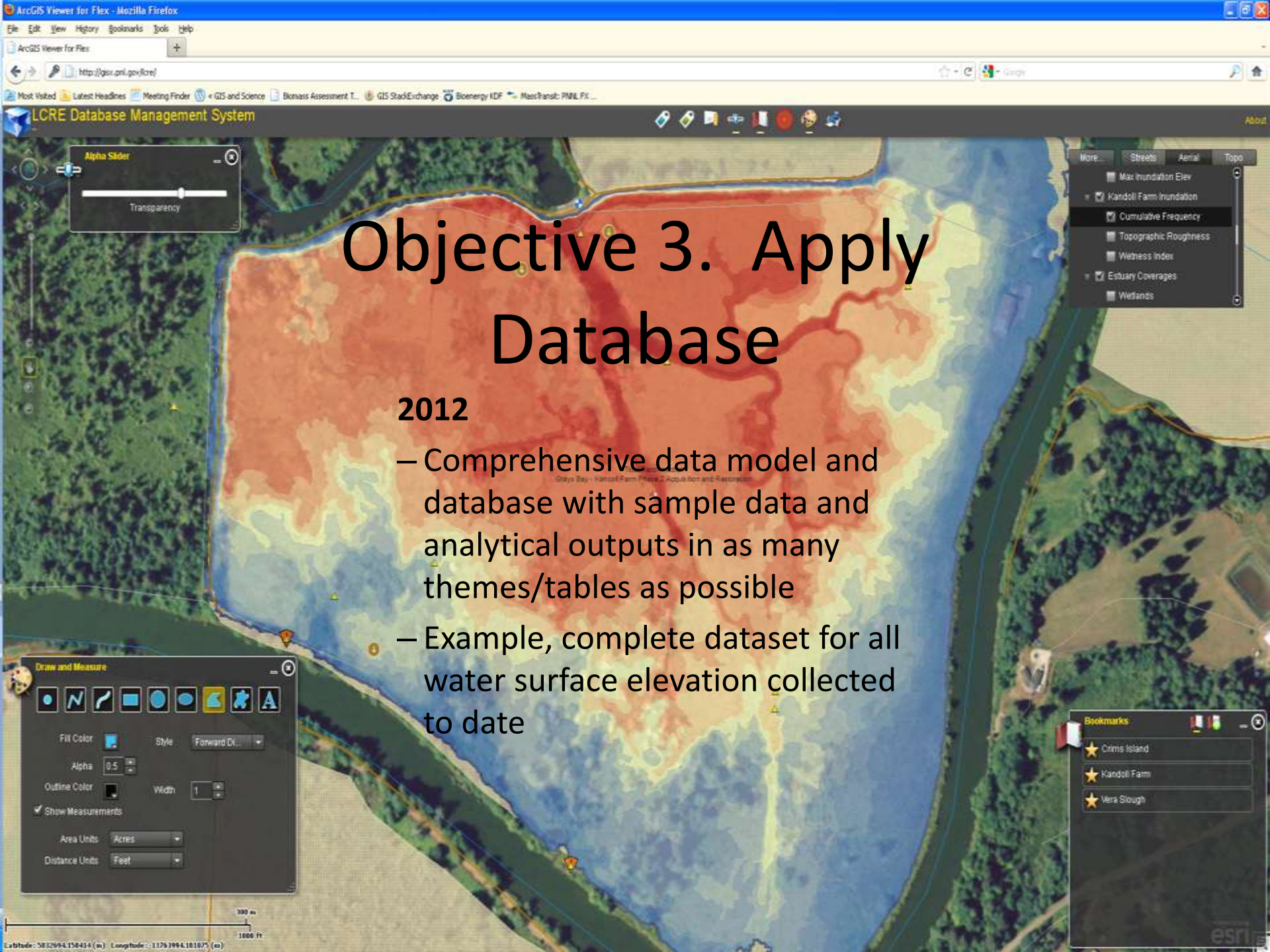
Objective 3. Apply

- Protect data integrity
- Provide a publically accessible (web-based) data management and analytical system = database
- Support science based decision

Objective 3. Apply Data Integrity




ArcGIS Viewer for Flex - Mozilla Firefox
LCRE Database Management System
Alpha Slider
Transparency
Objective 3. Apply Database
2012
– Comprehensive data model and database with sample data and analytical outputs in as many themes/tables as possible
– Example, complete dataset for all water surface elevation collected to date
Draw and Measure
Bookmarks
Crims Island
Kandoll Farm
Vera Slough

Objective 3. Apply Decision Support

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Next Steps:

Quarterly Meetings:

- June 2012 – Introduction and overview
- September 2012 – Review Estuary Data Model and analytical questions
- November 2012 – AFEP Annual Review, presentation of prototype database

Comments and Questions are Encouraged!

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