

Guidance For Protection and Restoration of Nearshore Ecosystems in Puget Sound

The Nearshore Science Team of the Puget Sound Nearshore Partnership has crafted a **guidance document** for the development, selection and evaluation of protective measures and projects designed to support recovery of degraded nearshore ecosystems in Puget Sound. While developed specifically for Nearshore Partnership, this document can be useful to other restoration practitioners as well.

Recovery of nearshore ecosystems can best be achieved by reestablishing or significantly improving ecosystem processes — the interactions among physical, chemical and biological elements of an ecosystem. These processes operate at various time scales and magnitudes that are controlled or constrained by various natural and human-driven factors. In Puget Sound's nearshore ecosystems, the main processes that have been disrupted are those involving sediment, water and food webs.

Process-based ecosystem recovery involves implementing projects that make it possible for the system to generate and maintain natural ecosystem processes. In turn, these processes generate desirable ecosystem structures (such as habitats) and important functions (for example, salmon or shellfish production, recreational opportunities and clean water). Because ecosystem processes cross land, water and air boundaries, a major theme of any recovery plan is the connectivity of the nearshore with other freshwater (upstream), terrestrial, shoreline and marine ecosystems. Recovery of the nearshore cannot be disconnected from these other segments of the landscape.

A more detailed discussion of this topic appears in [Guidance for Protection and Restoration of the Nearshore Ecosystems of Puget Sound \(PSNP Technical Report 2004-02\)](#) by Kurt Fresh, Charles Simenstad, Jim Brennan, Megan Dethier, Guy Gelfenbaum, Fred Goetz, Miles Logsdon, Doug Myers, Tom Mumford, Jan Newton, High Shipman and Curtis Tannner. It is available online in a downloadable (pdf) format at www.pugetsoundnearshore.org/material_activity.html#documents.

The Nearshore Partnership guidance document presents a framework for a comprehensive, strategic planning process. Such planning can ensure that proposed actions have been considered within their respective ecological context. It can also help ensure that any recovery actions that are implemented will have a high probability of successfully improving the condition of Puget Sound nearshore ecosystems.



The major elements of a strategic plan are as follows:

- Define goals and objectives
- Develop and use a conceptual model
- Identify impaired ecosystem processes
- Create spatially explicit restoration and protection strategies
- Obtain knowledge of critical biota
- Identify appropriate actions for habitat protection and restoration
- Prioritize actions
- Develop performance measures
- Use adaptive manage to guide recovery
- Develop and implement a detailed monitoring plan

Creation of a strategic plan and process-based models will take several years. Nonetheless, the degraded condition of portions of Puget Sound suggests a compelling need to implement some recovery actions *before* these products are completed. “Early action” projects should contain carefully targeted activities with high degrees of certainty in their ecological benefits. They should carry a low risk of irrevocable damage and, most importantly, offer opportunities to generate needed information about how to protect and restore the Puget Sound nearshore.

The following criteria can help select projects over the near term:

- Does the project have clearly stated goals and objectives and are they appropriate for ecosystem recovery?
- Does the project have a conceptual model?
- Does the project contribute significantly to our understanding of nearshore ecosystems or how to restore them?
- How likely is it that the project will have significant ecological benefits?
- What is the landscape context of the project?
- Does the project incorporate habitats important to key biota?
- Is the project part of a larger restoration plan or portfolio of recovery actions?
- What are the relationships among uncertainty, risk, expected ecological benefits, and learning for the project?
- What are the costs of the project relative to other factors?

Photo, opposite side: South Fork of the Skagit River, Washington is an example of a large estuarine delta. Courtesy of Hugh Shipman, Washington Department of Ecology.

- Is the project sustainable within the context of the expected natural evolution of the target ecosystem?
- Does the project have clear performance measures?
- Does the project have a rigorous monitoring plan?
- Does the project include adaptive management and a contingency plan?
- Do partnerships exist among communities, organizations and agencies that may be involved in the actions and have ownership of the land?

The Puget Sound Nearshore Partnership is a large-scale initiative that affords unique opportunities to address some of the foremost habitat restoration needs in Washington state’s Puget Sound basin. Partners include the U.S. Army Corps of Engineers, Washington Department of Fish and Wildlife, other federal and state government organizations, tribes, industries and environmental groups. Nearshore Project goals are to identify significant ecosystem problems, evaluate potential solutions, and restore and preserve critical nearshore habitat, including bluffs, beaches, shorelines, mudflats, salt marshes, gravel spits and estuaries.

PUGET SOUND NEARSHORE PARTNERSHIP



**RESTORING OUR
ECOSYSTEM HEALTH**

For more information, please visit the Nearshore Partnership web site: www.pugetsoundnearshore.org

For additional information or to receive a copy of this report, send an e-mail to info@pugetsoundnearshore.org or contact:

Bernie Hargrave,
Federal Project Manager
U.S. Army Corps of Engineers
206.764.6839

Bernard.L.Hargrave.Jr@usace.army.mil

Curtis Tanner, Local Project Manager
Washington Department of Fish and Wildlife

360.902.2815

tannecdt@dfw.wa.gov