Evaluating Project Effectiveness

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GDIT

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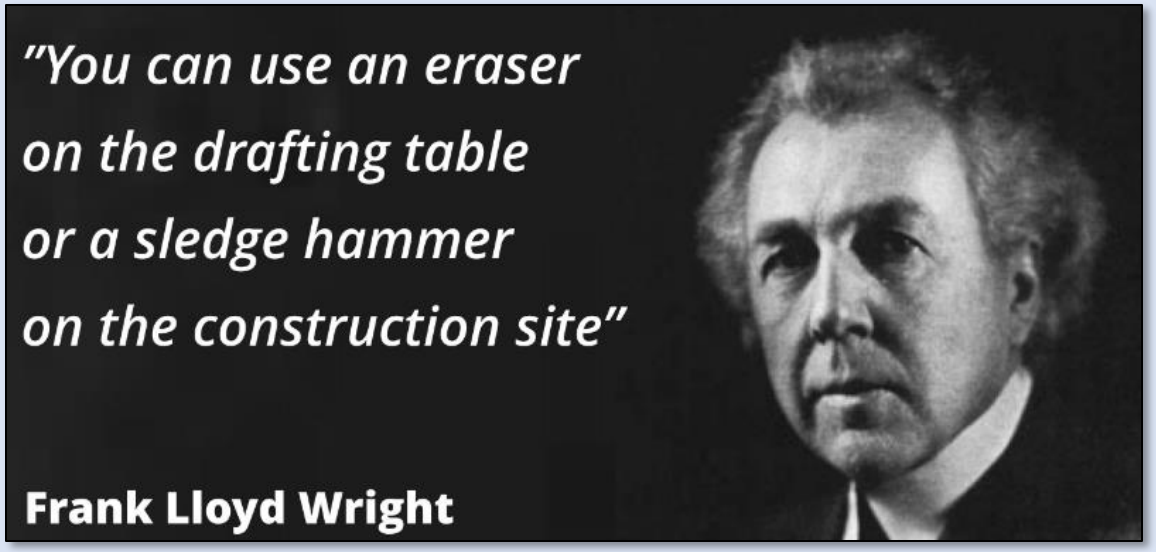
GENERAL DYNAMICS
Information Technology


"You can use an eraser
on the drafting table
or a sledge hammer
on the construction site"
Frank Lloyd Wright


He who fails to plan is
planning to fail.
- Winston Churchill

Study by Bernhardt *et al.* in 2007

- Interviewed 317 project managers for restoration projects
  - Nearly 50% said projects were a success, yet only 18% evaluated success on achieving defined criteria
  - 47% of the project managers based their evaluation on site observations or public opinion

Bernhardt, E. S., Sudduth, E. B., Palmer, M. A., Allan, J. D., Meyer, J. L., Alexander, G., Follastad-Shah, J., Hassett, B., Jenkinson, R., Lave, R., Rumps, J. and Pagano, L. (2007), Restoring Rivers One Reach at a Time: Results from a Survey of U.S. River Restoration Practitioners. *Restoration Ecology*, 15: 482–493. doi:10.1111/j.1526-100X.2007.00244.x

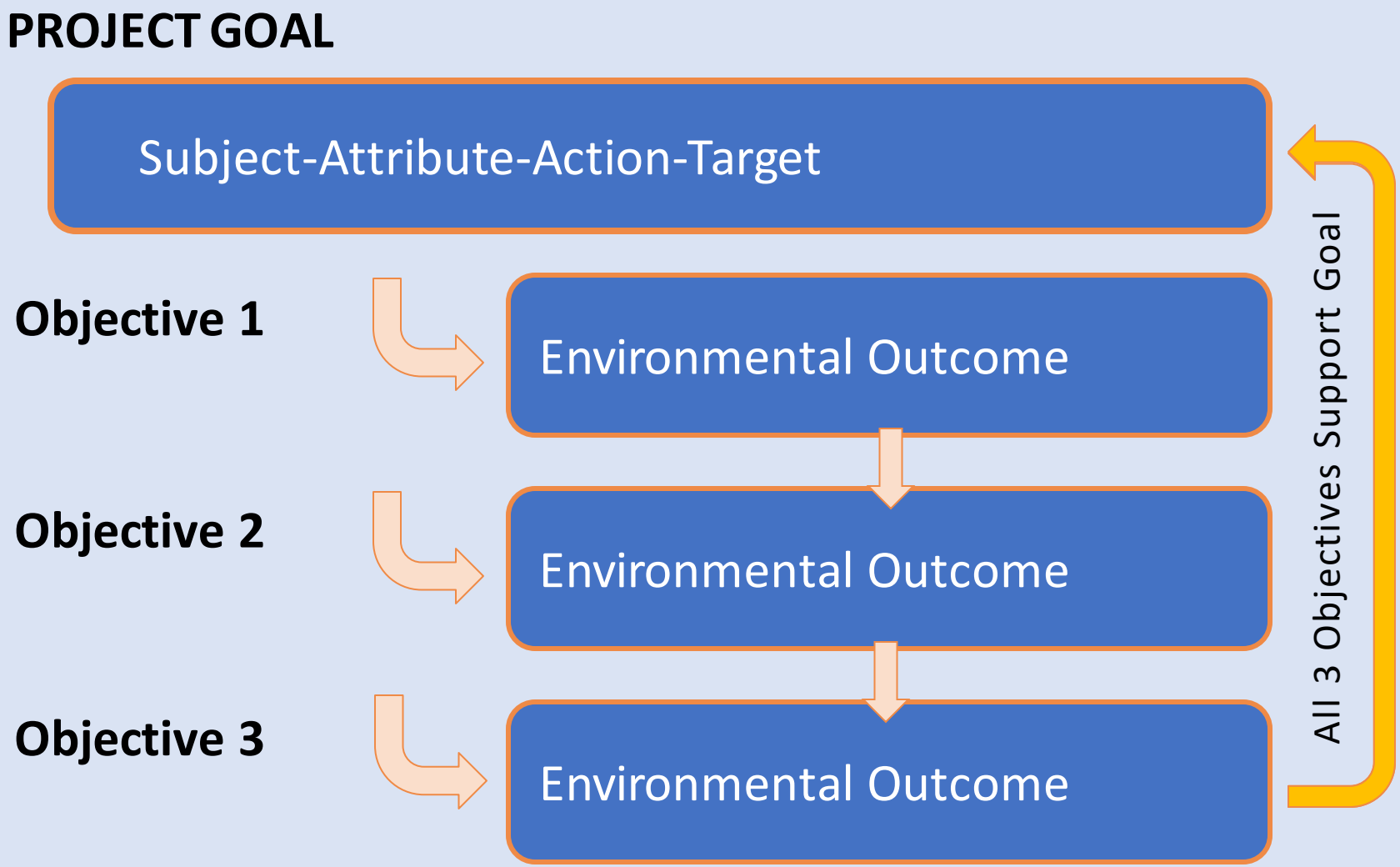
Study by Bernhardt *et al.* in 2007

- The study concluded:
  - Project goals are not linked to objective success criteria
  - Data collected are not relevant to project goals
  - Only 10% of projects had all three:
    1. Clearly defined goal
    2. Objective success criteria
    3. Evaluation of success

Value of Systematic Planning

- Process based on the widely-accepted "scientific method"
- Common-sense approach to ensure project planning and documentation is balanced with the intended use of information and the available resources

Goals and Objectives



What is a project goal?

- Descriptive, convey a purpose
- Desired future conditions
  - Consider the appropriate time scale
- Not defined in measureable terms

Project Goal

Include **4** elements:

1. **Subject or resource of concern**
   - e.g., habitat type, particular species
2. **Attribute of interest for the subject**
   - e.g., species diversity, population size
3. **Conceptual target or condition**
   - e.g., optimum, natural, maximum
4. **Action or effort to be made**
   - e.g., restore, provide, achieve

– Example –
Project Goal

Decrease invasive *Phragmites australis* (common reed) cover to improve plant biodiversity and coastal habitat

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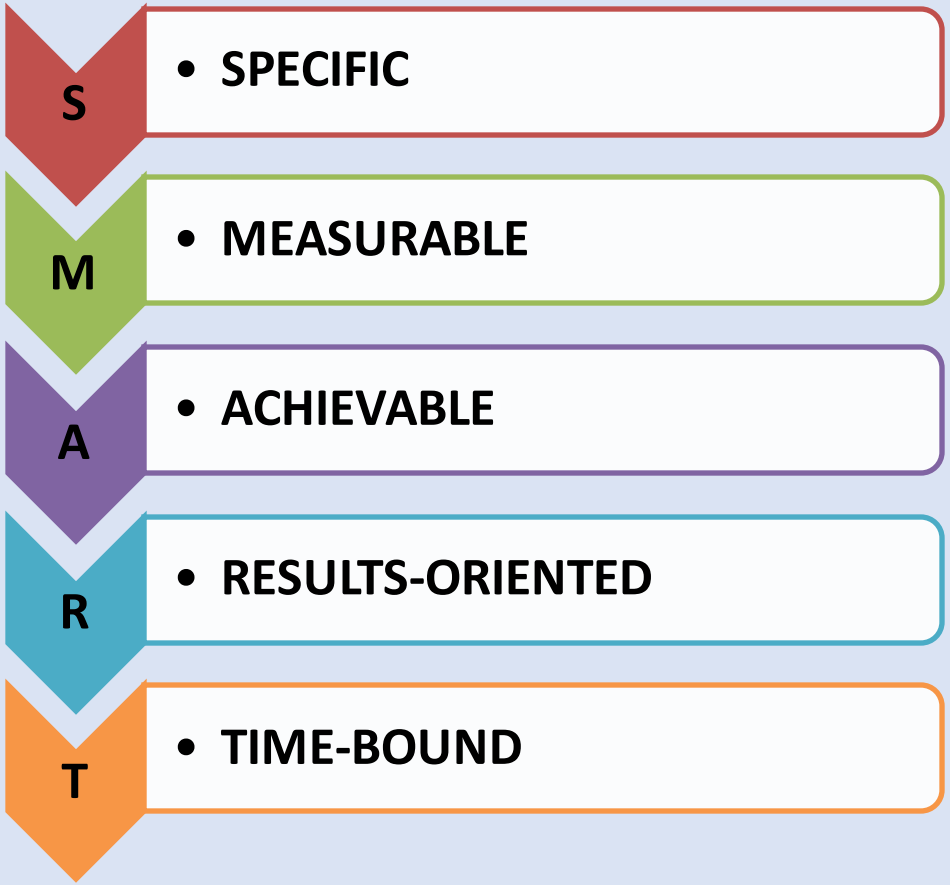
SMART Project Objectives



An objective that includes **SMART** elements is more likely to succeed because the objective statement is clear and **SPECIFIC** defining exactly what needs to be achieved.

– Example –
Project Objective

Goal:

Decrease invasive *P. australis* (common reed) cover to improve plant biodiversity and coastal habitat

Several Objectives to Achieve Goal:

1. Year One
   a. Decrease *P. australis* cover by at least 85% at site
   b. Increase native plant species by at least 10% and percent cover of native plant species by 35% at site
2. Year Two
   a. Decrease *P. australis* cover by at least 95% at site from the baseline
   b. Increase native plant species by at least 20% and percent cover of native plant species by 60% at site from year one

Hint: Specific, **M**easureable, **A**chievable, **R**esults-oriented, **T**ime-sensitive

Establishing Quality Objectives Depends on Measurement Type

Physical Samples

Instrumentation

Observations

1. Collection and laboratory analysis of **physical samples**
   - Standard methods (SOPs)
   - Field duplicates, method blanks, matrix spike samples
2. Measurements determined *in situ* using scientific **instrumentation**
   - Manufacturer certification
   - Standard methods (SOPs)
   - User calibration, standard reference materials, duplicate measurements
3. Measurements conducted *in situ* based on **observations** using observer judgement
   - Standard methods (SOPs)
   - Training and certification
   - Field audits, duplicate measurements using QC field check procedures

Evaluating Objectives

- Evaluate whether the performance criteria established for data quality indicators is achieved
  - Precision, accuracy, representativeness, comparability, completeness, and sensitivity
- Conduct data review and assessment
  - Use data to evaluate SMART project objectives
- Develop final report documenting confidence in achieving outcomes

Conclusion

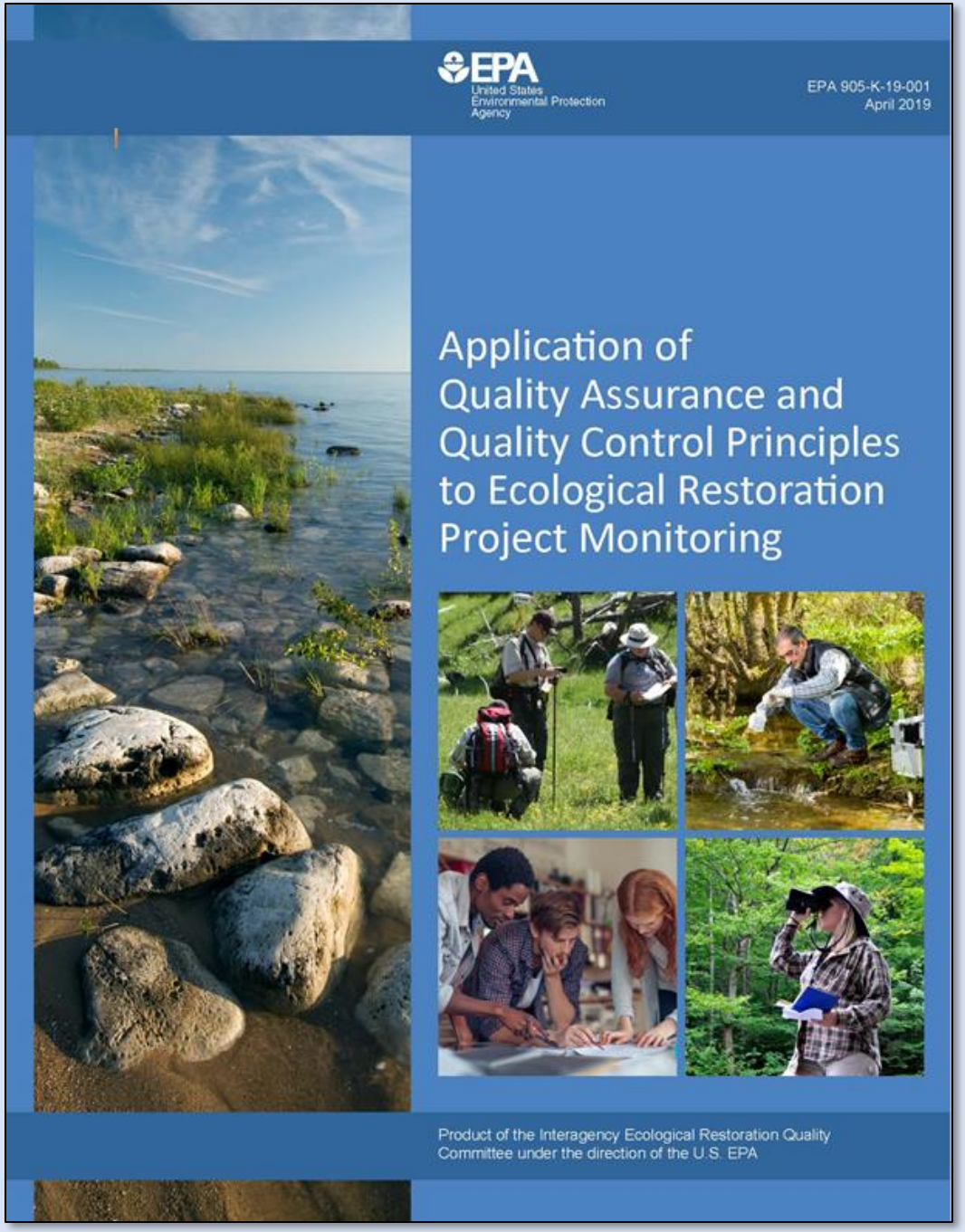
"I had never worked under a project that required a QAPP and I learned a lot working through this with you all. I got a little **frustrated with it at times** but in the end, it was a **worthwhile experience**!"

- Todd Norwood, Project Lead from Red Cliff Tribe

"Application of Quality Assurance and Quality Control Principles to Ecological Restoration Project Monitoring"

EPA-905-K-19-001

https://www.glri.us/node/250



Webinars – Interagency Ecological Restoration Quality Committee

- **Thursday, February 23, 2023**
  - *Presenter*: Reena Bowman, U.S. Fish and Wildlife Service
  - *Topic*: State-wide Habitat Recovery Efforts for Piping Plover
- **Thursday, March 30, 2023**
  - *Presenter*: Kristen Schmitt, Northern Institute of Applied Climate Science (NIACS)
  - *Topic*: A Menu of Climate Adaptation Strategies and Approaches for Great Lakes Coastal Ecosystems
- **Thursday, April 27, 2023**
  - *Presenter*: Abigail Lynch, U.S. Geological Survey
  - *Topic*: RAD (Resist-Accept-Direct) Framework: When to Resist?

Thank you!

Please contact Molly Middlebrook (Molly.Middlebrook@gdit.com)

with any questions.