

Appendix 11: Draft Dataset description – Samish

Puget Sound Vital Signs Floating kelp canopy area indicator: dataset description

Samish Indian Nation kelp canopy aerial surveys
Last updated: May 13, 2022

1. Introduction

In 2020, the Puget Sound Partnership added a new *floating kelp canopy area* indicator to the [Puget Sound Vital Signs](#), in recognition that kelp forests are foundations for diverse and productive ecosystems. The indicator fills gaps in scientific information about the condition of floating kelp canopies. It also serves as a communications tool for sharing information with the public.

Floating kelp canopy area indicator results will be available on [Puget Sound Info – Vital Signs](#) in June 2023. Detailed indicator information will be available on the [Puget Sound Floating Kelp Hub Site](#).

Summarized indicator results will be presented on the web sites in a format targeted for broad audiences. In addition, three types of technical documents describe the indicator in detail: (1) indicator assessment procedures, (2) sub-basin reports, (3) dataset descriptions which can be found on the [Puget Sound Floating Kelp Hub Site](#).

The purpose of dataset descriptions is to provide key information about datasets that are synthesized in the floating kelp canopy area indicator, including considerations related to dataset integration. Dataset descriptions are not meant to replace detailed metadata, which is available directly from the data owners/maintainers (links below).

This document describes the Samish Indian Nation kelp canopy aerial surveys (Fig. 1).

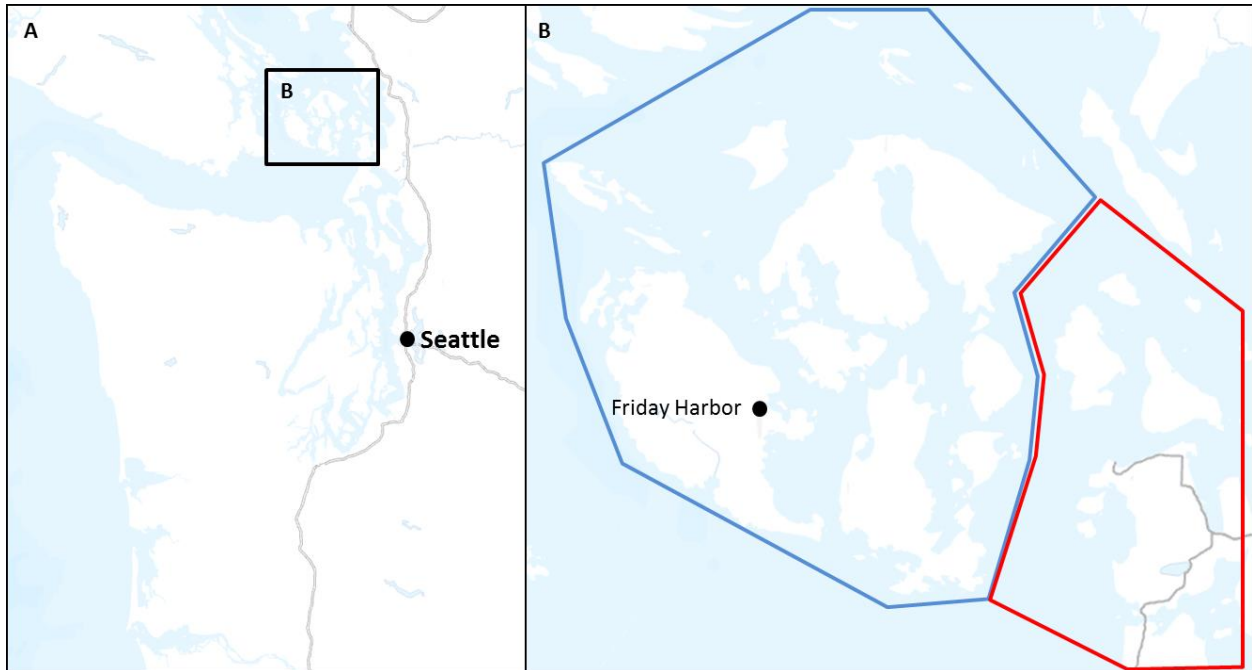


Fig. 1: Location of Samish Indian Nation kelp canopy aerial surveys. Blue polygon in panel B represents the approximate 2004/2006 and 2016 survey area. Red polygon in panel A represents the approximate additional survey area in 2019.

2. Dataset description

2.1 Summary

The Samish Indian Nation delineated floating kelp beds using aerial photography in San Juan County in 2004/2006, 2016 and 2019. In addition, they classified Skagit County and shorelines in 2019 using similar processing methods.

2.2 Description

Spatial extent	San Juan County (SJC), Skagit County (SC). Figure 1.
Metric(s)	Kelp bed area (GIS polygons)
Assessment Units	Comprehensive delineation within the study area
Survey years	2004/2006 (SJC only, Western portion in 2004 and eastern portion in 2006), 2016 (SJC only), 2019.
Frequency	Infrequent annual
Methods summary	<p>Beds were delineated to encompass areas with floating kelp canopies (including gaps within the canopy and rocks) using on-screen digitizing of aerial photography. Detailed methods are available from the Samish Indian Nation.</p> <p>Aerial imagery sources:</p> <ul style="list-style-type: none"> - 2004-2006 aerial photography: low-tide, color-infrared 9" x 9" negatives collected during joint DNR-Friends of the San Juans project. (Berry 2007). These photographs were originally used for surface canopy delineation using semi-automated classification of spectral band data. - 2016 and 2019 aerial photography: 6" resolution color imagery collected by Pictometry for San Juan County during May/June 2016. Variable tide and current levels. - 2019 photography from SC was collected at a different time than SJC photography
Accessibility	<p>The 2006, 2016, and 2019 Samish aerial kelp surveys are generated and maintained by the Samish Indian Nation and are used here with permission. Access to raw data (including GIS files) can be done with a request to the Samish Indian Nation (contact).</p> <p>Samish Indian Nation kelp Story Map: Palmer-McGee 2021</p>

2.3 Considerations for integration in the Floating Kelp Canopy indicator

The 2006, 2016, and 2019 Samish aerial kelp surveys provide a valuable comprehensive dataset of canopy kelp distribution in the region. However, the 2016 and 2019 surveys were not controlled for tides and currents. Tides and currents are known to have a large effect on amount of viable/detectable kelp (Britton-Simmons et al. 2008). Therefore, interpretation among years were interpreted with caution.

3. References

Britton-Simmons, K., Eckman, J. E., Duggins, D. O. 2008. Effect of tidal currents and tidal stage on estimates of bed size in the kelp *Nereocystis luetkeana*. Marine Ecology Progress Series 355: 95–105. doi: 10.3354/meps07209

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