Can We Obtain Reliable Data when Implementing Ecological Restoration Projects?

National Conference for Ecological Restoration

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Great Lakes Restoration Initiative (GLRI)

- Toxic Substances and Areas of Concern
- Invasive Species
- Nonpoint Source Pollution Impacts on Nearshore Health
- Habitat and Species
- Foundations for Future Restoration Actions
Drivers of Quality Across Federal Agencies

• Information Quality Act/OMB Information Quality Guidelines

  – Requires government-wide standards for “ensuring and maximizing the quality, objectivity, utility, and integrity of information”

  – Applies Federal agencies that are subject to Paperwork Reduction Act
EPA Quality System Requirements

EPA’s Quality Policy

• American National Standard, ANSI/ASQC E4
• ISO 9001 certification

EPA Organizations – Internal EPA Directives

• EPA Quality Program Policy – CIO 2106.0 (Oct. 2008)
• EPA Procedure – CIO 2106-P-01.0 (Oct. 2008)
• CIO 2105.0 (May 2000)
• CIO 2105-P-01-0 (May 2000)
EPA Quality System Requirements

Non-EPA Organizations

• Federal Acquisition Regulations
  – 48 CFR 46 for contractors
  – 2 CFR 1500.11 for assistance agreements
  – 40 CFR 35 for state and local assistance

• EPA Order 5700.7A1
  – Demonstrate environment results [outcomes] achieved through EPA grants programs
Project-level Quality Documentation

• Sufficient project-level documentation to assure project success and reproducibility

• Provides a clear, concise, and complete plan for environmental data operations and associated quality objectives

• Quality Assurance Project Plan = QAPP
  – Guidance = EPA QA/R-5
QA Challenges for Ecological Restoration Projects in a Large-scale Ecosystem

- Quality objectives
- Estimating uncertainty in collected data
- Establishing quantitative data quality acceptance criteria
- Training & assessments
- Field sampling methods & data collection
- Data management, verification, & analysis
EPA is a young agency

- Started in 1970s = rookie!
- Enforcement-driven agency
  - Not land management
  - Not restoration
**Interagency Ecological Restoration Quality Committee**

- **Initiated:** June 2012  
- **Purpose:** Share quality concepts, practices, guidance, methods, and tools to improve projects funded by the GLRI

<table>
<thead>
<tr>
<th>Participating Organizations</th>
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<tbody>
<tr>
<td>NFWF</td>
<td>NOAA</td>
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<tr>
<td>NPS</td>
<td>USACE</td>
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<td>USEPA*</td>
<td>USFS</td>
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<td>USFWS</td>
<td>USGS</td>
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<tr>
<td>State agencies</td>
<td>Local and private groups</td>
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<tr>
<td>*USEPA also provides contractor support</td>
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“Application of Quality Assurance and Quality Control Principles to Ecological Restoration Projects”
Can we obtain reliable data when implementing ecological restoration projects?

Wait…

What do you mean by reliable data?
Attributes of Reliable Data

• Applicability and Utility
• Soundness
• Clarity and Completeness
• Uncertainty and Variability
• Evaluation and Review
Can we obtain reliable data when implementing ecological restoration projects?

Yes! But...you better have a vision for what success looks like!
Purpose

Assess which components in ecological restoration projects are lacking in QA/QC details/practices

– Continuous Improvement –
## Methodology and Results

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Total projects analyzed:</td>
<td>15</td>
</tr>
<tr>
<td>Total comments:</td>
<td>233</td>
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<tr>
<td>Average comments per project:</td>
<td>16</td>
</tr>
<tr>
<td>Lowest number of comments in a project:</td>
<td>6</td>
</tr>
<tr>
<td>Highest number of comments in a project:</td>
<td>25</td>
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Extent of Deficiencies on all Projects

- Project/Quality Objectives: 100%
- Data Management: 100%
- Review/Verification/Validation: 87%
- Assessments and Reports: 80%
- Equipment/Instruments/Supplies: 80%
- Secondary Data: 67%
- Sampling/Observational Measurements: 53%
- Training: 53%
Outcomes

- Establish realistic project objectives, consider both short and long term
- Define the quality of the data needed to achieve project objectives
- Ensure the guidance document addresses the deficiencies identified by reviewing the project plans
Food for thought: We’re paid to think!

• Can you conduct a similar assessment and share your findings?
• Are there commonalities across different programs that we should capture in our guidance document?

After this session, consider joining us for a discussion over lunch in the Flamingo Room
Questions
We welcome and encourage feedback.

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