Appendix 8: Draft Dataset description – DNR Boat

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

Department of Natural Resources floating kelp presence surveys (DNR-Boat)
Last updated: April 14, 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 Washington Department of Natural Resources central and south Puget Sound floating kelp presence data (Fig. 1).

2. Dataset description

2.1 Summary

In South Puget Sound (SPS) and Central Puget Sound (CPS), recent comprehensive surveys identified shorelines with floating kelp, which are uncommon in these basins (in 2013 and 2017 in SPS, and 2019 in CPS). Both surveys recorded floating kelp presence along the -6 m subtidal bathymetry line, with a minimum threshold of a single individual. Both studies were paired with a multi-decadal synthesis of diverse data sources to summarize the presence/absence of floating kelp within 1 km shoreline segments. In SPS, the study noted presence, while in CPS presence was further categorized into abundance classes, ranging from isolated individuals to wide beds.

2.2 Description

Spatial Extent:	Central Puget Sound and South Puget Sound
Parameters	Floating kelp presence (linear data). Abundance classes (Central Puget Sound only).
Metric(s)	Comprehensive within study area
Survey years	2013 and 2017 (South Puget Sound), 2019 (Central Puget Sound)
Frequency	Infrequent
Methods summary	Collected field observations of floating kelp presence by motoring along the shoreline in a small boat, in shallow water during low tide and slack currents. Summarized presence/absence by segmenting -6 m bathymetry contour. Minimum threshold for detection: a single individual. In Central Puget Sound, observations were further sub-divided to describe abundance, ranging from isolated individuals to wide, conspicuous beds.
Access	All survey data is maintained by the Nearshore Habitat Program, in the Washington Department of Natural Resources (nearshore@dnr.wa.gov). Information: SPS (report), CPS (presentation)

2.3 Considerations for integration in the Floating Kelp Canopy indicator

For the South Puget Sound sub-basin assessment, data from this survey was considered as part of the long-term analysis in Berry et al. 2021. The Central Puget Sound sub-basin assessment is not yet complete.

2.4 References

Berry, H., Calloway, M., & Ledbetter, J. (2019). *Bull Kelp Monitoring in South Puget Sound in 2017 and 2018.* Nearshore Habitat Program, Washington State Department of Natural Resources. https://www.dnr.wa.gov/publications/aqr_nrsh_bullkelp_sps_2019.pdf

Berry HD, Mumford TF, Christiaen B, Dowty P, Calloway M, Ferrier L, et al. (2021) Long-term changes in kelp forests in an inner basin of the Salish Sea. PLoS ONE 16(2): e0229703. https://doi.org/10.1371/journal.pone.0229703