

Peter Best

From: Daleydesign@seanet.com
Sent: Saturday, March 14, 2020 11:18 AM
To: David Greetham
Cc: 'Cheryl Coon'
Subject: FW: shoreline permit PLN5028033DP
Attachments: Poster 42 (Final).pdf

Dave:

Please include this document with my previous submittal.

Thanks for your help

Wayne Daley

An Update on the Integration of City of Bainbridge Island/Suquamish Tribal 2002 – 2008 Beach Seining Results into Shoreline Management & Salmon Recovery Efforts



Paul Dorn, Suquamish Tribe
Colin Spikes, City of Bainbridge Island
Peter Namtvedt Best, City of Bainbridge Island



Introduction: Puget Sound estuarine and nearshore habitats support a rich assemblage of numerous vertebrates, invertebrates, and marine algae. This habitat is important to the recovery of listed Puget Sound salmon populations which depend, in part, upon the quality of these marine habitats. The City of Bainbridge Island (COBI), Suquamish Tribe (Tribal), and Washington Department of Fish and Wildlife (WDFW) have partnered since 2002 on a beach seining study of fish populations utilizing most shorelines of Bainbridge Island, WA. This poster presents some information collected during the study. Additional analysis and information will be provided in a forthcoming 2009 paper.

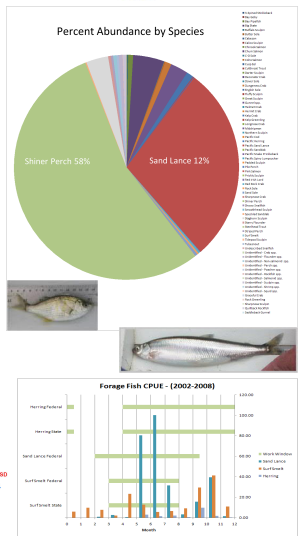
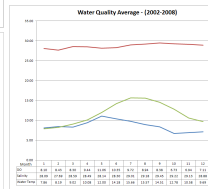
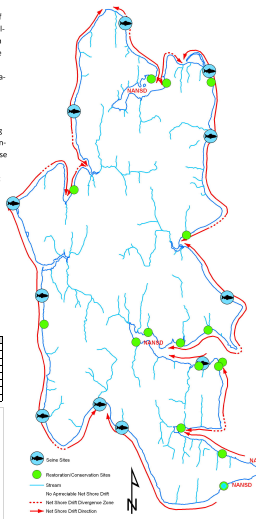
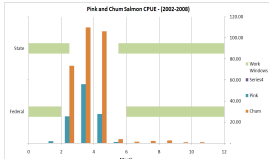
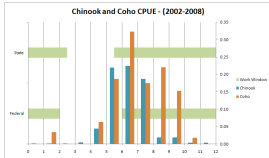
Objectives: (1) identify the distribution, abundance, origin (by coded wire tag recovery), and timing of both wild and hatchery salmon, (2) compare the condition factors of hatchery to wild Chinook juveniles, (3) identify forage fish use of the nearshore, (4) document all other fish and most of the larger invertebrate species observed, and (5) inform and prioritize shoreline management and salmon recovery efforts.

Methods:

- Puget Sound Beach Seine Protocol
- Bi-Weekly to monthly sampling
- Sampling sites determined by:
 - Geographic location
 - Coastal features & habitats
 - Access
- 4 core sites & 10 rotating sites
 - Rotating sites sampled less frequently than core sites
- Crews: volunteers w/ biologist on board
- Data storage: Access database/ArctGIS geodatabase

Beach Seine Sampling Frequency

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
2002													0
2003													16
2004													23
2005													20
2006													26
2007													24
2008													24
Total	4	4	4	4	4	4	4	4	4	4	4	4	133



Conclusions:

- 139,367 total fish and invertebrates caught in 595 sets from 2002 through 2008
- Abundance of ESA listed Chinook is apparently geographically dependent based on CWT recoveries (predominantly from South and Central Sound)
- Observed condition factors (hatchery vs. "wild")
 - Significantly different during April & May
 - Similar from June through September
- Regulatory work windows do not adequately match observed period of abundance of Chinook, coho and forage fish
- Observed DO lowest in October, observed temperatures highest in July and August, and salinity relatively constant throughout the year
- Beach seine data combined with Bainbridge Island's Nearshore Assessment Model

