

Project Development in the Lower Columbia River and Estuary

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**Evan Haas
Habitat Restoration Coordinator, Estuary Partnership**

Outline

- Increased Need for Project Development
- Lessons Learned from past projects
- Restoration Opportunities – Key Questions
- Estuary Partnership's Prioritization Framework
- Fort Clatsop Restoration Project

Increased Need for Project Development

- Increased Focus on the Estuary
 - FCRPS Biological Opinion
 - NOAA Recovery Plans
- Increased Funding for Project Implementation
- Increased scrutiny of restoration efforts

Project Development

- Opportunistic vs. Strategic Approach
 - Proposals in response to funding opportunities
 - Developing projects regardless of available funding
- Importance in Identifying Sites
 - Where restoration **should** occur vs. where it **can** occur

Project Development

- Basic Steps
 - Planning
 - Implementation
 - Effectiveness Monitoring
 - Data Management/Dissemination
 - Adaptive Management

- An Ecosystem-Based Approach to Habitat Restoration Projects with Emphasis on Salmonids in the Columbia River Estuary (PNNL, CREST, EP, BPA, USACE – 2003)

Project Development . . . Lessons Learned

- Background work is vital
 - Community involvement and buy-in is necessary before requesting funding
 - Modeling, surveying, and technical investigations are extremely important in the planning phase
 - To ensure the project will be successful
 - To obtain community support

Lessons Learned Continued

- Expect contingencies
 - Delays in schedules (permitting)
 - Cost overruns
- Projects may change due to any number of reasons

Restoration Opportunities - Key Questions

- Are estuary restoration projects in short supply?
 - Have we exhausted the supply of “low hanging (projects) fruit”? Are “easy to achieve” restoration opportunities still available?

Restoration Opportunities – Key Questions

- How do we remedy the deficit in projects?
- What strategies/partnerships are necessary to develop projects?

Are estuary restoration opportunities limited?

- Some evidence that the “low hanging fruit” type of projects has been exhausted
- Limited number of responses to recent Requests for Proposals
- Lack of proposals located in the mainstem and estuary
- No shortage of tributary projects
 - Lack of projects that have been developed in the context of the larger estuarine ecosystem

How do we remedy the shortage of projects?

- Need to develop the capacity of the region to identify and implement projects
- Organizations Work
 - In specific geographic locations
 - With specific mandates
 - With specific management plans
- Increased funding for outreach efforts

New Types of Projects

- Sediment Management
 - Scrape-down
 - Build-up
 - Notching
- Pile structure removal
- Large scale levee setbacks

Reliance on Regional Plans

- Prioritizing projects / actions in response to ESA recovery plans
- Prioritizing projects / actions in areas that benefit multiple species
- Subbasin plans

Needs

- Ensuring a supply of projects are ready for implementation when funding is available
- Ensuring those projects have been developed in a broad ecosystem context
- Ensuring there is regional capacity to manage the projects

Needs

- Ensuring we can successfully show that past efforts have made a difference
 - Effectiveness monitoring
- Making sure the gains in focus/funding are maintained
- Being able to work in an already developed system that is continuing to undergo development pressures

Estuary Partnership's Restoration Prioritization Framework

- Systematic approach to assessing current conditions of the landscape
- Multi-criteria analysis of several stressors acting on controlling factors
- Controlling factors determine ecosystem functions
- Considers disturbance levels at multiple spatial scales (SITE and LANDSCAPE)
- Relationship between SITE and LANDSCAPE scores guides restoration strategy within individual locations

Conceptual Model

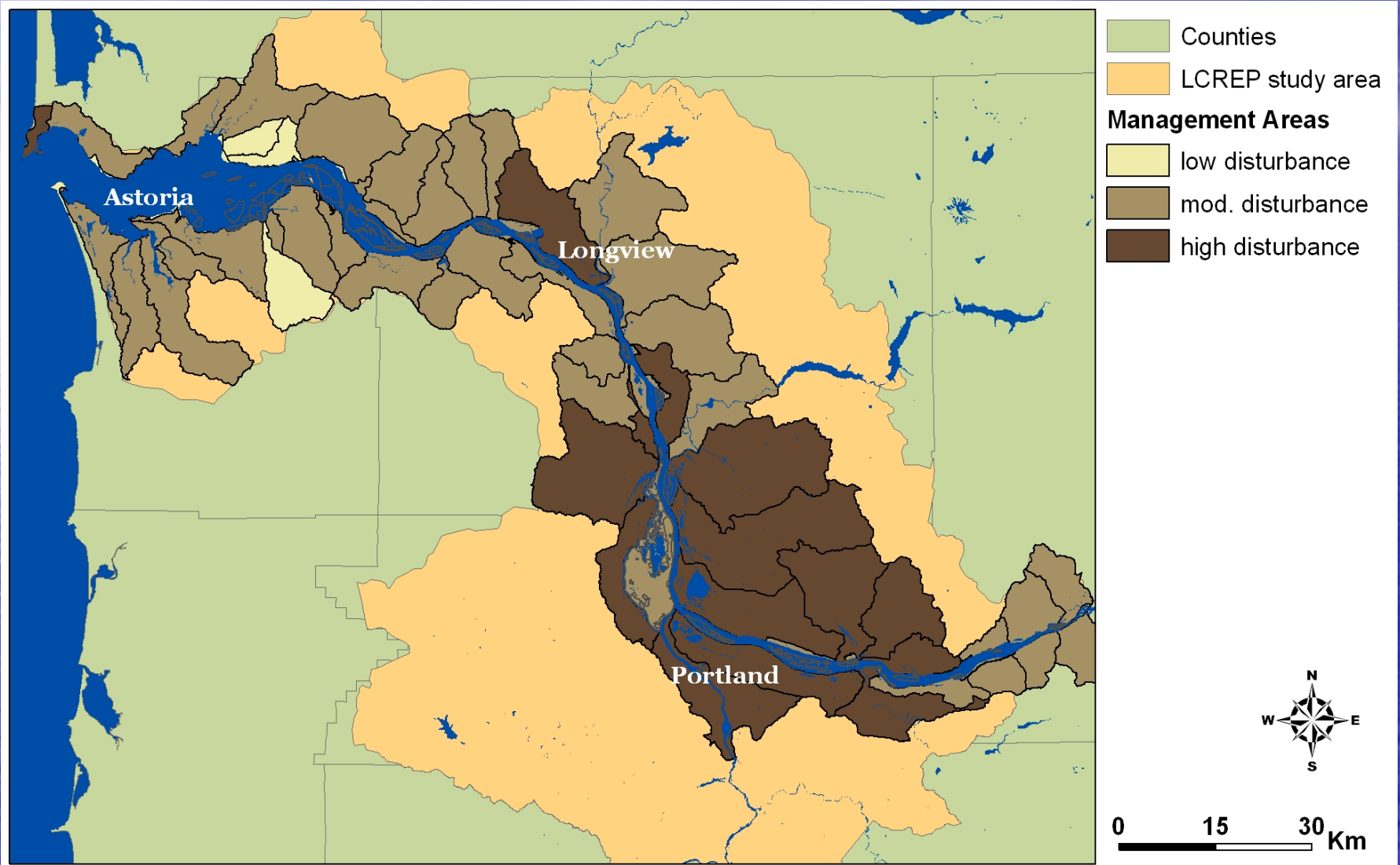


From Williams, G.D. and R.M. Thom (2001). Marine and estuarine shoreline modification issues. Battelle Marine Sciences Laboratory.

- **Controlling Factors – 10**
 - Hydrology, sediment quality, water quality, light, physical disturbance
- **Stressors – 20**
 - Bonneville flow alteration, diking, industrial development, 303(d) listed waterways, flow restrictions, agriculture

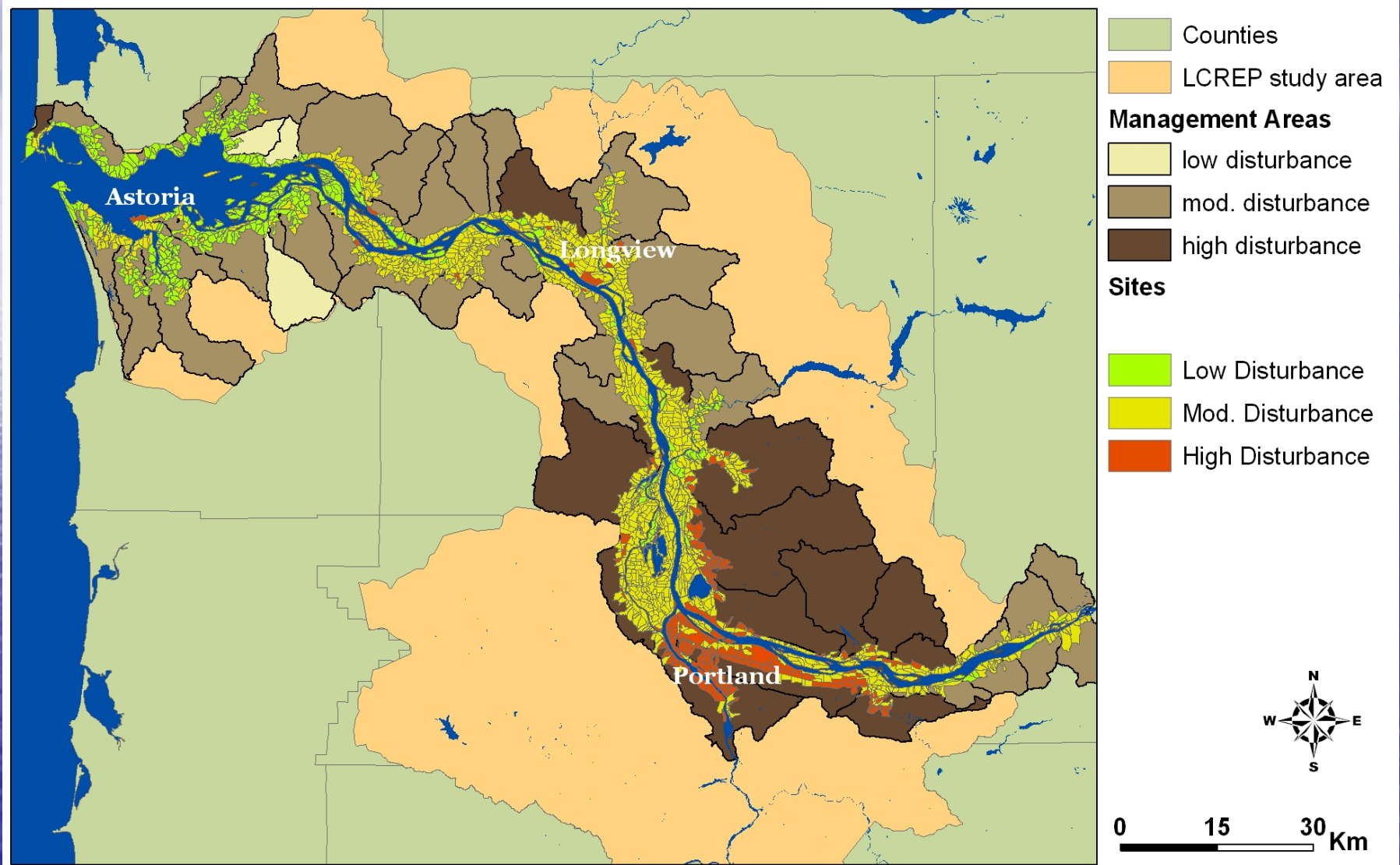
Prioritization Framework

Landscape Scale Rankings (60 Management Areas)



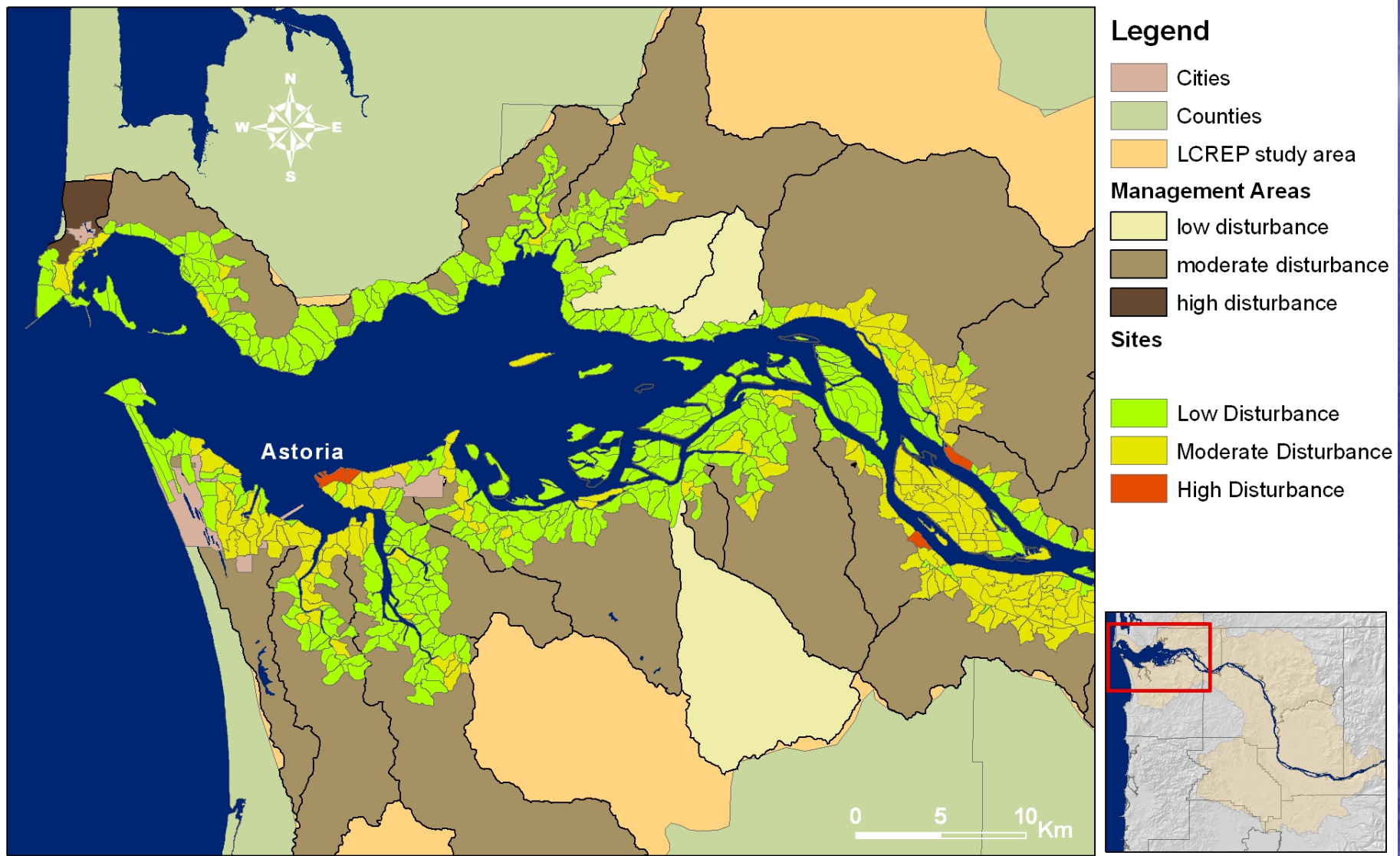
Prioritization Framework

Site and Management Area Rankings (2072 Sites)

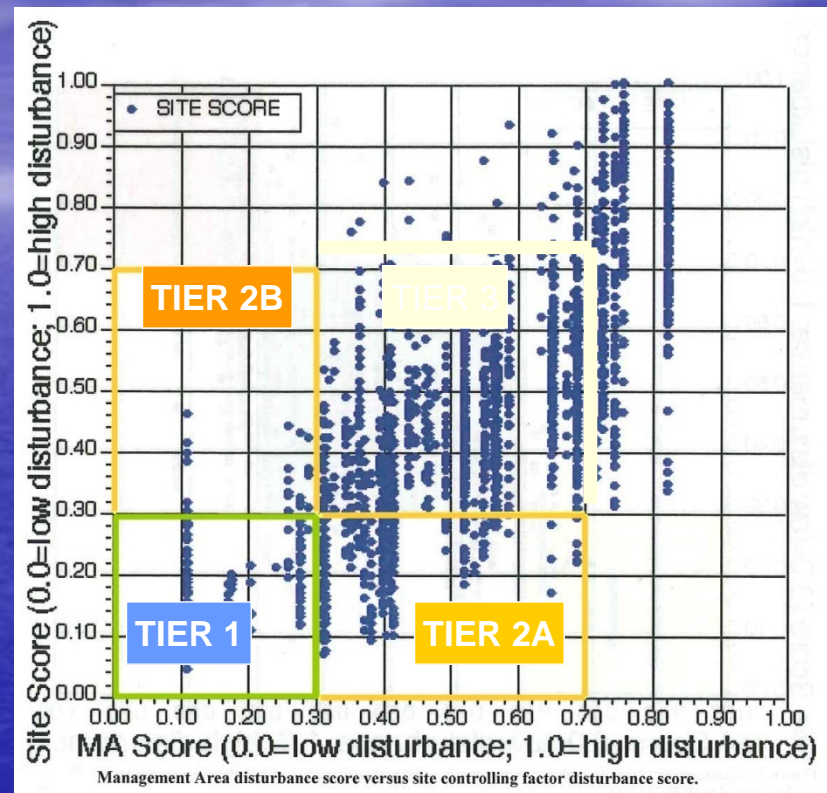
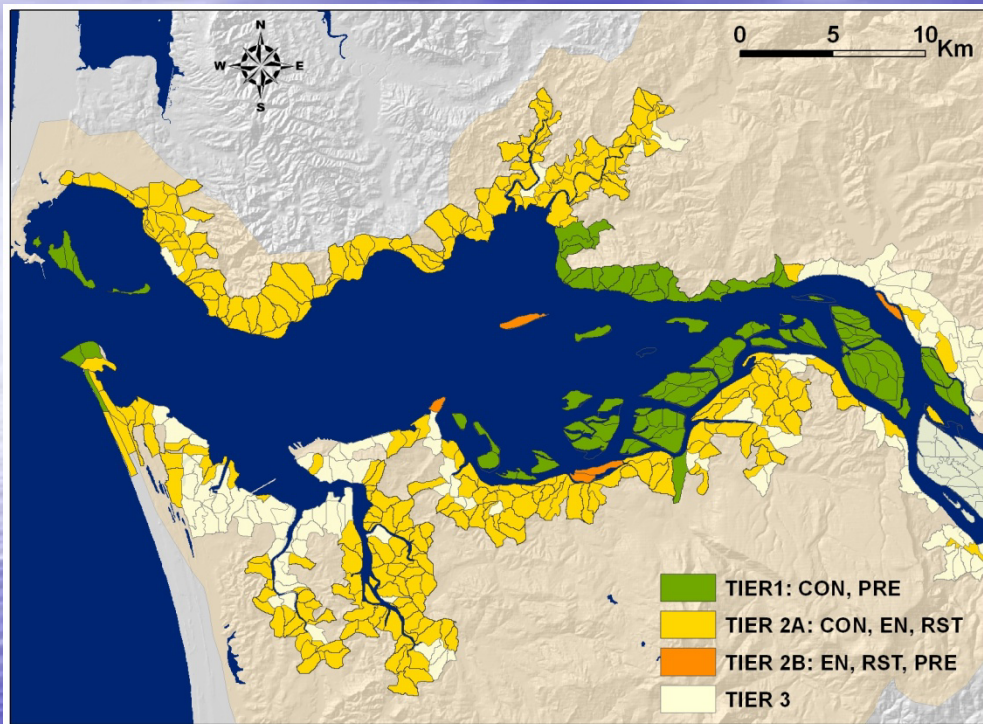


Prioritization Framework

Site and Management Area Rankings



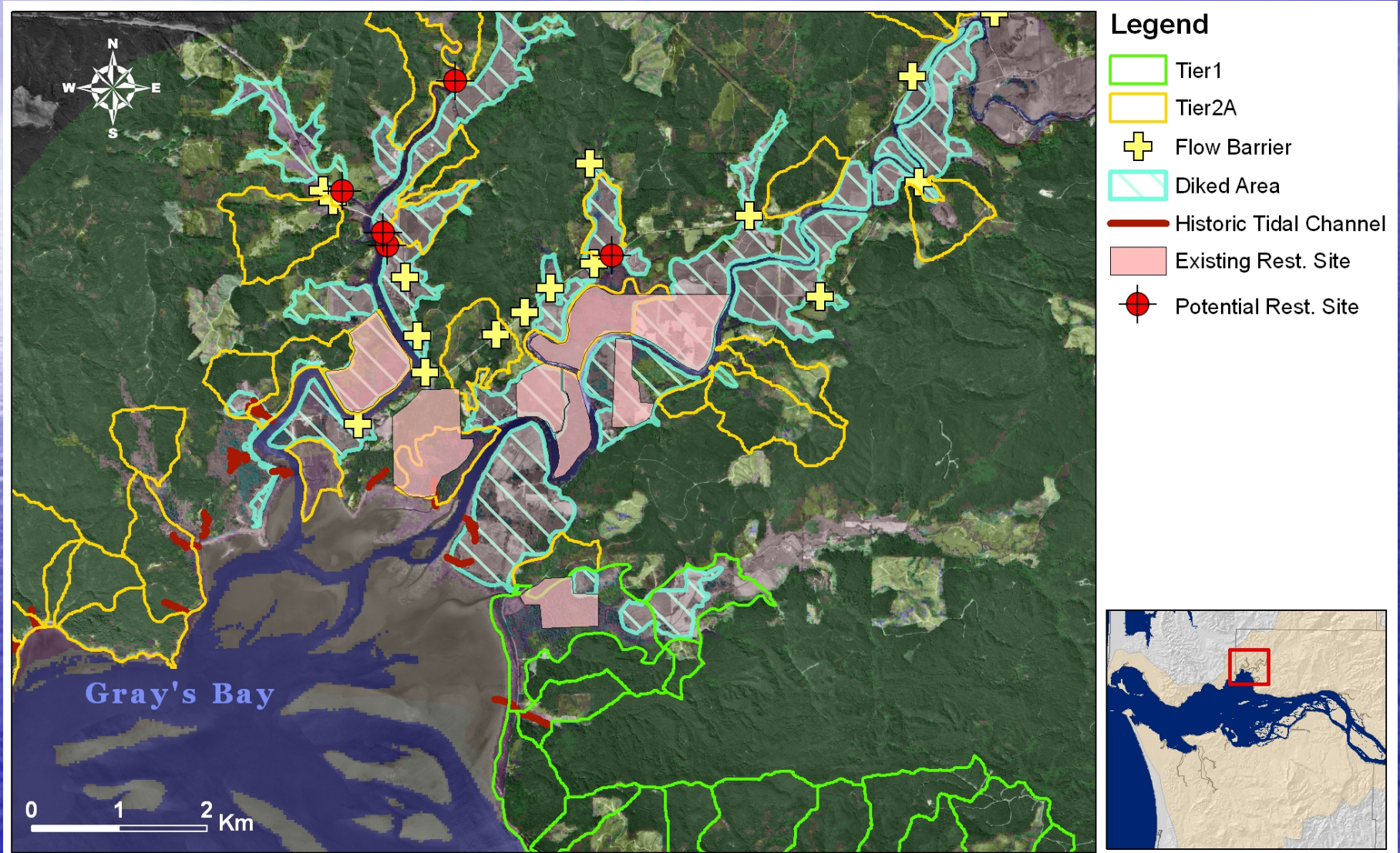
Prioritize Tier 1 and Tier 2 Sites



| <u>Site</u> | <u>Site Disturbance</u> | <u>Landscape Disturbance</u> |
|--------------------|--------------------------------|-------------------------------------|
| Tier 1 | Low | Low |
| Tier 2a | Low | Moderate |
| Tier 2b | Moderate | Low |

Strategic Site Identification

Identified through outreach programs; favorable locations



Future Restoration Prioritization

- Use existing tools to identify projects with high restoration potential
- Improving existing tools and creating new data sets
- Incorporate effectiveness monitoring
 - Results from effectiveness monitoring can be used to develop a more rigorous prioritization framework

Effectiveness Monitoring

- Effectiveness monitoring currently being implemented
 - CREST and CLT
- Increased monitoring efforts planned
- Lack of data; many restoration projects are still relatively new and results may not be evident for years

Effectiveness Monitoring

- Restoration is experimental
- Future success is linked to the success of past projects
- Importance of selecting appropriate locations for restoration projects
 - Reference Sites study
- Monitoring should help guide future project development efforts
 - Determine what works and replicate it

Fort Clatsop Restoration Project

- Project Goal
 - Maximize tidal connectivity between 45 acres of diked pasture and the Lewis and Clark River
- Approach
 - Culvert/tidegate removal
 - Replaced with 46 ft. span bridge

Fort Clatsop – Pre-Restoration



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Fort Clatsop

- Contingency – price of construction materials increased
- Solution – remainder of funding needed was secured
- Result – project was successfully completed

Fort Clatsop – Post-Restoration



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Fort Clatsop Phase II

- Tidal connectivity was maximized
- Effectiveness monitoring is being implemented
- Potential for future restoration actions
 - Monitoring will help managers decide what additional restoration treatments may be beneficial at the site

Ending Thoughts

- Estuary is receiving more attention and more funding
- Need for strategic project development
- Local outreach/support will always be important in project development
- Effectiveness monitoring is vital for project development and implementation