

SAVING BIG EDDY

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EXECUTIVE SUMMARY

The Juan de Fuca Eddy, or “Big Eddy,” supports a unique variety of organisms, including whales, sea otters, salmon, kelp, and corals, through its distribution of upwelled nutrient-rich waters. It lies both in Canadian and USA waters, and for its complete protection, cooperation between Canada and the USA should be utilized to form an effective international protected area.

INTRODUCTION

Is Big Eddy a person? No – Big Eddy is a seasonal large ocean eddy off the coast of Washington and Vancouver Island (Figure 1). Through upwelling, deep water nutrients are brought to the surface of the ocean along the coast, and Big Eddy circulates these nutrients widely amongst many diverse habitats, creating an extremely productive area. Because of this, the area is home to over 15 species of whale, migratory and local seabirds, many fish species, mammals, and corals. This incredible productivity allows for varied use, including fishing, recreation, and shipping.

Big Eddy encompasses a substantial portion of both USA and Canadian coastal waters. The USA portion is protected under the Olympic Coast National Marine Sanctuary (Figure 2), and the Canadian side is minimally protected by the small area of coastal protection served by the Pacific Rim National Park. For effective conservation of the area, a holistic approach should be taken where international protection encloses the entire network of ecosystems.



Figure 1. Map showing the location and breadth of the Juan de Fuca Eddy (Big Eddy). As shown, the Canada/USA border splits Big Eddy roughly in half.

APPROACH

Big Eddy lies in an area that is subject to many human pressures, including bottom trawling of benthic habitats, impacts from commercial and recreational fishing, discharges by ships of ballast, and acoustic disturbances from military operations. Along with these existing disturbances, there are some likely future disturbances in the works, including off-shore aquaculture and oil/gas drilling. Already, there are visible impacts of these stressors; there have been losses in rockfish, salmon, and orca populations, harmful algae blooms, and destruction of coral by trawling. Protective action should be taken to mitigate these harmful stressors on an incredibly diverse region of our ocean.

RESULTS AND CONCLUSIONS

Through research of the Juan de Fuca Eddy International Marine Ecosystem Initiative created by CPAWS, it has become increasingly heartening to observe how various groups have committed themselves to the protection of Big Eddy. NGOs, First Nations, and government representatives are involved, amongst others. For an international “peace park” to be established,

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policy-makers both in Canada and in the USA must be involved in the process.

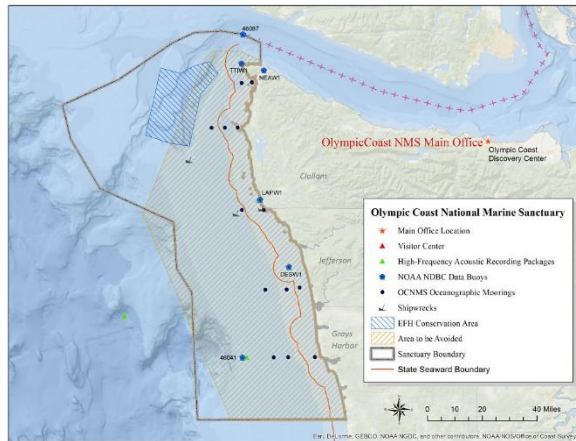


Figure 2. Existing USA Olympic Coast National Marine Sanctuary, which contains half of Big Eddy. Image obtained from sanctuaries.noaa.gov

IMPLICATIONS AND RECOMMENDATIONS

If action is not taken, ecological stressors will continue to negatively impact the diverse collection of ecosystems that reside within Big Eddy. Further impacts on the area could impact whale migration, salmon stocks, and cause increasing harmful algal blooms. To prevent further harm from occurring, international cooperation between Canada and the USA should be encouraged to form a strong, effective peace park for Big Eddy, involving First Nations including Nuu-chah-nulth and Makah Tribes as well as those along coastal Washington, Oregon, and the West Coast of Vancouver Island.

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