



DOER FY13 IPR

A Sustainable Design Manual for Engineering With Nature using Native Plant Communities

Dr. Pamela Bailey

- **Problem:**

Native plant communities are often overlooked as an important resource and taken for granted. Impacts to native plant communities such as the loss of habitat, fragmentation, invasive plant species, the loss of pollinators, pollution, disease and changes to the climate will continue to occur, further stressing healthy plant populations and increasing the risks of loss of species.

- **Objective:**

Plant communities in the built environment can provide structure, function and natural processes to create a sustainable landscape.



- **Approach:**

Corps lands offer diverse plant communities providing a palette of native plants for designed elements in the landscape. A Design Manual will summarize principles and provide landscape elements using plant communities.



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- **Project Funding by Year**
 - FY13: 45K
 - FY14: 95K
- **Major Project Deliverables**
 - PMP
 - Sustainable Design Manual by June FY14
 - Article by June FY14
 - Presentation at a major conference (TBD)
- **Benefits**
 - Provide self-sustaining features in the landscape requiring less maintenance and more resilience to natural catastrophic events.
 - Supports natural ecological processes.





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- **Products to be accomplished for FY 14**
 - Complete Sustainable Design Manual
 - Peer- review Article or ERDC Technical Note (To be submitted FY14)
 - Conference Presentation
 - Collaboration with other agencies through Plant Conservation Alliance (PCA)
- **Future Proposed Products for FY15 Products**
 - Webinars featuring a series of Design workshops
 - Expansion of the Sustainable Design Manual (or Supplement)
 - Presentation to the Plant Conservation Alliance (PCA)
 - Web pages



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Outline of Design Manual*:

- **Introduction**
- **Objectives**
- **Existing databases, and sources of expertise and plants**
- **Design Principles**
- **Designs and case studies of implemented designs**
 - **Energy conservation and Climate control (sun, shade, windbreaks)**
 - **Providing security**
 - **Slope stabilization (Biotechnical plantings)**
 - **Water conservation and drainage**
 - **Creating privacy of focus**
 - **Creating habitat for animals**

*** Draft report is in progress**