



How Blue Carbon Can Increase the Conservation and Restoration of Eelgrass: Policy Mechanisms & Future Action

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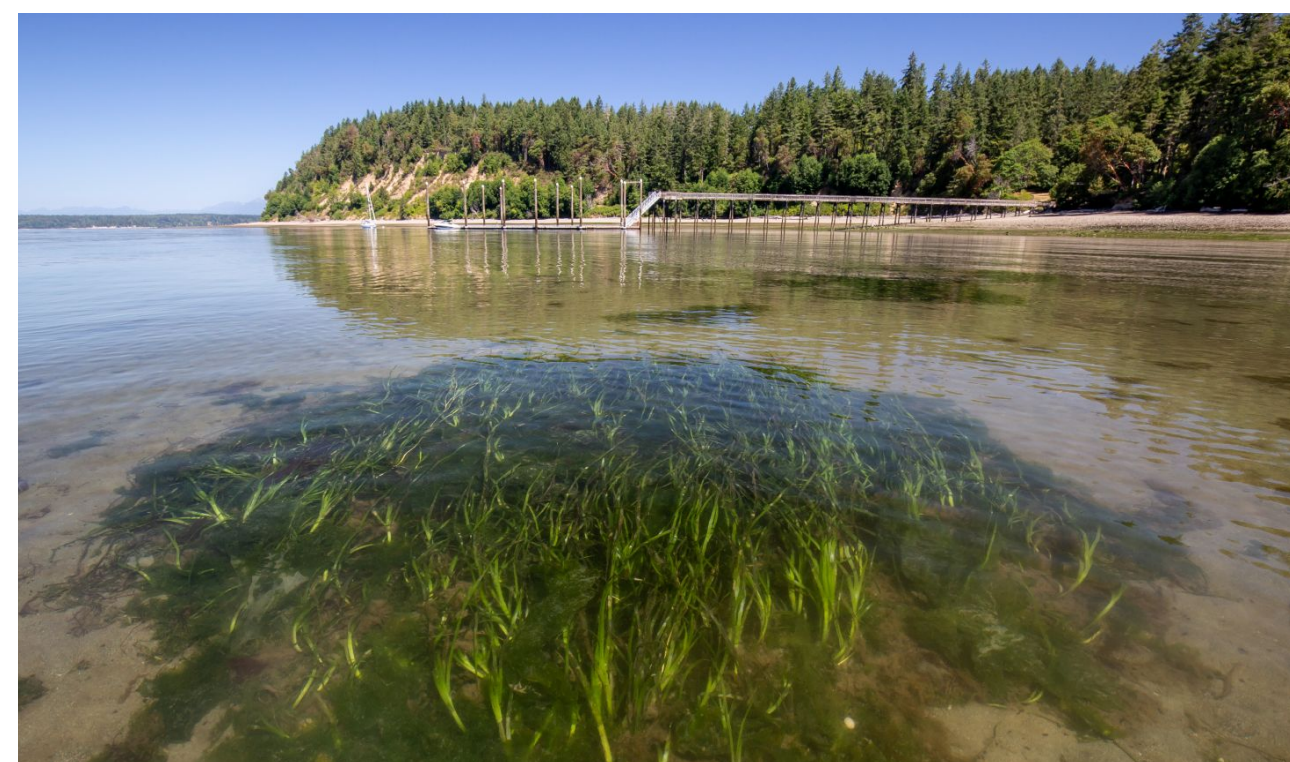
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Background

- Eelgrass provides vital ecosystem services, including the ability to sequester and store carbon, a service referred to as blue carbon.
- To avoid the worst consequences of climate change, we need to remove carbon from the atmosphere.
- Eelgrass is experiencing long-term declines across Washington State.
- Blue carbon policy development should be explored as a tool to increase the conservation and restoration of eelgrass.

Figure 1: A restored eelgrass bed in the Puget Sound. Image via Washington State Democrats 2022.



Research Questions

Can eelgrass blue carbon incentivize its conservation and restoration in Washington State?

If so, what blue carbon policy mechanisms will most effectively increase its conservation and restoration?

Internships & Methods

- Blue carbon policy intern with the **Washington State Department of Natural Resources**.

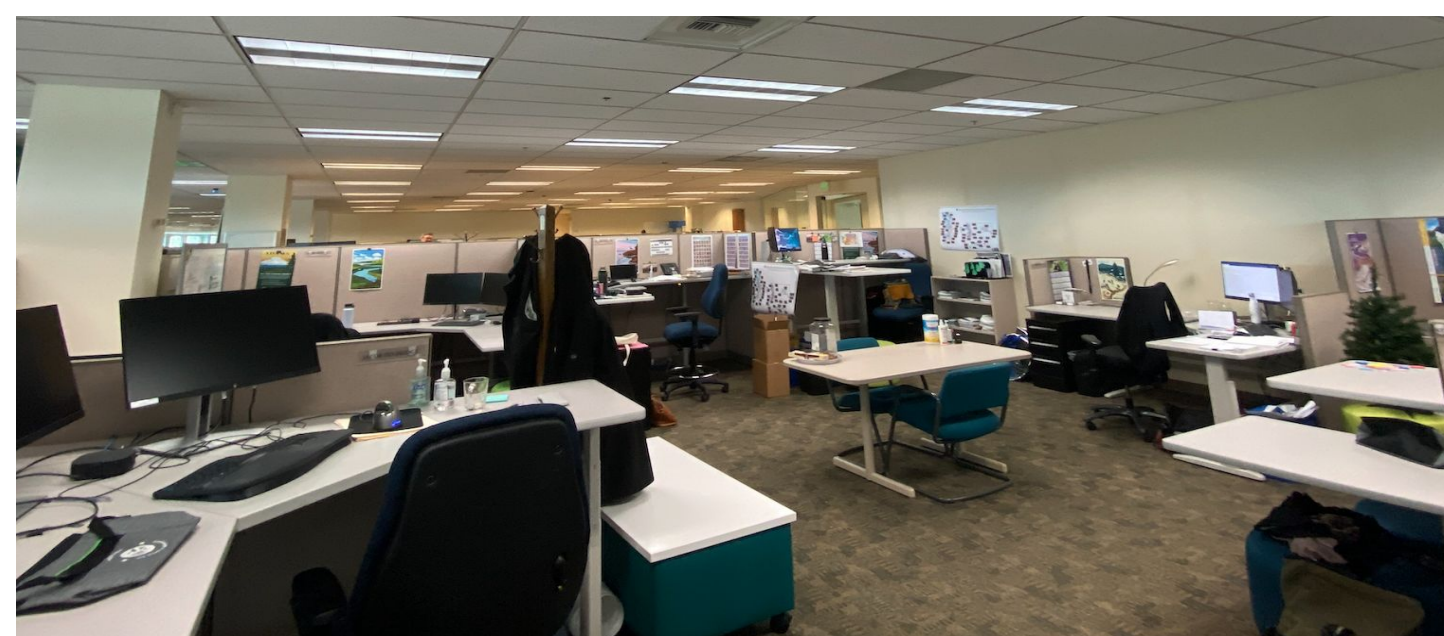


Figure 2: A sneak peek into the DNR Office in Olympia, WA.

Internships & Methods (cont.)

- Researched current knowledge of eelgrass blue carbon in the Pacific Northwest, best practices for blue carbon projects, and blue carbon policies.
- Facilitated conversations with kelp, eelgrass, and blue carbon experts.
- Conducted case studies on the Snohomish and Skagit Estuaries and compared eelgrass blue carbon values to a terrestrial ecosystem.

Blue Carbon Case Study

Snohomish Estuary

- Stable population with site species area of approximately 912 hectares.
- Eelgrass beds in Snohomish County sequester approximately 226 metric tons of organic carbon (OC) per year and store approximately 65,400 metric tons of OC in the upper 1m of sediment.

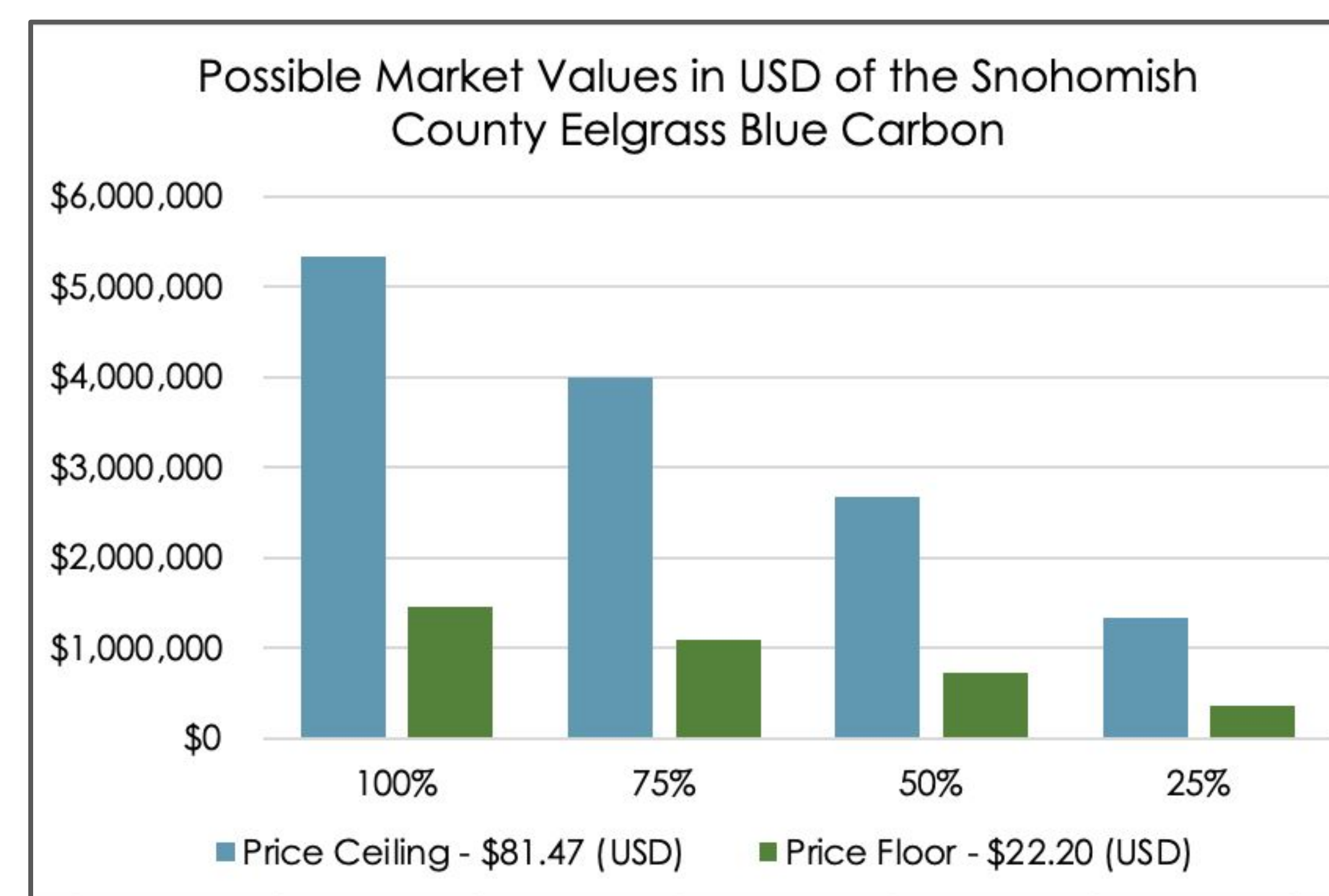


Figure 3: Shows the potential market value of eelgrass blue carbon in Snohomish County. The blue bars were calculated using the price ceiling and the green bars using the price floor of one metric ton of carbon set by the Washington State Legislature. The x-axis presents the possible percentage of OC stored due to the presence of eelgrass versus non-eelgrass related sources.

Findings

Blue Carbon Potential

- Eelgrass stores carbon naturally over a long timescale.
- Potential to generate approximately one-third of the carbon offset credits generated by a Washington State terrestrial ecosystem.

Policy Mechanisms

- Sell carbon offsets through Washington State's Carbon Offset Program or the voluntary carbon market.
- Place a monetary value on ecosystem services to be used in policy-making spaces and cost-benefit analyses.

Implications

To utilize these policy mechanisms, these preconditions must be met...



Anticipate long-term environmental changes.



Implement a standard methodology for blue carbon projects.



Provide funding for future blue carbon research.

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