

# Shoreline Armoring Alternatives Project

## SUMMARY REPORT



Prepared for:

Jefferson County



Marine Resources Committee

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# Acknowledgements

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## Jefferson County Marine Resources Committee

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## Summary

According to a comprehensive survey by shoreline section, Jefferson Co. has virtually no shoreline segment free of armoring (Harrington 2005). Scientists have long known that these structures can impact important shoreline dynamics and cause alteration and loss of critical nearshore and upland habitat. In cases where there exists a need to prevent erosion, there may be more environmentally friendly, “soft” structures that can be effective. Over the past two years, the MRC has learned that providing site assessment and conceptual design for bulkhead removal and beach restoration is a much needed role in partnering with other entities involved in shoreline restoration. It is also an essential piece in securing moneys from other grant sources.

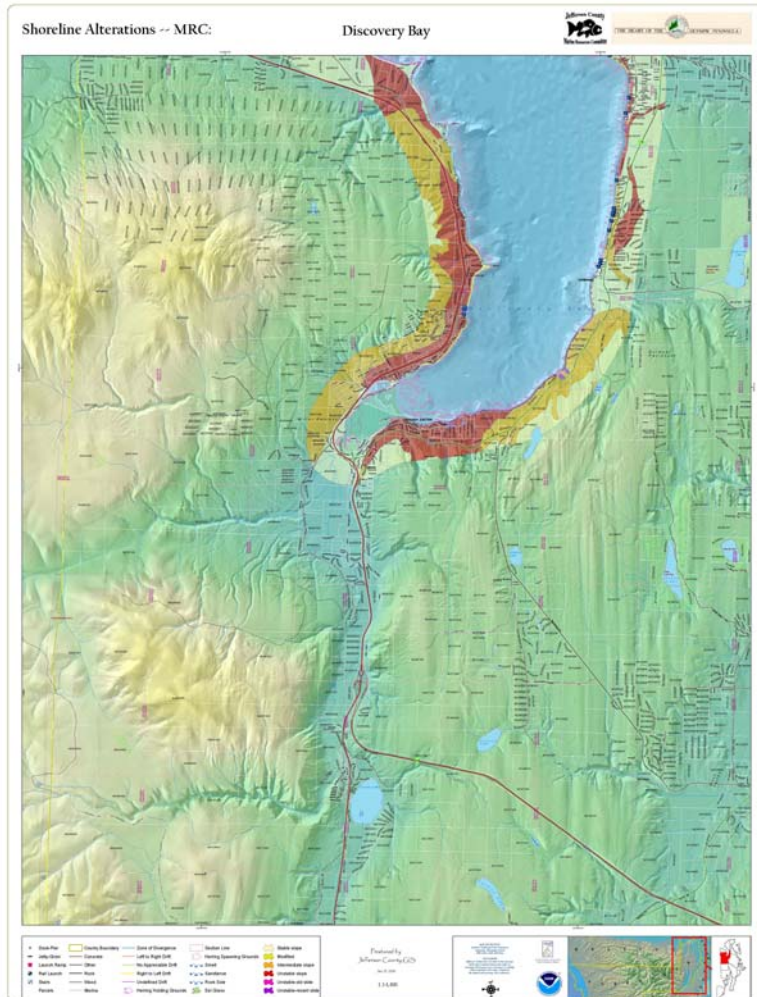
## Background

According to a comprehensive survey by shoreline section, Jefferson Co. has virtually no shoreline segment free of armoring and a number of areas where armoring exceeds 15% of the shoreline (Harrington 2005). Over the years, shoreline property owners in Jefferson County have constructed bulkheads and other shoreline hardening structures along County shorelines. Scientists have long known that these structures can impact important shoreline dynamics and cause alteration and loss of critical nearshore and upland habitat. Shoreline hardening structures become a barrier between the uplands and the nearshore region, causing a number of negative effects, including changing the coarseness of the beach substrate, changing the slope of the intertidal area, causing accelerated impacts to neighboring properties, and preventing large logs and other woody debris from forming a natural ‘soft’ armor.

In Jefferson County, shoreline owners have placed bulkheads for a variety of reasons. Not only are they placed as an effort to prevent perceived erosion of their property, but bulkheads are also built to give a more manicured edge to a lawn or protect a stair structure from being battered by waves. In addition, placement of bulkheads tend to cause adjacent property owners to decide to build there own, causing a proliferation in an area where they might never have been needed. Even in cases where there exists a need to prevent erosion, there may be more environmentally friendly, “soft” structures that can be effective.

In 2005, the Jefferson MRC initiated a 2-year project to identify and evaluate shoreline structures, survey the regulatory framework and initiate demonstration projects for soft shore protection. This report summarizes the results of the project.

## Evaluation of Shoreline Structures



Discovery Bay Panning Area Map

The MRC acquired GIS data for Eastern Jefferson County on shoreline armoring and habitat based on the Point-no-Point Treaty Council's data. This data had been further "massaged" and field checked by the Jefferson County Department of Community Development in preparation for the update of the County's Shoreline Master Program.

Using this data, the MRC produced maps of the county's shorelines showing armoring, other alterations (stairs, etc.) and relevant habitat layers. 17 planning area maps as well as 221 section maps were produced on CD-ROMs (see appendices A and B). The committee used these maps to evaluate potential sites for demonstration projects and also used them as part of the education and outreach strategy.

Discovery Bay Panning Area Map

The Armoring project committee continued to review the draft Shoreline Master Plan Inventory and Characterization Report as revisions became available to help identify and evaluate potential demonstration project sites.

The Armoring project committee



## Survey of Current Policies

The MRC conducted informal discussions with County and City staff regarding tools to manage shoreline armoring. The results of these discussions indicated that there is much discretion regarding the permitting of armoring structures particularly if 1) the primary structure (typically a residence) on the property is threatened by erosion or, 2) the proposed structure is above Mean Higher High Water.



Jefferson County Shoreline Master Program Workshop, March 2007

The second case is particularly of concern because it is in many cases not necessary to protect a residence. And, although on its face a bulkhead above MHHW is less immediately damaging to habitat, the longer-term impacts as a result of sediment starvation to the drift cell and consequently the beach complex eventually will result in degraded habitat.

The MRC then shifted its focus to participating in the update of the County's Shoreline Master Program to ensure that appropriate policies are adopted.

As of June 2007, the update to the County's Shoreline Master Program has been extended. The MRC maintains both staff and volunteer participation in this process.

## Outreach & Education

### *Marine Shoreline Landowner Workshops*



JCDCD, Conservation District, MRC, PSAT and WSU plan Workshop field trips, August 2006.

The MRC partnered with Puget Sound Action Team (PSAT), Hood Canal Coordinating Council (HCCC), North Olympic Salmon Coalition (NOSC), Jefferson County Department of Community Development (JCDCD), WSU and others to hold two Marine Shoreline Landowners Workshops on September 30 and October 14, 2006. Planning for the workshops included the development of a shoreline armoring map presentation, fact sheets and identification of speakers. All marine shoreline landowners received direct mail invitations to attend these workshops.

The purpose of the Workshops was to educate residents about the current Shoreline Master Planning, Shoreline

Landowners Management Practices, and Shoreline Soft Armoring Alternatives (MRC). Shoreline landowners received direct mail invitations to attend these workshops. The MRC used these educational venues to solicit landowner interest in participating in a shoreline armoring alternatives demonstration project.

Two additional Marine Shoreline Landowners Workshops were held on June 26, 2007 at Cape George Clubhouse on Discovery Bay. The purpose of these workshops was to follow-up on the previous ones by presenting more specific information on habitat, nearshore, and what individual landowners can do to steward their property. Maps of Jefferson County shoreline armoring and related structure were presented by the MRC.

### *Ongoing Project Outreach*

Outreach to potential project partners in a demonstration project continued through

- attending monthly Chumsortium/SSTAG meetings,
- informational booths at two Earth Day events, 2007, and coordination with the Permit Center of the Jefferson County Department of Community Development to offer project applicants and opportunity to participate in a shoreline armoring alternatives demonstration project.

## Demonstration Project Plans

The MRC contracted the services of Jim Johannessen d.b.a. Coastal Geologic Services, inc. to conduct site feasibility and preliminary assessments for the sites listed below. Conceptual designs were to be created for the remaining sites, as landowner permission and feasibility allows, as follows:

- A. Fairmount Marsh – conceptual design of bulkhead removal, riprap removal, beach restoration, marsh saltwater connection – approx. 800’ ft. long reach of coast and options for soft armoring of bank below vacation rental – approx. 100’ ft. long reach of coast. A very preliminary site feasibility and analysis of the potential impacts of the project on the adjacent shellfish beds will be prepared as an initial step for the purpose of informing the landowner and obtaining landowner commitment to the project.
- B. Oak Bay County Park East (Indian Island) - approximately 200-300 ft. long reach of coast that extends along the beach at the end of the park access road/ parking area.
- C. Oak Bay County Park West (Hadlock side) - approximately 1,100 ft. long reach of coast that extends the full length of the Oak Bay shore of the park.
- D. Tarboo - approximately 300 ft. long reach of coast that extends along the beach at the end of Dabob Post Office Road.

Fairmount Project: Members of the MRC, WSU staff, and Jefferson Conservation District staff continued to work together and with the Fairmount Marsh property owners to discuss the feasibility of removing the abandoned railroad grade fill and reconnecting the fresh water marsh to the salt water estuary. We met again with the landowners, but one landowner who had not been present at previous meetings is unwilling to consider moving ahead with the project. A scaled project is included for one of the properties in the report prepared by Jim Johannessen. As a result more effort was placed on the remaining sites, particularly Oak Bay County Park East (Indian Island). Johannessen’s report was submitted as separate deliverable and is not included in this report.

## Conclusion

Over the past two years, the MRC has learned that providing site assessment and conceptual design for bulkhead removal and beach restoration is a much needed role in partnering with other entities involved in shoreline restoration. It is also an essential piece in securing moneys from other grant sources. Over the next two years, the MRC will continue to provide public education and outreach, participate in the update to the Jefferson County Shoreline Master Program, and provide technical assistance to marine shoreline landowners who are interested in taking a soft shore approach to protection from erosion.



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## Appendices

- A – Planning Area Maps (on CD)
- B – Section Maps (on CD)