Environmental Enhancements and Navigation Infrastructure (EENI)

A Study of Existing Practices, Innovative Ideas, Impediments, and Research Needs

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Outline

- Project Concept
- Project Approach
- Survey Results
- Existing Projects
- Next Steps

Project Concept

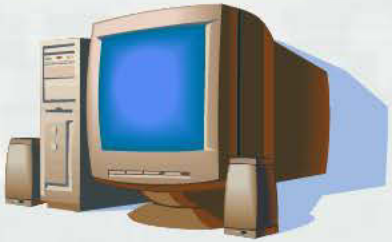
- **To identify opportunities to increase environmental enhancements of navigation infrastructure projects**

Enhance for shellfish?

Crabs?

Project Approach

- E-mails
- Webinars
- On-line Survey*
- Telephone Follow-up
- Meeting/Conference Presentations
- Data Summary
- Report



*Initial Target Group: US Federal Agencies (USACE, USEPA, etc.)

Information Needs

- Key policies, regulations, & laws
- Things we already do
- Ideas for new possibilities
- Things tried that haven't worked and why
- Impediments
- Potential solutions to impediments
- Items needing further *research* to support use
- Case studies and relevant reports

EENI Survey Sections

- Information About You (9 Qs)
- Environmental Enhancements: Present and Potential (13 Qs)
- Laws, Policies, and Regulations (6 Qs)
- Impediments to Use (12 Qs)
- Research Needs (8 Qs)
- Is There Anything We Missed? (3 Qs)
- Invite Others (2 Qs)

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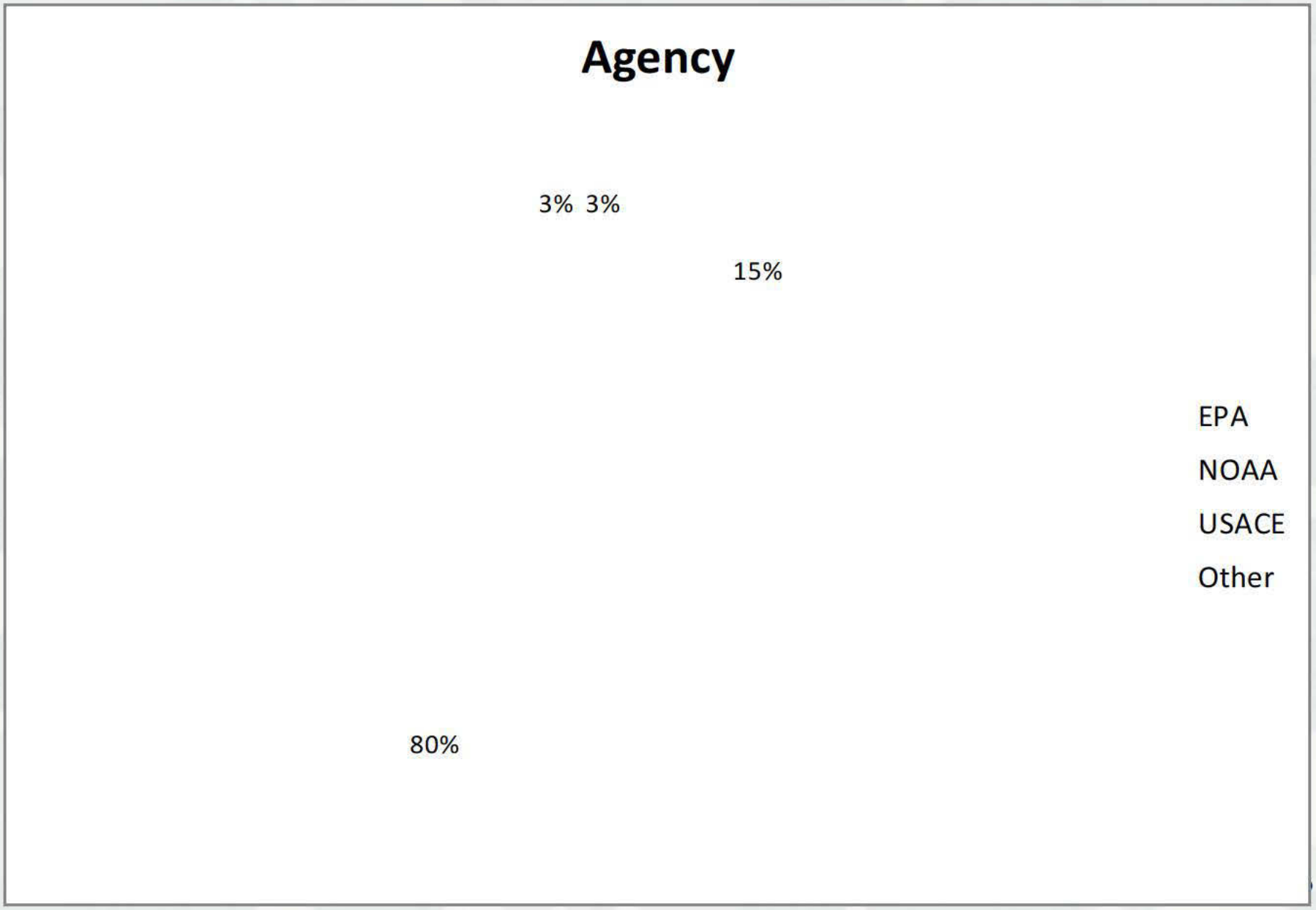
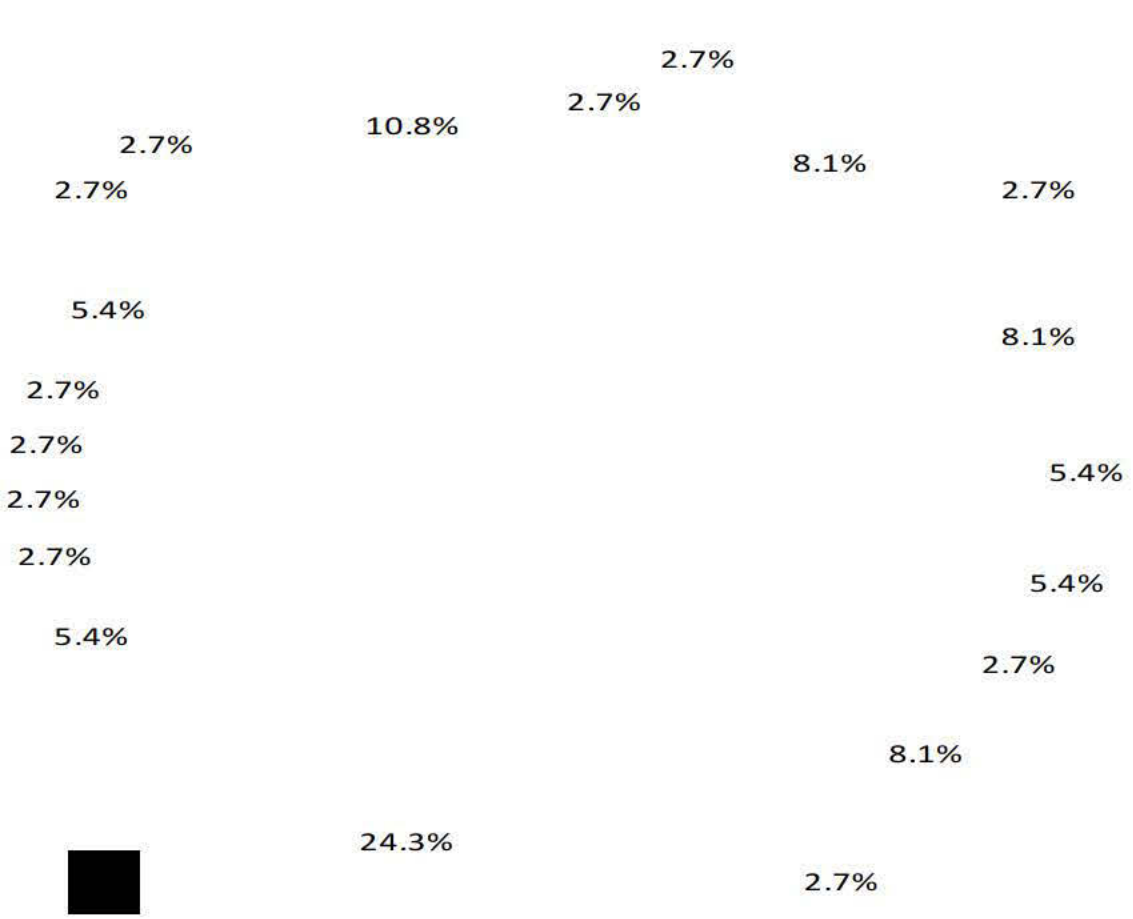
Who Took the Survey?



Who Took the Survey?

What USACE district do you primarily work with?



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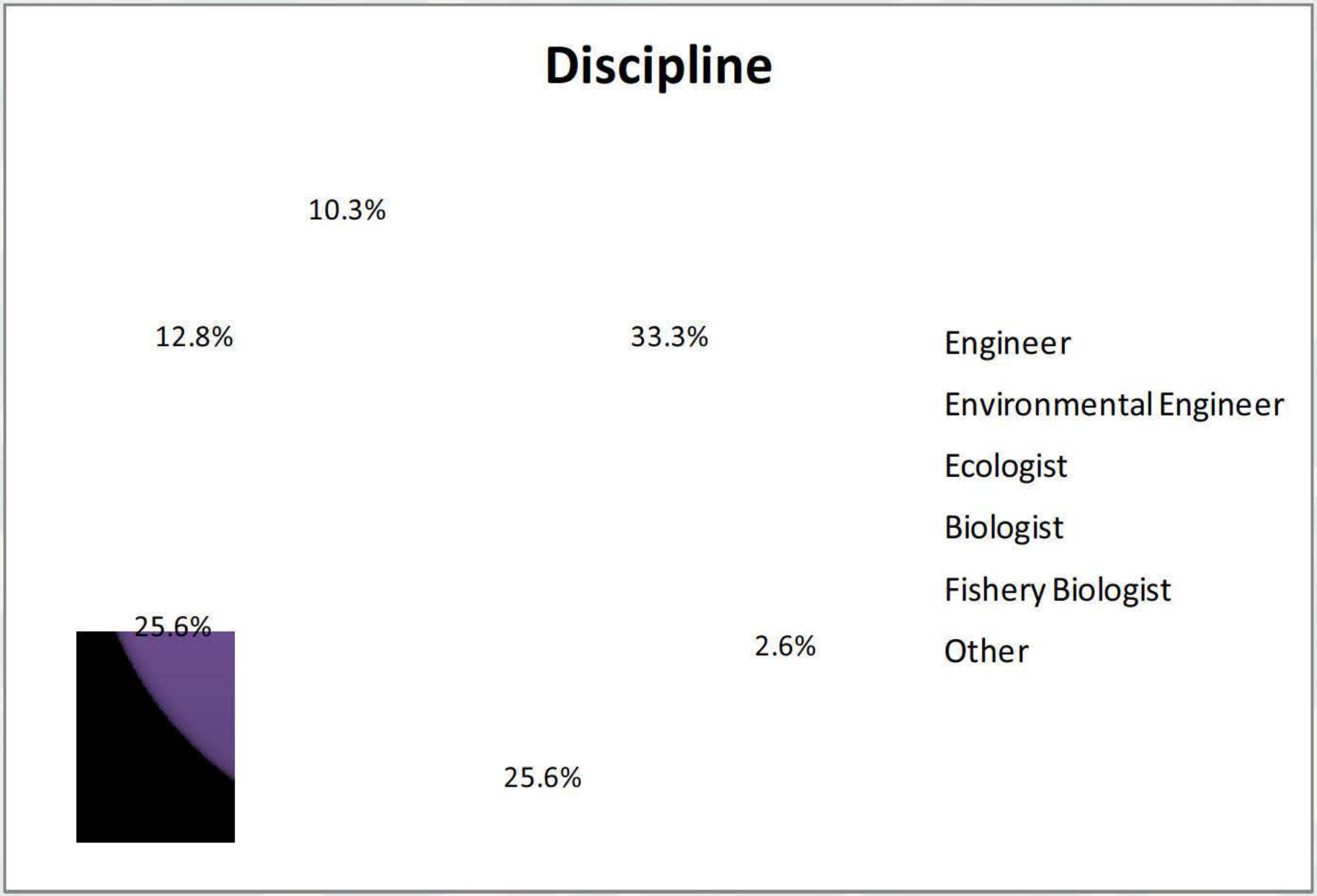

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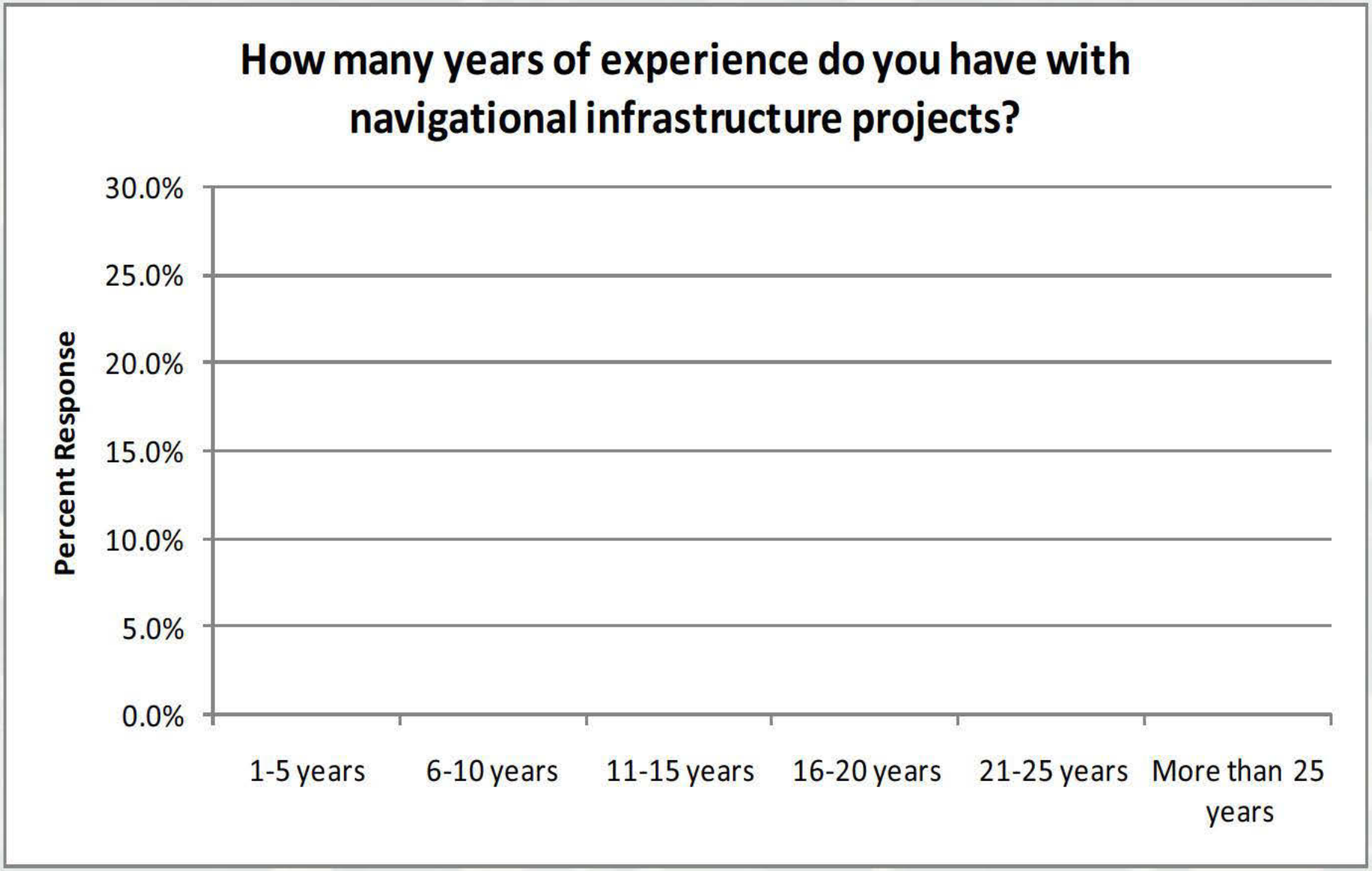

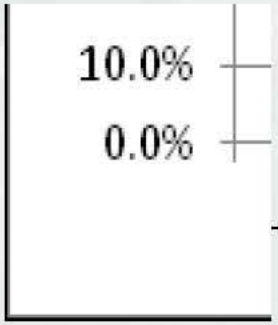
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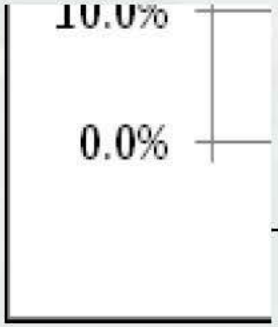
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Existing EENI
Inland River Systems

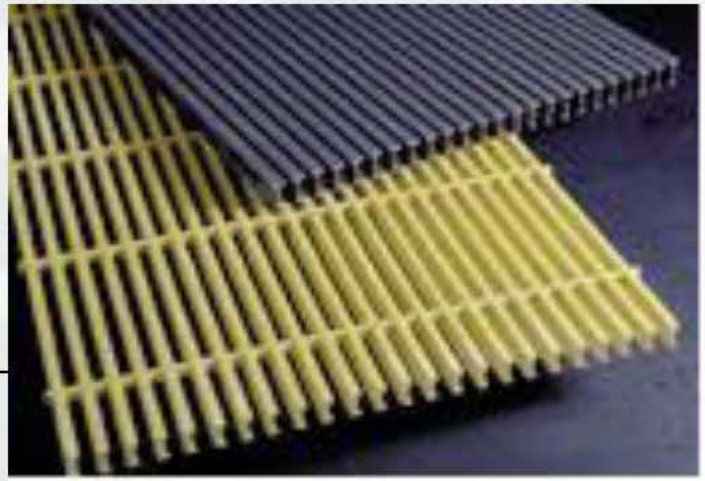
- Dike notching/chutes
- Nature-inspired fish ladders
- Groove articulated concrete mats
- Chevron notching

Upper Mississippi River Restoration Environmental Management Program (UMRR-EMP)

http://www.mvr.usace.army.mil/EMP/designhandbook.htm

Existing EENI Coastal Systems

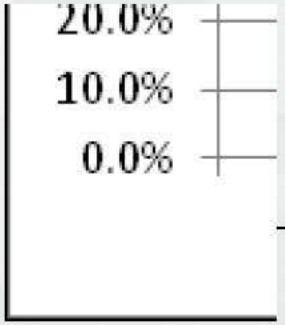
- Pea gravel around toe of breakwater for fish spawning
- Eelgrass planting in anchorage
- Shaped breakwater to create habitat variety
- Light transmitting dock materials



Innovative EENI Ideas

- Modify breakwater toe, rock sizes, cross section, etc. to create habitat variety
- Glue oyster shell to hard structures to encourage colonization
- Add structural modifications (e.g., large woody debris) to provide habitat depth
- Construct nesting platforms for shore birds

Research Needs



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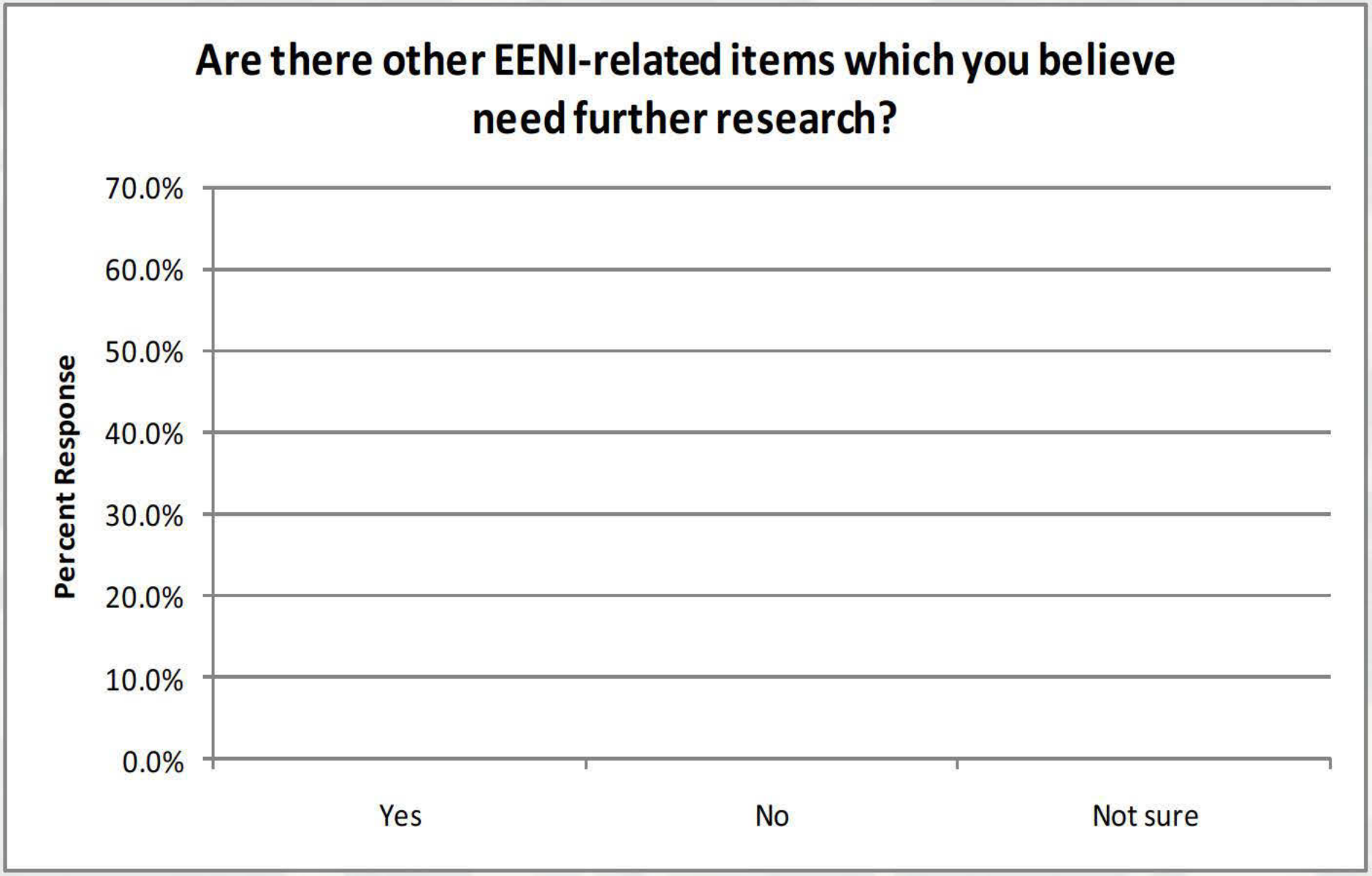

Research Needs

- Document case studies and benefits
- Conduct demonstration projects
- Develop success assessment tools
- Prioritization of sites where EENI might work
- Reduce impediments to implementation

Next Steps

- Promote the EENI concept
- Consider establishing EENI goals
- Conduct national workshop to exchange ideas (August 2011)
- Develop pilot projects of innovative ideas

Products in Progress

- Technical Note: ERDC-EL (Internal)
- Technical Report: ERDC-EL (Internal)
- Journal Article: Integrated Environmental Assessment and Management (IEAM)

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Thanks for your attention!