

County: **Skagit County**
Grant No: **SEANWS-2014-SkCoPW-0003**

PROJECT TITLE: **Northwest Straits Project: Skagit County MRC Operations and Projects**

TASK NUMBER: **Task 6: Nearshore Restoration Monitoring**

DELIVERABLE: **#6.6: Nearshore Restoration Monitoring Report**

PERIOD COVERED: **October 1, 2014 – September 15, 2015**

DATE SUBMITTED: **September 15, 2015**

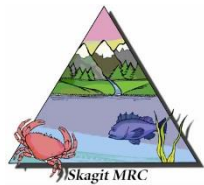


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Nearshore Monitoring



Prepared for Skagit County Marine Resources Committee
Prepared by Northwest Straits Marine Conservation Foundation
Skagit County Contract #C20150110



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Northwest Straits Foundation
Nearshore Monitoring
Final Report for Skagit County Contract Number C20150110
September 10, 2015

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Project Background, Scope, and Objectives

The Northwest Straits Foundation and Skagit Marine Resources Committee proposed to implement biological and physical monitoring at nearshore restoration sites as well as begin implementation of status and trends monitoring within Fidalgo Bay to meet goals outlined in the Skagit Restoration Initiative.

This comprehensive monitoring program will cover multiple sites within Fidalgo Bay as well as Shannon Point and Bowman Bay. Data collected will be consistent with and promote the goals of the Northwest Straits Initiative's Science benchmark and will also provide information towards the Marine Life protection and restoration and Education and Outreach benchmarks. The Science benchmark calls for developing protocols, identifying and filling in data gaps, and consistent collection and coordination of data. A trained group of volunteers will collect data at all sites, thereby ensuring consistency of collection methods from site to site. Quality assurance and control will be conducted periodically to ensure protocols are being followed. Data trends within Fidalgo Bay may result in recommendations of restoration projects or management actions to recovery species.

Specific objectives of the monitoring program are: 1) to train a dedicated group of volunteers in habitat monitoring data collection; 2) to assess the changes in conditions from pre- project to post restoration by collecting and analyzing monitoring data including some or all of the parameters noted above; 3) to fill in status and trends data gaps within Fidalgo Bay by monitoring beach profile elevations, forage fish spawning activity, and nearshore fish use through beach seining; and 4) to make recommendations for future projects or management actions as applicable based on monitoring results.

Summary

Monitoring efforts within Skagit County has been a highly successful and collaborative effort. Project partners include Skagit Marine Resources Committee, Washington Department of Fish and Wildlife

(WDFW), National Oceanic and Atmospheric Administration, Padilla Bay Coastal Volunteer Partnership, RE Sources for Sustainable Connections, and Samish Indian Nation Department of Natural Resources. We have worked closely with project partners to develop protocols, monitoring plans, a Quality Assurance Project Plan, and implementation of monitoring activities.

Citizen volunteers have played a large role in successful implementation of monitoring plans and establishing baseline data. Volunteers have contributed 798 hours to conducting monitoring activities, coordination, construction and maintenance of field equipment, and data entry. In addition to hours spent completing the previously mentioned activities, citizen volunteers have completed several trainings in monitoring protocols including beach seining, intertidal surveys, large woody debris and beach wrack surveys, and forage fish egg lab identification. A roster of training attendees is included in the attachments.

Baseline data collected during the contract period is currently being compiled and analyzed. Completed excel databases for intertidal surveys and forage fish spawning is attached. Copies of field data for large woody debris and beach wrack are included in the attachments, a completed database will be provided during fall 2015.

Data entry from beach seining activities is near completion, and will be provided by September 16, 2015. A diversity of catch has been found at all sites, with notable species within Fidalgo Bay being post larval surf smelt, pink salmon, coho salmon, chum salmon, and Chinook salmon; in Bowman Bay, post larval surf smelt, sockeye salmon, coho salmon, and Chinook salmon; at Shannon Point, post larval surf smelt, coho salmon, and Chinook salmon.

After many outings by dedicated volunteers finding zero spawning activity at Bowman Bay, Shannon Point, and Northwest March's Point, surf smelt spawning has been identified and returned to Northwest March's Point. Surf smelt spawning activity had previously been documented by WDFW, however spawning activity had ceased in recent years presumably due to unsuitable habitat. Northwest March's Point Beach Nourishment Project was completed during fall 2014, and has experienced a return of surf smelt spawning beginning in July 2015. Spawning continues and was last detected during a September 8, 2015 survey.

Tasks and Deliverables

Task 3.1: Volunteer Training

All trainings were completed and reported upon in the previous two reporting periods. Trainings were developed and coordinated with project partners.

Trainings, training dates and attendance were as follows:

Beach seining – February 13, 2015 – 51 in attendance

Intertidal surveys – April 19 and May 17, 2015 – 30 in attendance (hosted by RE Sources for Sustainable Connections and the Coastal Volunteer Partnership at Padilla Bay)

Large woody debris and beach wrack – April 23 and May 4, 2015 – 5 in attendance

Forage fish egg identification lab training – July 2, 2015 – 10 in attendance

Task 3.2: Establish Baseline Conditions

All necessary data has been collected to establish baseline conditions at Shannon Point, Bowman Bay, and Northwest March's Point for intertidal biota, beach profiles, forage fish spawning, nearshore fish use (excluding Shannon Point), and large woody debris and beach wrack accumulation. Beach seining at Shannon Point was conducted in June 2015 with boat assistance from volunteer Jim Gleeson, and will continue starting October 2015 once Jim returns from an extended absence.

Monitoring of status and trends of nearshore fish use throughout Fidalgo Bay is continuous and commenced in March 2015. Excel databases for intertidal surveys and forage fish surveys are attached. Creation of databases for large woody debris and beach wrack surveys is in progress as protocols were recently tested and finalized, and 2015 data is now ready for data entry. PDF files of completed field data sheets are attached, copies of databases will be provided once completed in fall 2015. Entry of beach seining data into Microsoft Access database is being finalized, a copy of the data will be provided no later than September 16, 2015.

Task 3.3: Communication

Jason Morgan and Skagit MRC project lead Jamey Selleck have communicated throughout the contract period to discuss monitoring program needs and logistics. Jamey Selleck is assisting NWSF staff with preliminary data analysis. MRC coordinator Tracy Alker has been informed of all monitoring activities and MRC representatives are actively involved in monitoring efforts and have been present for all training and monitoring activities.

Skagit County Contract #C20150110

Task 3: Nearshore Monitoring

Volunteers Valerie Gleeson, Gordon Sjogren, Pattie Hutchins, Phyllis Bravinder, and Susan Ehler identify surf smelt and sand lance eggs during lab training



RE Sources' Wendy Steffenson and volunteers Hal Lee, and Gordon Sjogren, study invertebrate and marine algae identification during intertidal survey training



Volunteer Jim Somers instructs at the beach seining training at Deception Pass State Park



Volunteers Tim Manns and Yvonne Houpermans conduct intertidal surveys at Shannon Point



Skagit MRC Chair Jay Lind speaks to an audience of volunteers and general public prior to volunteer monitoring activities at Bowman Bay



Volunteers haul a net in during beach seining activities at Bowman Bay



Volunteer Yvonne Houpermanns works engages with children enjoying the beach during seining activities at Bowman Bay

Beach Seine Training Attendees	
Anna Toledo	Matt Bluhm
Austin Rose	Melissa Merickel
Ben Albers	Paul Dinnel
Bob Gentz	Penny Harger
Brynn McIntyre	Pete Hasse
Catherine Buchalski	Rachel Benbrook
Chris Brown	Raylene Levi
Dawn Pucci	Renee LaCroix
Debra Paros	Ryan Elting
Don Coleman	Sara Brooke Benjamin
Doug Stark	Sarah Wheatly
Erin Licata	Susan Mador
Eugene Thrasher	Terry Skorheim
Finn Gatewood	Todd Woodward
Gary Skorheim	Tom Albrecht
George Tenborg	Tom Richards
Gordon Marvin	Toshi Wantanabe
Heidi Nichols	Tracy Alker
Jack Middleton	Wayne Huseby
Jamie Hartley	
Janice Buchanan	
Jason Morgan	
Jay Lind	
Jim Johnson	
Jim Somers	
Jodi Bluhm	
Kate Ambrus	
Kes Tautrydas	
Kurt Buchanan	
Lana Noble	
Laura Hanna	
Lee Chavez	
Lisa Kaufman	
Mary Hulbert	

Large Woody Debris/Beach Wrack Attendees
Elizabeth Richards
Tom Richards
Hal Lee
Sara Benjamin
Pete Hasse

Forage Fish Lab Training Attendees
Sue Ehler
Pete Hasse
Val Gleeson
Gordon Sjogren
Jack Middleton
Debra Paros
Ruth Richards
Yvonne Houppermans
Phyllis Bravinder
Pattie Hutchins

Coastal Volunteer Partnership at Padilla Bay will provide a report of attendees for intertidal training as part of the Salish Sea Stewards training program.

ADD Column For unknown - 1%

Time: 12:30

Beach Wrack Survey

Recorder: Jason Morrison

% ukun.

Beach	Site #	Wreck Line ('F' or 'O')	Transect Point #	% Red Algae	% Green Algae	% Brown Algae	% Eelgrass	% Terrestrial Plants	% Trash	Comments
Bauman Bay	1	0	1		4			30		WIDE WRECK LINE
	1	0	2		18			50		Just looking @ SURFACE?
	1	0	3		50			40	1	MTHD within RIP RAP?
	1	0	4		60			2		
	1	0	5		80			100		
	1	F	1	4	90					
	1	F	2	10	96					
	1	F	3	16	89					
	1	F	4	8	91					
	1	F	5	6	89	5		24		
	1	F	1	1	16	5		16		
	1	F	2							
	1	F	3							
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	1	F	1							

Samplers: 1 ASAN Morgan / 154 Kaufman Tom Richards Elizabeth Richards. H/1 / ec

Complete

Beach Wrack Survey

Date: 4/23/2015

Time: 11:00 AM - 12:30

Recorder: JASON MCGEEHAN

Beach	Site #	Wrack Line ('F' or 'O')	Transect Point #	% Red Algae	% Green Algae	% Brown Algae	% Eelgrass	% Terrestrial Plants	% Trash	Comments
Bauman Bay	3	0	1		4			4		210 RAP
			2		4			8		210 RAP
			3		10				X	UNDER PIER
			4		33			12	1	210 RAP
			5	4	80	1				
			6	4	60	4				
			7	2	44	1	1			
			8	1	50	6	X 4			
			9	4	95	1				
			10		9			8		
			11		4			30		
			12		44			16		LOGS
			13	1	90			90		
			14		6					
			15		90					
			16	2	90	2				
			17	2	86		2			
			18	4						
			19							
			20							
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			26							
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			28							
			29							
			30							

Samplers: SEE PAGE 1

Date: 5/4/2015

Time: 10:30

Beach Wrack Survey

Recorder: Jason McArthur

Beach	Site #	Wrack Line ('F' or 'O')	Transect Point #	% Red Algae	% Green Algae	% Brown Algae	% Eelgrass	% Terrestrial Plants	% Trash	Comments
SHANNON PT.	1	1	1	10		10	40	1	X	MONTH = HW ?
	1	1	2				8		X	ALGAE OTHER - 8%
	1	1	3				35			100% SMUGASSUM
	1	1	4	10			28	2	X	ALGAE OTHER - 4%
	1	1	5	2			20	2		
	1	0	1							NO WRACK LINE. BLUE TOE
	1	0	2							
	1	0	3							
	1	0	4							
	1	0	5							
	2	1	1							
	2	1	2							
	2	1	3							
	2	1	4							
	2	1	5							
	2	1	6							
	2	0	1							
	2	0	2							
	2	0	3							
	2	0	4							
	2	0	5							
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	2	0	100							

Samplers: Jason McArthur, Lisa Kuehn, Sara Benjamin

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Samplers: Asan Mangar, Lisa Kattman, Sarah Benjamin

RW=7

Date: 5/4/2015

Time: 13:00

Beach Wrack Survey

Recorder: Jason Morgan

Beach	Site #	Wrack Line ('F' or 'O')	Transect Point #	% Red Algae	% Green Algae	% Brown Algae	% Eelgrass	% Terrestrial Plants	% Trash	Comments
NWMP	1	1	1		80	15 95	10			80% UNKNOWNS 10%
	1	1	2		78		22			
	1	1	3	4	90		1			
	1	1	4	2	93		1			
	1	1	5		88		4			
	1	0	1		95		2			
	1	0	2		98		2			
	1	0	3		98		2			Counted 25' Counted 25'
	1	0	4		98		2			
	1	0	5							
	2	1	1		95		4			
	2	1	2		16		84			
	2	1	3		50		49			
	2	1	4		98		2			
	2	1	5		92		4			
	2	0	1		18 78					
	2	0	2		88					
	2	0	3		76					
	2	0	4		98					
	2	0	5		70					

Samplers: Jason Morgan, Lisa Kautman, Sara Benjamin

Site: Northwest Mac's Pt. Allyn

Date: 9/2/2015

Time: 13:30

	Transect Point	Wrack Line	Total Cover (%)	Eelgrass (%)	Marine Algae (%)	Terrestrial (%)	Human Debris (%)	Green Algae	Red Algae	Brown Algae	Other	Comments	
		F											Fresh NO WRACK
		F											
		F											
		F											
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Samplers: JACK M., DENNIS T., DAN C., PATRICK H.

Beach Wrack Survey

Site: Northwest March's Point NWMP2

Date: 9/2/2015

Time: 12:30

Transect Point	Wrack Line	Total Cover (%)	Eelgrass (%)	Marine Algae (%)	Terrestrial (%)	Human Debris (%)	Green Algae	Red Algae	Brown Algae	Other	Comments
1	F	20	18		2						
2	F	36	100/36								
3	F	20	100/20								
4	F	4	4								
5	F	20	20								
6	F	25	25								
7	F	20	26								
8	F	20	20								
9	F	26	26								
10	F	16	16								
1	O	100	100	40			✓				BROWN/RED UNIDENTIFIED
2	O	100	38	60	2		✓		✓		POSSIBLE
3	O	92	59	32	1		✓				
4	O	90	85	4	1		✓				
5	O	160	49	50	1		✓				
6	O	100	88	12			✓				
7	O	160	96	4			✓				
8	O	52	40	12			✓				
9	O	80	76	10							
10	O	93	56	40	3						

Samplers: Jenny, Doug, Dennis T.

Recorder: Jason Morgan

Samplers: Jason Morgan, Lisa Kaufman, Tom Richards, Elizabeth Richards, Hyelee

Large Woody Debris Survey

Date: 5/4/2015

Time: 10:30

Recorder: Jason M. Moore

Beach	Site #	# Fallen Trees	Transect Point #	Logline Width (ft)	# Natural Logs Large (≥ 6.5 ft)	# Natural Logs Small (< 6.5 ft)	# Human Altered Large (≥ 6.5 ft)	# Human Altered Small (< 6.5 ft)	Comments
<u>SHADDO PT.</u>	1	1	1	6	2	0	1	0	
	1	1	2	10	2	0	0	0	
	1	1	3	20	3	0	1	0	
	1	1	4	0	0	0	0	0	
	2	0	1	12	2	0	0	0	
	2	0	2	13	2	0	0	0	ON TOP OF RIP RAP
	2	0	3	12	1	0	0	0	"
	2	0	4	0	0	0	0	0	"
	3	0	1	12	2	0	0	0	
	3	0	2	12	2	0	0	0	
	3	0	3	12	2	0	0	0	
	3	0	4	0	0	0	0	0	
	3	0	5	0	0	0	0	0	
	3	0	6	0	0	0	0	0	
	3	0	7	0	0	0	0	0	
	3	0	8	0	0	0	0	0	
	3	0	9	0	0	0	0	0	
	3	0	10	0	0	0	0	0	
	3	0	11	0	0	0	0	0	
	3	0	12	0	0	0	0	0	
	3	0	13	0	0	0	0	0	
	3	0	14	0	0	0	0	0	
	3	0	15	0	0	0	0	0	
	3	0	16	0	0	0	0	0	
	3	0	17	0	0	0	0	0	
	3	0	18	0	0	0	0	0	
	3	0	19	0	0	0	0	0	
	3	0	20	0	0	0	0	0	
	3	0	21	0	0	0	0	0	
	3	0	22	0	0	0	0	0	
	3	0	23	0	0	0	0	0	
	3	0	24	0	0	0	0	0	
	3	0	25	0	0	0	0	0	
	3	0	26	0	0	0	0	0	
	3	0	27	0	0	0	0	0	
	3	0	28	0	0	0	0	0	
	3	0	29	0	0	0	0	0	
	3	0	30	0	0	0	0	0	
	3	0	31	0	0	0	0	0	
	3	0	32	0	0	0	0	0	
	3	0	33	0	0	0	0	0	
	3	0	34	0	0	0	0	0	
	3	0	35	0	0	0	0	0	
	3	0	36	0	0	0	0	0	
	3	0	37	0	0	0	0	0	
	3	0	38	0	0	0	0	0	
	3	0	39	0	0	0	0	0	
	3	0	40	0	0	0	0	0	
	3	0	41	0	0	0	0	0	
	3	0	42	0	0	0	0	0	
	3	0	43	0	0	0	0	0	
	3	0	44	0	0	0	0	0	
	3	0	45	0	0	0	0	0	
	3	0	46	0	0	0	0	0	
	3	0	47	0	0	0	0	0	
	3	0	48	0	0	0	0	0	
	3	0	49	0	0	0	0	0	
	3	0	50	0	0	0	0	0	
	3	0	51	0	0	0	0	0	
	3	0	52	0	0	0	0	0	
	3	0	53	0	0	0	0	0	
	3	0	54	0	0	0	0	0	
	3	0	55	0	0	0	0	0	
	3	0	56	0	0	0	0	0	
	3	0	57	0	0	0	0	0	
	3	0	58	0	0	0	0	0	
	3	0	59	0	0	0	0	0	
	3	0	60	0	0	0	0	0	
	3	0	61	0	0	0	0	0	
	3	0	62	0	0	0	0	0	
	3	0	63	0	0	0	0	0	
	3	0	64	0	0	0	0	0	
	3	0	65	0	0	0	0	0	
	3	0	66	0	0	0	0	0	
	3	0	67	0	0	0	0	0	
	3	0	68	0	0	0	0	0	
	3	0	69	0	0	0	0	0	
	3	0	70	0	0	0	0	0	
	3	0	71	0	0	0	0	0	
	3	0	72	0	0	0	0	0	
	3	0	73	0	0	0	0	0	
	3	0	74	0	0	0	0	0	
	3	0	75	0	0	0	0	0	
	3	0	76	0	0	0	0	0	
	3	0	77	0	0	0	0	0	
	3	0	78	0	0	0	0	0	
	3	0	79	0	0	0	0	0	
	3	0	80	0	0	0	0	0	
	3	0	81	0	0	0	0	0	
	3	0	82	0	0	0	0	0	
	3	0	83	0	0	0	0	0	
	3	0	84	0	0	0	0	0	
	3	0	85	0	0	0	0	0	
	3	0	86	0	0	0	0	0	
	3	0	87	0	0	0	0	0	
	3	0	88	0	0	0	0	0	
	3	0	89	0	0	0	0	0	
	3	0	90	0	0	0	0	0	
	3	0	91	0	0	0	0	0	
	3	0	92	0	0	0	0	0	
	3	0	93	0	0	0	0	0	
	3	0	94	0	0	0	0	0	
	3	0	95	0	0	0	0	0	
	3	0	96	0	0	0	0	0	
	3	0	97	0	0	0	0	0	
	3	0	98	0	0	0	0	0	
	3	0	99	0	0	0	0	0	
	3	0	100	0	0	0	0	0	

Samplers: Jason M., Lisa K., Sara B.

Date: 5/4/2015

Large Woody Debris Survey
Time: 13:00

Recorder: Jason Morgan

[illegible]

Samplers: JASON M., LISA K., SARA B.

Beach: Northwest Macchi's Pt.

Date: 9/2/2015

Time: 12:30

Samplers: John Davis T. Day L. Rattie H.

Bowman Bay Species List

Jason Morgan, Marine Biologist, NW Straits;

Compiler: Michael Kyte, Marine Biologist and Volunteer Citizen Scientist

Note: Where available a "standardized common name" is provided from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).

Note: Where a genus or species name has been "officially" changed, the older name is provided in parentheses (e.g., see *Leukoma (Protothaca) staminea*

Site: Bowman Bay 1

Date & Time of sampling: 7/1/2015

[illegible]

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cientist

from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).

the older name is provided in parentheses (e.g., see *Leukoma (Protothaca) staminea*

Date & Time of sampling: 7/1/2015

[illegible]

<i>Mytilus trossulus</i>	Pacific blue mussel																		
<i>Clinocardium nuttallii</i>	"Nuttall cockle" (heart cockle)																		
<i>Crassostrea gigas</i>	"Pacific oyster"																		
MOLLUSCA: Polyplacophora	Chitons																		
<i>Mopalia muscosa</i>	Mossy chiton																		
<i>Mopalia lignosa</i>	Woody chiton																		
Lepidochitonidae	chiton																		
ARTHROPODA: Crustacea: Malaconstraca																			
<i>Neomolgus littoralis</i>	red velvet mite																		
<i>Gnorimosphaeroma orgonensis</i>	Pill bug isopod																		
<i>Pentidotea (Idotea) wosnesenskii</i>	Rockweed isopod																		
<i>Pagurus sp.</i>	Hermit Crab																		
<i>Pagurus hirsutiusculus</i> ?	"hairy hermit"																		
<i>Pagurus granosimanus</i>	"grainyhand hermit"																		
Crustacea: Amphipoda: Gammaridea	gammarid amphipod																		
Caprellidae	caprella amphipod																		
<i>Hemigrapsus nudus</i>	"Purple shore crab"																		
<i>Hemigrapsus oregonensis</i>	"yellow shore crab"	#																	
<i>Hapalogaster mertensii</i>	"hairy crab"																		
<i>Telmessus cheiragonus</i>	"helmet crab"																		
<i>Upogebia pugettensis</i>	"blue mud shrimp" (burrow																		
ARTHROPODA: Crustacea: Maxillopoda																			
<i>Balanus glandula</i>	Acorn Barnacle																		
<i>Balanus crenatus</i>	Crenate Barnacle																		
<i>Semibalanus cariosus</i>	Haystack Barnacle																		
<i>Chthalamus dalli</i>	Little brown barnacle	%																	
Balanomorpha	unidentified acorn barnacle																		
ECHINODERMATA: Asteroidea	sea star or starfish																		
<i>Leptasterias hexactis</i>	six rayed sea star																		
<i>Pisaster ochraceus</i>	ochre or purple sea star																		
CHORDATA: Pisces																			
<i>Gobiesox maeandricus</i>	"Northern clingfish"																		
<i>Apodichthys flavidus</i>	"Penpoint Gunnel"																		
FUNGI																			
<i>Verrucaria</i>	Lichen																		
<i>Caloplaca</i>	Lichen																		
PLANTAE: Tracheophyta																			
<i>Zostera marina</i>	eelgrass																		
<i>Zostera japonica</i>	Japanese eelgrass																		
PLANTAE: Chlorophyta	Green algae																		
"Filamentous green"	unidentified green algae	%																	
<i>Blidingia minima</i> (?) (formerly <i>Enteromorpha minima</i> or <i>nana</i>)	"dwarf sea hair"	%																	
<i>Acrosiphonia coalita</i>	Green Rope	%																	
<i>Ulva lactuca</i>	Sea lettuce (foliose)	%																	
<i>Ulva intestinalis</i>	Sea lettuce (filamentous or "tubular")																		
<i>Ulva</i> (formerly <i>Enteromorpha</i>) <i>prolifera</i>	"branched string lettuce"	%																	
<i>Ulva</i> sp. (form unidentified)	Sea lettuce (form unidentified)																		
PLANTAE: Ochrophyta	Brown algae																		
<i>Alaria marginata</i>	"ribbon kelp"	%																	
<i>Desmarestia</i> sp.	acid kelp	%																	
<i>Soranthera ulvoidea</i>	"Studded Sea Balloons"	%																	

[illegible]

[illegible]

[illegible]

Jason Morgan, Marine Biologist, NW Straits
 Compiler: Michael Kyte, Marine Biologist and Volunteer Citizen Scientist
Note: Where available a "standardized common name" is provided from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).
Note: Where a genus or species name has been "officially" changed, the older name is provided in parentheses (e.g., see *Leukoma* (*Protothaca*) *staminea*)

Site: Bowman Bay 2 Date & Time of sampling: 7/1/2015

[illegible]

[illegible]

March's Point Species List

Jason Morgan, Marine Biologist, NW Straits;

Compiler: Michael Kyte, Marine Biologist and Volunteer Citizen Scientist

Note: Where available a "standardized common name" is provided from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).

Note: Where a genus or species name has been "officially" changed, the older name is provided in parentheses (e.g., see *Leukoma (Protothaca) staminea*

Site: March's Point 1 (east)

Date of sampling: 8/12/2015

		Section along profile line, in feet								
Scientific Name or Group	Standard Common Name	0-20	21-40	41-60	61-80	81-100	101-120	121-140	141-160	
PORIFERA										
<i>Halichondria</i> sp.	bread crumb sponge									
Cnidaria: anthozoa										
<i>Anthopleura elegantissima</i>	"clonal anemone" (aggregating anemone)									
<i>Anthopleura artemisia</i>	moonglow anemone									
"Zoantharia" (if ID correct, = <i>Epizoanthus scotinus</i>)	yellow zoanthid									
NEMERTEA										
<i>Paranemertea peregrina</i>	ribbon worm (purple nemertid)									
<i>Carinoma mutabilis</i>	Nemertea - white									
<i>Tubulanus polymorphus</i>	Nemertea - orange									
BRYOZOA	Moss animals									
Bryozoa sp. (<i>Membranipora</i> ?)	encrusting bryozoan									
ANNELIDA										
Polychaeta sp.	Polychaete									
Tubicolous polychaete	unidentified tube worm									
Hesionidae sp.	"bristle worm" Polychaete									
Nephtyidae spp.	Goddess worm									
Nereidae spp.	Pile worm									
MOLLUSCA: Gastropoda	Snails									
<i>Lacuna</i> sp.	"lacuna"									
<i>Littorina scutulata</i>	Checkered Periwinkle								✓	
<i>Littorina sitchana</i> (sitkana)	"Sitka periwinkle"	✓	✓	✓						
<i>Lirabuccinum dirum</i> (Searlesia dira)	Dire whelk									
<i>Nassarius fossatus</i>	"Channeled nassa"									
<i>Amphissa</i> (?) columbiana	"wrinkled Amphissa"									
<i>Nucella lamellosa</i>	"frilled dogwinkle"				✓	✓				
<i>Nucella ostrina</i> (emarginata)	"emarginate dogwinkle"									
<i>Nucella canaliculata</i>	channeled dogwinkle									
<i>Batillaria zonalis</i> (atramentaria, cumingii)	"Japanese false cerith"									
<i>Haminoea vesicula</i> (includes egg masses)	bubble shell)									
Nudibranch sp.	unidentified nudibranch									
<i>Lottia pelta</i>	"Shield limpet"				✓	✓	✓			
<i>Tectura scutum</i>	"Plate limpet"					✓	✓	✓		
<i>Tectura persona</i>	"Mask limpet"	✓	✓							
<i>Lottia digitalis</i>	Finger limpet		✓							
MOLLUSCA: Bivalvia	Clams and Mussels									
<i>Mytilus trossulus</i>	Pacific blue mussel									
<i>Ruditapes</i> (<i>Venerupis</i>) <i>philippinarium</i>	Japanese Littleneck			✓						
<i>Clinocardium nuttallii</i>	"Nuttall cockle" (heart cockle)									
<i>Crassostrea gigas</i>	"Pacific oyster"									
MOLLUSCA: Polyplacophora	Chitons									
<i>Mopalia muscosa</i>	Mossy chiton									
<i>Mopalia lignosa</i>	Woody chiton									
<i>Mopalia kennerlyi</i> (ciliata)	Northern Hairy Chiton					✓		✓		
Lepidochitonidae	chiton									
ARTHROPODA: Crustacea: Malaconstraca										
<i>Neomolgus littoralis</i>	red velvet mite									
<i>Gnorimosphaeroma orgonensis</i>	Pill bug isopod									
<i>Pentidotea</i> (<i>Idotea</i>) <i>wosnesenskii</i>	Rockweed isopod									
<i>Pagurus</i> sp.	Hermit Crab					✓	✓	✓	✓	
<i>Pagurus hirsutiusculus</i> ?	"hairy hermit"									
<i>Pagurus granosimanus</i>	"grainyhand hermit"									
Crustacea: Amphipoda: Gammaridea	gammarid amphipod	✓								
Caprellidae	caprella amphipod									
<i>Hemigrapsus nudus</i>	"Purple shore crab"	✓		✓	✓	✓	✓			

[illegible]

cientist

from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).

The older name is provided in parentheses (e.g., see *Leukoma (Protothaca) staminea*)

Date & Time of sampling: 8/12/2015[illegible]

<i>Mytilus trossulus</i>	Pacific blue mussel															
<i>Leukoma</i> (formerly <i>Protothaca</i>)	Native littleneck									1						
<i>Clinocardium nuttallii</i>	"Nuttall cockle" (heart cockle)															
<i>Crassostrea gigas</i>	"Pacific oyster"															
MOLLUSCA: Polyplacophora	Chitons															
<i>Mopalia muscosa</i>	Mossy chiton															
<i>Mopalia lignosa</i>	Woody chiton															
Lepidochitonidae	chiton															
ARTHROPODA:Crustacea:Malaconstraca																
<i>Neomolgus littoralis</i>	red velvet mite															
<i>Gnorimosphaeroma orgonensis</i>	Pill bug isopod															
<i>Pentidotea</i> (<i>Idotea</i>) <i>wosnesenskii</i>	Rockweed isopod															
<i>Pagurus</i> sp.	Hermit Crab															
<i>Pagurus hirsutiusculus</i> ?	"hairy hermit"															
<i>Pagurus granosimanus</i>	"grainyhand hermit"															
Crustacea: Amphipoda: Gammaridea	gammarid amphipod															
Caprellidae	caprella amphipod															
<i>Hemigrapsus nudus</i>	"Purple shore crab"									1						
<i>Hemigrapsus oregonensis</i>	"yellow shore crab"	#														
<i>Hapalogaster mertensii</i>	"hairy crab"															
<i>Telmessus cheiragonus</i>	"helmet crab"															
<i>Upogebia pugettensis</i>	"blue mud shrimp" (burrow															
ARTHROPODA:Crustacea:Maxillopoda																
<i>Balanus glandula</i>	Acorn Barnacle		1	4	4	5	14	14	19	18						
<i>Balanus crenatus</i>	Crenate Barnacle				1											
<i>Semibalanus cariosus</i>	Haystack Barnacle															
<i>Chthalamus dalli</i>	Little brown barnacle	%		1	2	2	4									
Balanomorpha	unidentified acorn barnacle															
ECHINODERMATA: Asteroidea	sea star or starfish															
<i>Leptasterias hexactis</i>	six rayed sea star															
<i>Pisaster ochraceus</i>	ochre or purple sea star															
CHORDATA: Pisces																
<i>Gobiesox maeandricus</i>	"Northern clingfish"															
<i>Apodichthys flavidus</i>	"Penpoint Gunnel"															
FUNGI																
<i>Verrucaria</i>	Lichen															
<i>Caloplaca</i>	Lichen															
PLANTAE: Tracheophyta																
<i>Zostera marina</i>	eelgrass															
<i>Zostera japonica</i>	Japanese eelgrass															
PLANTAE: Chlorophyta	Green algae															
" Filamentous green"	unidentified green algae	%														
<i>Blidingia minima</i> (?) (formerly <i>Enteromorpha minima</i> or <i>nana</i>)	"dwarf sea hair"															
<i>Acrosiphonia coalita</i>	Green Rope	%														
<i>Ulva lactuca</i>	Sea lettuce (foliose)	%														
<i>Ulva intestinalis</i>	Sea lettuce (filamentous or "tubular")															
<i>Ulva</i> (formerly <i>Enteromorpha</i>) <i>prolifera</i>	"branched string lettuce"	%														
<i>Ulva linza</i>	Green String Lettuce	%														
<i>Ulva</i> sp. (form unidentified)	Sea lettuce (form unidentified)															
PLANTAE: Ochrophyta	Brown algae															

[illegible]

Jason Morgan, Marine Biologist, NW Straits

Field Biologist & Compiler: Michael Kyte, Marine Biologist and Volunteer Citizen Scientist

Note: Where available a "standardized common name" is provided from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).

Note: Where a genus or species name has been "officially" changed, the older name is provided in parentheses (e.g., see *Leukoma (Protothaca) staminea*

Site: March's Point 2 (west)

Date & Time of sampling: 8/12/2015

[illegible]

[illegible]

[illegible]

Sampler and Compiler: Michael Kyte, Marine Biologist and Volunteer Citizen Scientist

Note: Where available a "standardized common name" is provided from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).

Note: Where a genus or species name has been "officially" changed, the older name is provided in parentheses (e.g., see *Leukoma (Protothaca) staminea*

Site: _March's Pt. 2 (west)

Date & Time of sampling: _8/12/2015

Scientific Name or Group	Standard Common Name	Units (% cover or number per 0.25 m ² quadrat)	Quadrats											
			+7 ft				+5 ft				0 ft			
			1	2	3	4	1	2	3	4	1	2	3	4
PORIFERA														
<i>Halichondria</i> sp.	bread crumb sponge													
Cnidaria: anthozoa														
<i>Anthopleura elegantissima</i>	"clonal anemone" (aggregating anemone)													
<i>Anthopleura artemisia</i>	moonglow anemone													
"Zoantheria" (if ID correct, = <i>Epizoan</i>)	yellow zoanthid													
NEMERTEA														
<i>Paranemertea peregrina</i>	ribbon worm (purple)													
<i>Carinoma mutabilis</i>	Nemertea - white													
<i>Tubulanus polymorphus</i>	Nemertea - orange													
BRYOZOA	Moss animals													
Bryozoa sp. (<i>Membranipora</i> ?)	encrusting bryozoan													
ANNELIDA														
Polychaeta sp.	Polychaete													
Tubicolous polychaete	unidentified tube													
Hesionidae sp.	"bristle worm"													
Nephtyidae spp.	Goddess worm													
Nereidae spp.	Pile worm													
Sabellidae	Tube worm	#												1
<i>Axiiothella rubrocincta</i>	Bamboo worm										1	1	0	1
MOLLUSCA: Gastropoda	Snails													
<i>Lacuna</i> sp.	"lacuna"													
<i>Littorina scutulata</i>	Checkered Periwinkle	#												
<i>Littorina sitchana</i> (sitkana)	"Sitka periwinkle"	#					2	11	4	4				
<i>Lirabuccinum dirum</i> (Searlesia)	Dire whelk													
<i>Nassarius fossatus</i>	"Channeled nassa"													
<i>Amphissa</i> (?) columbiana	"wrinkled Amphissa"													
<i>Nucella lamellosa</i>	"frilled dogwinkle"													
<i>Nucella ostrina</i> (emarginata)	"emarginate dogwinkle"													
<i>Nucella canaliculata</i>	channeled dogwinkle													
<i>Batillaria zonalis</i> (Attramentaria,	"Japanese false cerith"													
<i>Haminoea vesicula</i> (includes egg	bubble" (white bubble													
Nudibranch sp.	nudibranch													
<i>Lottia pelta</i>	"Shield limpet"								1	6				
<i>Tectura scutum</i>	"Plate limpet"													
<i>Tectura persona</i>	"Mask limpet"													
<i>Lottia digitalis</i>	Finger limpet	#												
MOLLUSCA: Bivalvia	Clams and Mussels													
<i>Mytilus trossulus</i>	Pacific blue mussel	%								1				
<i>Clinocardium nuttallii</i>	"Nuttall cockle"													
<i>Crassostrea gigas</i>	"Pacific oyster"													
MOLLUSCA: Polyplacophora	Chitons													
<i>Mopalia muscosa</i>	Mossy chiton													
<i>Mopalia lignosa</i>	Woody chiton													
Lepidochitonidae	chiton													
ARTHROPODA:Crustacea:Mala														
<i>Neomolgus littoralis</i>	red velvet mite													
<i>Gnorimosphaeroma orgonensis</i>	Pill bug isopod													
<i>Pentidotea (Idotea) vosnesenskii</i>	Rockweed isopod													
<i>Pagurus</i> sp.	Hermit Crab													
<i>Pagurus hirsutiusculus</i> ?	"hairy hermit"													
<i>Pagurus granosimanus</i>	"grainyhand hermit"													
Crustacea: Amphipoda: Gammaridea	gammarid amphipod													
Caprellidae	caprella amphipod													
<i>Hemigrapsus nudus</i>	"Purple shore crab"						3		5					

[illegible]

Site: Shannon Point

[illegible]

ARTHROPODA: Crustacea: Malaconstraca														
Neomolgus littoralis	red velvet mite													
Gnorimosphaeroma orgonensis	Pill bug isopod													
Pentidotea (Idotea) vosnesenskii	Rockweed isopod						✓							
Pagurus sp.	Hermit Crab								✓		✓			✓
Pagurus hirsutiusculus ?	"hairy hermit"													
Pagurus granosimanus	"grainyhand hermit"													
Crustacea: Amphipoda: Gammaridea	gammarid amphipod													
Caprellidae	caprella amphipod													
Hemigrapsus nudus	"Purple shore crab"			✓		✓		✓		✓				
Hemigrapsus oregonensis	"yellow shore crab"							✓						
Hapalogaster mertensii	"hairy crab"													
Telmessus cheiragonus	"helmet crab"													
Upogebia pugettensis	"blue mud shrimp" (burrow													
ARTHROPODA: Crustacea: Maxillopoda														
Balanus glandula	Acorn Barnacle			✓			✓		✓					
Balanus crenatus	Crenate Barnacle							✓						
Semibalanus cariosus	Haystack Barnacle				✓		✓		✓					
Chthalamus dalli	Little brown barnacle			✓										✓
Balanomorpha	unidentified acorn barnacle													
ECHINODERMATA: Asteroidea														
Leptasterias hexactis	six rayed sea star									✓		✓		
Pisaster ochraceus	ochre or purple sea star											✓		
CHORDATA: Pisces														
Gobiesox maeandricus	"Northern clingfish"											✓		
Apodichthys flavidus	"Penpoint Gunnel"										✓			
FUNGI														
Verrucaria	Lichen	✓												
Caloplaca	Lichen	✓												
PLANTAE: Tracheophyta														
Zostera marina	eelgrass													
Zostera japonica	Japanese eelgrass													
PLANTAE: Chlorophyta														
"Filamentous green"	unidentified green algae				✓									✓
Blidingia minima (?) (formerly Enteromorpha minima or nana)	"dwarf sea hair"				✓									✓
Acrosiphonia coalita	Green Rope													
Ulva lactuca	Sea lettuce (foliose)			✓		✓				✓		✓		✓
Ulva intestinalis	Sea lettuce (filamentous or "tubular")													
Ulva (formerly Enteromorpha) prolifera	"branched string lettuce"													✓
Ulva sp. (form unidentified)	Sea lettuce (form unidentified)													
PLANTAE: Ochrophyta														
Alaria marginata	"ribbon kelp"													✓
Desmarestia sp.	acid kelp													✓
Soranthera ulvoidea	"Studded Sea Balloons"				✓								✓	
	Rockweed "Two-headed Wrack"													
Fucus distichus										✓		✓		
Saccharina latissima (formerly Laminaria saccharina)	ribbon kelp					✓							✓	
Costaria costata	"5-ribbed kelp"										✓			
Sargassum muticum	Japanese wireweed (invasive species)													
Scytosiphon lomentaria	soda straws													
PLANTAE: Rhodophyta														

[illegible]

Jason Morgan, Marine Biologist, NW Straits; Michael Kyte, Marine Biologist and Volunteer Citizen Scientist

Note: Where available a "standardized common name" is provided from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).

Note: Where a genus or species name has been "officially" changed, the older name is provided in parentheses (e.g., see *Leukoma (Protothaca) staminea*

Site: Shannon Point 1

Date & Time of sampling: 6/17/2015

[illegible]

<i>Mytilus trossulus</i>	Pacific blue mussel														
<i>Clinocardium nuttallii</i>	"Nuttall cockle" (heart cockle)														
<i>Crassostrea gigas</i>	"Pacific oyster"														
MOLLUSCA: Polyplacophora	Chitons														
<i>Mopalia muscosa</i>	Mossy chiton														
<i>Mopalia lignosa</i>	Woody chiton														
Lepidochitonidae	chiton														
ARTHROPODA:Crustacea:Malaconstraca															
<i>Neomolgus littoralis</i>	red velvet mite														
<i>Gnorimosphaeroma orgonensis</i>	Pill bug isopod														
<i>Pentidotea (Idotea) vosnesenskii</i>	Rockweed isopod														
<i>Pagurus sp.</i>	Hermit Crab														1
<i>Pagurus hirsutiusculus</i> ?	"hairy hermit"														
<i>Pagurus granosimanus</i>	"grainyhand hermit"														
Crustacea: Amphipoda: Gammaridea	gammarid amphipod														
Caprellidae	caprella amphipod														
<i>Hemigrapsus nudus</i>	"Purple shore crab"														
<i>Hemigrapsus oregonensis</i>	"yellow shore crab"	#			1										
<i>Hapalogaster mertensii</i>	"hairy crab"														
<i>Telmessus cheiragonus</i>	"helmet crab"														
<i>Upogebia pugettensis</i>	"blue mud shrimp" (burrow														
ARTHROPODA:Crustacea:Maxillopoda															
<i>Balanus glandula</i>	Acorn Barnacle														
<i>Balanus crenatus</i>	Crenate Barnacle														
<i>Semibalanus cariosus</i>	Haystack Barnacle														
<i>Chthamalus dalli</i>	Little brown barnacle	%			1			1		10			1		1
Balanomorpha	unidentified acorn barnacle														
ECHINODERMATA: Asteroidea	sea star or starfish														
<i>Leptasterias hexactis</i>	six rayed sea star														
<i>Pisaster ochraceus</i>	ochre or purple sea star														
CHORDATA: Pisces															
<i>Gobiesox maeandricus</i>	"Northern clingfish"														
<i>Apodichthys flavidus</i>	"Penpoint Gunnel"														
FUNGI															
<i>Verrucaria</i>	Lichen														
<i>Caloplaca</i>	Lichen														
PLANTAE: Tracheophyta															
<i>Zostera marina</i>	eelgrass														
<i>Zostera japonica</i>	Japanese eelgrass														
PLANTAE: Chlorophyta	Green algae														
"Filamentous green"	unidentified green algae	%											1		1
<i>Blidingia minima</i> (?) (formerly <i>Enteromorpha minima</i> or <i>nana</i>)	"dwarf sea hair"	%													
<i>Acrosiphonia coalita</i>	Green Rope	%											1		
<i>Ulva lactuca</i>	Sea lettuce (foliose)	%											20		10
<i>Ulva intestinalis</i>	Sea lettuce (filamentous or "tubular")														
<i>Ulva</i> (formerly <i>Enteromorpha</i>) <i>prolifera</i>	"branched string lettuce"	%													
<i>Ulva</i> sp. (form unidentified)	Sea lettuce (form unidentified)														
PLANTAE: Ochrophyta	Brown algae														
<i>Alaria marginata</i>	"ribbon kelp"	%													
<i>Desmarestia</i> sp.	acid kelp	%													
<i>Soranthera ulvoidea</i>	"Studded Sea Balloons"	%											1		2

[illegible]

Jason Morgan, Marine Biologist, NW Straits; Michael Kyte, Marine Biologist and Volunteer Citizen Scientist

Note: Where a genus or species name has been "officially" changed, the older name is provided in parentheses (e.g., see *Leukoma* (*Protothaca*) *staminea*)

Date & Time of sampling: 6/17/2015

[illegible]

[illegible]

[illegible]

Jason Morgan, Marine Biologist, NW Straits; Michael Kyte, Marine Biologist and Volunteer Citizen Scientist

Note: Where available a "standardized common name" is provided from ITIS (Integrated Taxonomic Information System: <http://www.itis.gov/>).

Note: Where a genus or species name has been "officially" changed, the older name is provided in parentheses (e.g., see *Leukoma (Protothaca) staminea*

Site: Shannon Point 2

Date & Time of sampling: 6/17/2015

[illegible]

<i>Mytilus trossulus</i>	Pacific blue mussel	%					1									
<i>Clinocardium nuttallii</i>	"Nuttall cockle" (heart cockle)															
<i>Crassostrea gigas</i>	"Pacific oyster"															
MOLLUSCA: Polyplacophora	Chitons															
<i>Mopalia muscosa</i>	Mossy chiton															
<i>Mopalia lignosa</i>	Woody chiton															
Lepidochitonidae	chiton															
ARTHROPODA:Crustacea:Malaconstraca																
<i>Neomolgus littoralis</i>	red velvet mite															
<i>Gnorimosphaeroma orgonensis</i>	Pill bug isopod															
<i>Pentidotea (Idotea) vosnesenskii</i>	Rockweed isopod															
<i>Pagurus sp.</i>	Hermit Crab															
<i>Pagurus hirsutiusculus</i> ?	"hairy hermit"															
<i>Pagurus granosimanus</i>	"grainyhand hermit"															
Crustacea: Amphipoda: Gammaridea	gammarid amphipod															
Caprellidae	caprella amphipod															
<i>Hemigrapsus nudus</i>	"Purple shore crab"															
<i>Hemigrapsus oregonensis</i>	"yellow shore crab"															
<i>Hapalogaster mertensii</i>	"hairy crab"															
<i>Telmessus cheiragonus</i>	"helmet crab"															
<i>Upogebia pugettensis</i>	"blue mud shrimp" (burrow															
ARTHROPODA:Crustacea:Maxillopoda																
<i>Balanus glandula</i>	Acorn Barnacle	%					20									
<i>Balanus crenatus</i>	Crenate Barnacle	%											2	2		
<i>Semibalanus cariosus</i>	Haystack Barnacle	%														
<i>Chthalamus dalli</i>	Little brown barnacle	%				1	65									
Balanomorpha	unidentified acorn barnacle															
ECHINODERMATA: Asteroidea	sea star or starfish															
<i>Leptasterias hexactis</i>	six rayed sea star	#														1
<i>Pisaster ochraceus</i>	ochre or purple sea star															
CHORDATA: Pisces																
<i>Gobiesox maeandricus</i>	"Northern clingfish"															
<i>Apodichthys flavidus</i>	"Penpoint Gunnel"															
FUNGI																
<i>Verrucaria</i>	Lichen															
<i>Caloplaca</i>	Lichen															
PLANTAE: Tracheophyta																
<i>Zostera marina</i>	eelgrass															
<i>Zostera japonica</i>	Japanese eelgrass															
PLANTAE: Chlorophyta	Green algae															
"Filamentous green"	unidentified green algae															
<i>Blidingia minima</i> (?) (formerly <i>Enteromorpha minima</i> or <i>nana</i>)	"dwarf sea hair"															
<i>Acrosiphonia coalita</i>	Green Rope	%											15	1		
<i>Ulva lactuca</i>	Sea lettuce (foliose)	%					15						60	25	25	1
<i>Ulva intestinalis</i>	Sea lettuce (filamentous or "tubular")	%												5	5	
<i>Ulva</i> (formerly <i>Enteromorpha</i>) <i>prolifera</i>	"branched string lettuce"															
<i>Ulva</i> sp. (form unidentified)	Sea lettuce (form unidentified)															
PLANTAE: Ochrophyta	Brown algae															
<i>Alaria marginata</i>	"ribbon kelp"															
<i>Desmarestia</i> sp.	acid kelp															
<i>Soranthera ulvoidea</i>	"Studded Sea Balloons"															

[illegible]

Forage Fish Spawning Beach Survey

Beach	Date (MM/DD/YYYY)	Last High Tide Time (24hr)	Last High Tide Elevation (ft. in.)	Second Effective High Tide Time (24hr)	Second Effective High Tide Elevation (ft. in.)	Beach Station #	Time (24hr)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Beach	Uplands	Width (ft)	Length (ft)	Sample #	Landmark	Sample Zone (ft)	Tidal Elevation (ft. in.)	Shading	Sample Type	Smelt	Sand Lance	Rock Sole	Comments	Lead Sampler	Data Entry (Name)	QA/QC (Name)
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:30	48.41682	122.65164	2	4	10	C	1	5			1	0	0			Landmark for	Pete Hasse	Jason Morgan	
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:35	48.41640	122.65129	2	4	10	C	2	5			1	0	0			Landmark for	Pete Hasse	Jason Morgan	
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:40	48.41587	122.65099	2	4	10	C	3	5			1	0	0			Landmark for	Pete Hasse	Jason Morgan	
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:45	48.41544	122.65076	2	4	10	C	4	5			1	0	0			Landmark for	Pete Hasse	Jason Morgan	
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:50	48.41490	122.65063	2	4	10	C	5	5			1	0	0			Landmark for	Pete Hasse	Jason Morgan	
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:55	48.41434	122.65057	2	4	10	C	6	5			1	0	0			Landmark for	Pete Hasse	Jason Morgan	
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:30	48.41682	122.65164	8	4	10	C	1	2	4		1	0	0			Landmark for	Pete Hasse	Raylene Levi	
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:35	48.41640	122.65123	8	4	10	C	2	2	3		1	0	0			Landmark for	Pete Hasse	Raylene Levi	
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:40	48.41587	122.65099	8	4	10	C	3	2	3		1	0	0			Landmark for	Pete Hasse	Raylene Levi	
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:45	48.41544	122.65076	3	4	10	C	4	2	2		1	0	0			Landmark for	Pete Hasse	Raylene Levi	
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:50	48.41490	122.65063	3	4	10	C	5	2	3		1	0	0			Landmark for	Pete Hasse	Heidi Nichols	
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:50	48.41434	122.65057	3	4	10	C	6	2	4		1	0	0			Landmark for	Pete Hasse	Heidi Nichols	
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:15	48.41704	122.62193	8	2	18	C	1	5	0		2	0	0				Pete Hasse	Raylene Levi	
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:25	48.41665	122.65149	8	5	10	C	2	5	2		1	0	0				Pete Hasse	Raylene Levi	
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:30	48.41611	122.65113	8	5	10	C	3	5	2		1	0	0				Pete Hasse	Raylene Levi	
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:35	48.41565	122.65089	8	5	10	C	4	5	2		1	0	0				Pete Hasse	Raylene Levi	
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:40	48.41518	122.65065	8	2	10	C	5	5	3		1	0	0				Pete Hasse	Raylene Levi	
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:45	48.41460	122.65057	8	2	10	C	6	5	3		1	0	0				Pete Hasse	Raylene Levi	
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41699	122.65164	3	3	20	C	1	2	15		1	0	0		100'	Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41636	122.65129	3	5	25	C	2	2	17		1	0	0		300'	Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41587	122.65097	2	5	25	C	3	2	12		1	0	0		500'	Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41534	122.65078	2	5	25	C	4	2	10		1	0	0		700'	Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41478	122.65066	2	5	30	C	5	2	10		1	0	0		900'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		13:30	48.41679	122.65164	3	1	10	C	1	2	15		1	0	0		120'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		13:40	48.41631	122.65122	3	3	0	C	2	2	12		1	0	0		320'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		13:45	48.41585	122.65094	2	3	10	C	3	2	12		1	0	0		520'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		13:50	48.41533	122.65073	2	3	10	C	4	2	8		1	0	0		720'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		14:00	48.41479	122.65000	2	1	10	C	5	2	20		1	0	0		920'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:20	48.41693	122.65170	3	1	10	C	1	2	15		1	0	0		80'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:10	48.41643	122.65127	3	3	10	C	2	2	12		1	0	0		280'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:15	48.41590	122.65095	2	3	10	C	3	2	12		1	0	0		480'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:25	48.41536	122.65073	2	3	10	C	4	2	8		1	0	0		680'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:30	48.41485	122.65054	2	1	10	C	5	2	20		1	0	0		880'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:40	48.41427	122.65052	2	1	10	C	6	2	18		1	0	0		1080'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:00	48.41710	122.65191	3	2	20	C	1	2	12		2	0	0		0'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:05	48.41661	122.65142	3	4	20	C	2	2	4		1	0	0		200'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:10	48.41607	122.65099	3	4	20	C	3	2	0		1	0	0		400'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:15	48.41560	122.65079	3	4	20	C	4	2	3		1	0	0		600'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:20	48.41501	122.65059	2	3	20	C	5	2	4		1	0	0		800'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:25	48.41451	122.65051	2	2	20	C	6	2	4		1	0	0		1000'	Pete Hasse	Raylene Levi		

Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41705	122.65181	3	2	12	C	1	2	10	2	0	0	40'	Pete Hasse	Raylene Levi
Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41652	122.65132	3	5	12	C	2	2	8	1	0	0	240'	Pete Hasse	Raylene Levi
Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41603	122.65105	3	5	12	C	3	2	8	1	0	0	440'	Pete Hasse	Raylene Levi
Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41553	122.65082	3	5	20	C	4	2	4	1	0	0	640'	Pete Hasse	Raylene Levi
Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41494	122.65060	2	2	30	C	5	2	10	1	0	0	840'	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41716	122.65183	3	2	35	C	1	2	40	2	0	0	tree	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41664	122.65154	4	4	-	C	2	2	30	1	0	0	200'	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41618	122.65112	3	4	45	C	3	2	18	1	0	0	400'	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41569	122.65086	3	4	48	C	4	2	10	1	0	0	600'	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41516	122.65067	3	2	35	C	5	2	25	1	0	0	800'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41671	122.65150	3	4	60	C	1	2	30	1	0	0	160'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41618	122.65111	3	5	40	C	2	2	15	1	0	0	360'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41571	122.65085	3	5	40	C	3	2	15	1	0	0	560'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41519	122.65068	3	5	40	C	4	2	9	1	0	0	760'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41466	122.65054	3	5	40	C	5	2	6	1	0	0	960'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:10	48.41700	122.65186	2	1	30	C	1	2	14	2	0	0	60'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:15	48.41656	122.65129	2	1	30	C	2	2	14	2	0	0	260'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:20	48.41605	122.65098	2	5	10	C	3	2	9	1	0	0	460'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:30	48.41555	122.65076	2	5	10	C	4	2	9	1	0	0	660'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:35	48.91500	122.65060	2	3	12	C	5	2	9	1	0	0	860'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:00	48.41693	122.65174	2	1	15	C	1	2	10	2	0	0	80'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:15	48.41650	122.65126	2	1	15	C	2	2	10	2	0	0	280'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:20	48.41600	122.65090	2	5	15	C	3	2	6	1	0	0	480'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:25	48.41556	122.65077	2	5	15	C	4	2	4	1	0	0	680'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:30	48.41498	122.65060	2	5	10	C	5	2	8	1	0	0	880'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41703	122.65186	2	2	15	C	1	2	20	2	0	0	20'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41652	122.65149	2	5	25	C	2	2	30	1	0	0	220'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41609	122.65107	2	5	15	C	3	2	10	1	0	0	420'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41560	122.65086	2	5	18	C	4	2	15	1	0	0	620'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41510	122.65070	2	5	25	C	5	2	18	1	0	0	820'	Pete Hasse	Raylene Levi
Bowman Bay	7/12/2014	4:00	8'	18:00	8'	8:45	48.41680	122.65160	2	2	25	C	1	2	15	2	0	0	120'	Pete Hasse	Raylene Levi
Bowman Bay	7/12/2014	4:00	8'	18:00	8'	8:50	48.41636	122.65119	2	5	20	C	2	2	10	1	0	0	320'	Pete Hasse	Raylene Levi
Bowman Bay	7/12/2014	4:00	8'	18:00	8'	8:55	48.41584	122.65087	2	5	20	C	3	2	7	1	0	0	520'	Pete Hasse	Raylene Levi
Bowman Bay	7/12/2014	4:00	8'	18:00	8'	9:00	48.41520	122.65066	2	2	15	C	4	2	5	1	0	0	720'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:05	48.41682	122.65167	3	2	30	C	1	2	36	2	0	0	120'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:10	48.41636	122.65125	3	5	40	C	2	2	20	1	0	0	320'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:15	48.41583	122.65096	3	5	33	C	3	2	27	1	0	0	520'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:20	48.41532	122.65076	3	3	35	C	4	2	20	1	0	0	720'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:25	48.41483	122.65062	3	2	48	C	5	2	24	1	0	0	920'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:10	48.41693	122.65176	0	1	0	O	1	1	0	1	0	0	80'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:25	48.41643	122.65127	2	5	50	C	2	2	20	1	0	0	280'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:40	48.41590	122.65095	2	5	52	C	3	2	20	1	0	0	480'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:48	48.41536	122.65073	2	4	46	C	4	2	10	2	0	0	680'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:51	48.41485	122.65054	2	4	58	C	5	2	10	1	0	0	880'	Pete Hasse	Raylene Levi
Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:03	48.41667	122.65003	2	3	40	C	1	2	28	3	0	0	40'	Pete Hasse	Raylene Levi
Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:12	48.40028	122.65002	2	5	44	C	2	2	22	1	0	0	240'	Pete Hasse	Raylene Levi
Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:14	48.40027	122.65002	2	5	48	C	3	2	28	1	0	0	440'	Pete Hasse	Raylene Levi

Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:25	48.40026	122.65001	2	5	50	C	4	2	27	1	0	0	640'	Pete Hasse	Raylene Levi		
Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:30	48.40025	122.65001	2	4	55	C	5	2	18	2	0	0	840'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:15	48.41667	122.65003	2	2	45	C	1	2	30	3	0	0	20'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:20	48.40028	122.65003	2	5	42	C	2	2	30	1	0	0	220'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:25	48.40028	122.65001	2	5	50	C	3	2	17	1	0	0	420'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:30	48.40026	122.65001	2	5	48	C	4	2	18	1	0	0	620'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:35	48.40025	122.65001	2	5	35	C	5	2	15	1	0	0	820'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	9:15	48.41667	122.65003	2	2	43	C	1	2	25	2	0	0	120'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	9:30	48.40027	122.65002	2	5	40	C	2	2	20	1	0	0	320'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	9:00	48.40027	122.65002	2	5	38	C	3	2	12	1	0	0	520'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	9:40	48.40026	122.65001	2	5	44	C	4	2	15	2	0	0	720'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	10:00	48.40025	122.65001	2	5	50	C	5	2	20	2	0	0	920'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:08	48.41667	122.65002	3	4	40	C	1	2	18	1	0	0	180'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:14	48.40028	122.65002	3	5	36	C	2	2	14	1	0	0	380'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:20	48.40026	122.65002	2	5	40	C	3	2	12	1	0	0	580'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:25	48.40026	122.65001	2	5	36	C	4	2	9	1	0	0	780'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:30	48.40026	122.65001	2	5	36	C	5	2	9	1	0	0	980'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:03	48.41667	122.65003	5	2	30	C	1	2	22	4	0	0	20'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:09	48.40028	122.65002	5	5	40	C	2	2	20	1	0	0	220'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:16	48.40027	122.65002	5	5	25	C	3	2	21	1	0	0	420'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:18	48.40026	122.65001	5	5	36	C	4	2	1	1	0	0	620'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:23	48.40025	122.65001	5	5	35	C	5	2	0	1	0	0	820'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	7:35	48.41667	122.65003	2	3	40	C	1	2	30	1	0	0	120'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	7:50	48.40027	122.65002	2	5	30	C	2	2	27	1	0	0	320'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	8:00	48.40026	122.65002	2	5	30	C	3	2	16	1	0	0	520'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	8:05	48.40026	122.65001	2	5	34	C	4	2	8	1	0	0	720'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	8:10	48.40025	122.65001	2	4	30	C	5	2	21	1	0	0	920'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:08	48.41668	122.65003	5	3	75	C	1	2	22	2	0	0	20'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:15	48.40027	122.65003	5	5	60	C	2	2	22	1	0	0	320'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:20	48.40027	122.65002	5	5	50	C	3	2	12	1	0	0	420'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:25	48.40027	122.65001	5	5	40	C	4	2	10	1	0	0	680'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:30	48.40026	122.65001	4	4	35	C	5	2	5	1	0	0	820'	Pete Hasse	Raylene Levi		
Bowman Bay	12/8/2014	7:00	9'	16:00	8'	12:10	48.41697	122.65164	3	1	15	C	1	2	12	2	0	0	100'	Pete Hasse	Raylene Levi		
Bowman Bay	12/8/2014	7:00	9'	16:00	8'	12:19	48.41636	122.65129	3	4	13	C	2	2	10	1	0	0	300'	Pete Hasse	Raylene Levi		
Bowman Bay	12/8/2014	7:00	9'	16:00	8'	12:23	48.41587	122.65097	3	4	8	C	3	2	7	1	0	0	500'	Pete Hasse	Raylene Levi		
Bowman Bay	12/8/2014	7:00	9'	16:00	8'	12:25	48.41534	122.65066	3	4	7	C	4	2	7	1	0	0	700'	Pete Hasse	Raylene Levi		
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	1	15:02	48.41671	122.65158	4	5	60	1000		2	19	1	0	0	0 160'	Pete Hasse	Raylene Levi	
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	2	15:14	48.41621	122.65117	4	5	55	1000	1	2	10	1	B	0	0	0 360'	Pete Hasse	Raylene Levi
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	3	15:20	48.41575	122.65088	4	5	55	1000		2	9	1		0	0	0 560'	Pete Hasse	Raylene Levi
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	4	15:26	48.41522	122.65072	4	5	45	1000	1	2	5	2	B	0	0	0 760'	Pete Hasse	Raylene Levi
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	5	15:37	48.41468	122.65054	4	4	65	1000		2	7	2		0	0	0 960'	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	1	14:16	48.41706	122.65184	4	3	74	1000	1	2	10	4	V	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	2	14:30	48.41663	122.65143	4	2	78	1000	1	2	12	1	V	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	3	14:45	48.41616	122.65107	4	1	60	1000	1	2	2	1	V	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	4	15:00	48.41568	122.65061	4	1	80	1000	1	2	3	1	V	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	5	15:10	48.41516	122.65061	4	1	58	1000	1	2	0	1	B	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	1	13:01	48.41682	122.65164	4	2	58	1000	1	2	9	2	V	0	0	0 120'	Pete Hasse	Raylene Levi

Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	2	13:09	48.41640	122.65127	3	5	55	1000	1	2	2	1	V	0	0	0	320'	Pete Hasse	Raylene Levi
Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	3	13:16	48.41593	122.65093	4	5	51	1000	1	2	1	1	V	0	0	0	520'	Pete Hasse	Raylene Levi
Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	4	13:33	48.41541	122.65076	2	5	53	1000	1	2	1	1	B	0	0	0	720'	Pete Hasse	Raylene Levi
Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	5	13:26	48.41492	122.65059	3	4	68	1000	1	2	3	1	B	0	0	0	920'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	1	12:37	48.41668	122.65154	4	5	78	1000	1	2	16	1	V	0	0	0	180'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	2	12:45	48.41626	122.65116	4	5	54	1000	1	2	20	1	V	0	0	0	380'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	3	12:55	48.41577	122.65088	3	5	58	1000	1	2	10	1	V	0	0	0	580'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	4	13:02	48.41529	122.65070	4	5	50	1000	1	2	5	1	V	0	0	0	780'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	5	13:05	48.41479	122.65057	3	5	105	1000	1	2	8	1	V	0	0	0	980'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	1	13:07	48.41682	122.65164	4	2	75	1000	1	2	30	2	V	0	0	0	120'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	2	13:12	48.41637	122.65124	3	5	46	1000	1	2	18	1	B	0	0	0	320'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	3	13:18	48.41587	122.65092	3	5	50	1000	1	2	18	1	V	0	0	0	520'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	4	13:21	48.41538	122.65072	3	5	51	1000	1	2	9	1	V	0	0	0	720'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	5	13:24	48.41485	122.65060	3	5	70	1000	1	2	25	1	V	0	0	0	920'	Pete Hasse	Raylene Levi
100' From																								
N March Point	2/10/2015	8:00	8'2"	20:30	6'	1	13:04	48.49706	122.57255	2	5	15	700	1	2	5	1	B	0	0	0	big boat	Pete Hasse	Raylene Levi
N March Point	2/10/2015	8:00	8'2"	20:30	6'	2	13:13	48.49640	122.57299	2	5	15	700	1	2	4	1	B	0	0	0	300'	Pete Hasse	Raylene Levi
just w/ft old																								
N March Point	2/10/2015	8:00	8'2"	20:30	6'	3	13:16	48.49603	122.57335	2	5	6	700	1	2	5	1	B	0	0	0	boat launch	Pete Hasse	Raylene Levi
N March Point	2/26/2015	10:00	7'10"	23:59	6'10"	1	15:00	48.49717	122.57221	3	5	10	650	1	2	10	1	B	0	0	0	60'	Pete Hasse	Raylene Levi
N March Point	2/26/2015	10:00	7'10"	23:59	6'10"	2	15:15	48.49677	122.57262	3	5	18	650	1	2	10	1	B	0	0	0	260'	Pete Hasse	Raylene Levi
N March Point	2/26/2015	10:00	7'10"	23:59	6'10"	3	15:20	48.49639	122.57298	3	5	18	600	1	2	8	1	B	0	0	0	460'	Pete Hasse	Raylene Levi
N March Point	2/26/2015	10:00	7'10"	23:59	6'10"	4	15:30	48.49599	122.57341	4	5	12	650	1	2	10	1	B	0	0	0	660'	Pete Hasse	Raylene Levi
N March Point	3/10/2015	8:00	8'	20:30	6'10"	1	11:15	48.49706	122.57240	3	5	25	650	1	2	15	1	B	0	0	0	120' From	Pete Hasse	Raylene Levi
N March Point	3/10/2015	8:00	8'	20:30	6'10"	2	11:25	48.49663	122.57000	2	5	25	650	1	2	15	1	B	0	0	0	320'	Pete Hasse	Raylene Levi
N March Point	3/10/2015	8:00	8'	20:30	6'10"	3	11:30	48.49625	122.57319	3	5	20	650	1	2	15	1	B	0	0	0	520'	Pete Hasse	Raylene Levi
N March Point	3/22/2015	6:45	8'9"	18:45	8'	1	14:40	48.49722	122.57217	3	5	20	650	1	2	5	1	B	0	0	0	20'	Pete Hasse	Raylene Levi
N March Point	3/22/2015	6:45	8'9"	18:45	8'	2	14:50	48.49651	122.57288	2	5	12	650	1	2	5	1	B	0	0	0	220'	Pete Hasse	Raylene Levi
N March Point	3/22/2015	6:45	8'9"	18:45	8'	3	14:55	48.49621	122.57317	2	5	9	650	1	2	8	1	B	0	0	0	420'	Pete Hasse	Raylene Levi
N March Point	3/22/2015	6:45	8'9"	18:45	8'	4	15:00	48.49598	122.57339	3	5	12	650	1	2	8	1	B	0	0	0	620'	Pete Hasse	Raylene Levi

Forage Fish Spawning Beach Survey

Location	Date (MM/DD/YYYY)	Last High Tide Time (24hr)	Last High Tide Elevation (ft. in.)	Second Effective High Tide Time (24hr)	Second Effective High Tide Elevation (ft. in.)	Beach Station #	Time (24hr)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Beach	Uplands	Width (ft)	Length (ft)	Sample #	Landmark	Sample Zone (ft)	Tidal Elevation (ft. in.)	Shading	Sample Type	Smelt	Sand Lance	Rock Sole	Comments	Lead Sampler	Data Entry (Name)	QA/QC (Name)
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:30	48.41682	122.65164	2	4	10	C	1	5			1		0	0		Landmark fo Pete Hasse	Jason Morgan		
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:35	48.41640	122.65129	2	4	10	C	2	5			1		0	0		Landmark fo Pete Hasse	Jason Morgan		
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:40	48.41587	122.65099	2	4	10	C	3	5			1		0	0		Landmark fo Pete Hasse	Jason Morgan		
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:45	48.41544	122.65076	2	4	10	C	4	5			1		0	0		Landmark fo Pete Hasse	Jason Morgan		
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:50	48.41490	122.65063	2	4	10	C	5	5			1		0	0		Landmark fo Pete Hasse	Jason Morgan		
Bowman Bay	12/5/2013	7:30	9'2"	16:00	8'4"		11:55	48.41434	122.65057	2	4	10	C	6	5			1		0	0		Landmark fo Pete Hasse	Jason Morgan		
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:30	48.41682	122.65164	8	4	10	C	1	2	4		1		0	0		Landmark fo Pete Hasse	Raylene Levi		
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:35	48.41640	122.65123	8	4	10	C	2	2	3		1		0	0		Landmark fo Pete Hasse	Raylene Levi		
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:40	48.41587	122.65099	8	4	10	C	3	2	3		1		0	0		Landmark fo Pete Hasse	Raylene Levi		
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:45	48.41544	122.65076	3	4	10	C	4	2	2		1		0	0		Landmark fo Pete Hasse	Raylene Levi		
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:50	48.41490	122.65063	3	4	10	C	5	2	3		1		0	0		Landmark fo Pete Hasse	Heidi Nichols		
Bowman Bay	12/22/2013	8:30	8'10"	18:00	6'2"		12:50	48.41434	122.65057	3	4	10	C	6	2	4		1		0	0		Landmark fo Pete Hasse	Heidi Nichols		
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:15	48.41704	122.62193	8	2	18	C	1	5	0		2		0	0		Pete Hasse	Raylene Levi		
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:25	48.41665	122.65149	8	5	10	C	2	5	2		1		0	0		Pete Hasse	Raylene Levi		
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:30	48.41611	122.65113	8	5	10	C	3	5	2		1		0	0		Pete Hasse	Raylene Levi		
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:35	48.41565	122.65089	8	5	10	C	4	5	2		1		0	0		Pete Hasse	Raylene Levi		
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:40	48.41518	122.65065	8	2	10	C	5	5	3		1		0	0		Pete Hasse	Raylene Levi		
Bowman Bay	1/6/2014	8:45	9'4"	19:30	6'6"		13:45	48.41460	122.65057	8	2	10	C	6	5	3		1		0	0		Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41699	122.65164	3	3	20	C	1	2	15		1		0	0	100'	Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41636	122.65129	3	5	25	C	2	2	17		1		0	0	300'	Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41587	122.65097	2	5	25	C	3	2	12		1		0	0	500'	Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41534	122.65078	2	5	25	C	4	2	10		1		0	0	700'	Pete Hasse	Raylene Levi		
Bowman Bay	1/23/2014	9:15	8'8"	21:00	5'4"		12:00	48.41478	122.65066	2	5	30	C	5	2	10		1		0	0	900'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		13:30	48.41679	122.65164	3	1	10	C	1	2	15		1		0	0	120'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		13:40	48.41631	122.65122	3	3	0	C	2	2	12		1		0	0	320'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		13:45	48.41585	122.65094	2	3	10	C	3	2	12		1		0	0	520'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		13:50	48.41533	122.65073	2	3	10	C	4	2	8		1		0	0	720'	Pete Hasse	Raylene Levi		
Bowman Bay	2/6/2014	13:30	8'6"	22:00	6'		14:00	48.41479	122.65000	2	1	10	C	5	2	20		1		0	0	920'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:20	48.41693	122.65170	3	1	10	C	1	2	15		1		0	0	80'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:10	48.41643	122.65127	3	3	10	C	2	2	12		1		0	0	280'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:15	48.41590	122.65095	2	3	10	C	3	2	12		1		0	0	480'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:25	48.41536	122.65073	2	3	10	C	4	2	8		1		0	0	680'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:30	48.41485	122.65054	2	1	10	C	5	2	20		1		0	0	880'	Pete Hasse	Raylene Levi		
Bowman Bay	2/20/2014	8:00	8'2"	20:00	6'3"		11:40	48.41427	122.65052	2	1	10	C	6	2	18		1		0	0	1080'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:00	48.41710	122.65191	3	2	20	C	1	2	12		2		0	0	0'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:05	48.41661	122.65142	3	4	20	C	2	2	4		1		0	0	200'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:10	48.41607	122.65099	3	4	20	C	3	2	0		1		0	0	400'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:15	48.41560	122.65079	3	4	20	C	4	2	3		1		0	0	600'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:20	48.41501	122.65059	2	3	20	C	5	2	4		1		0	0	800'	Pete Hasse	Raylene Levi		
Bowman Bay	3/5/2014	7:00	8'6"	19:30	7'3"		10:25	48.41451	122.65051	2	2	20	C	6	2	4		1		0	0	1000'	Pete Hasse	Raylene Levi		

Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41705	122.65181	3	2	12	C	1	2	10	2	0	0	40'	Pete Hasse	Raylene Levi
Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41652	122.65132	3	5	12	C	2	2	8	1	0	0	240'	Pete Hasse	Raylene Levi
Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41603	122.65105	3	5	12	C	3	2	8	1	0	0	440'	Pete Hasse	Raylene Levi
Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41553	122.65082	3	5	20	C	4	2	4	1	0	0	640'	Pete Hasse	Raylene Levi
Bowman Bay	3/18/2014	6:30	8'	18:00	7'2"	9:00	48.41494	122.65060	2	2	30	C	5	2	10	1	0	0	840'	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41716	122.65183	3	2	35	C	1	2	40	2	0	0	tree	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41664	122.65154	4	4	-	C	2	2	30	1	0	0	200'	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41618	122.65112	3	4	45	C	3	2	18	1	0	0	400'	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41569	122.65086	3	4	48	C	4	2	10	1	0	0	600'	Pete Hasse	Raylene Levi
Bowman Bay	4/6/2014	9:30	6'6"	23:59	7'4"	12:00	48.41516	122.65067	3	2	35	C	5	2	25	1	0	0	800'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41671	122.65150	3	4	60	C	1	2	30	1	0	0	160'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41618	122.65111	3	5	40	C	2	2	15	1	0	0	360'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41571	122.65085	3	5	40	C	3	2	15	1	0	0	560'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41519	122.65068	3	5	40	C	4	2	9	1	0	0	760'	Pete Hasse	Raylene Levi
Bowman Bay	4/16/2014	7:30	7'3"	21:00	8'	9:00	48.41466	122.65054	3	5	40	C	5	2	6	1	0	0	960'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:10	48.41700	122.65186	2	1	30	C	1	2	14	2	0	0	60'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:15	48.41656	122.65129	2	1	30	C	2	2	14	2	0	0	260'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:20	48.41605	122.65098	2	5	10	C	3	2	9	1	0	0	460'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:30	48.41555	122.65076	2	5	10	C	4	2	9	1	0	0	660'	Pete Hasse	Raylene Levi
Bowman Bay	5/12/2014	3:00	7'8"	16:00	6'3"	9:35	48.91500	122.65060	2	3	12	C	5	2	9	1	0	0	860'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:00	48.41693	122.65174	2	1	15	C	1	2	10	2	0	0	80'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:15	48.41650	122.65126	2	1	15	C	2	2	10	2	0	0	280'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:20	48.41600	122.65090	2	5	15	C	3	2	6	1	0	0	480'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:25	48.41556	122.65077	2	5	15	C	4	2	4	1	0	0	680'	Pete Hasse	Raylene Levi
Bowman Bay	5/22/2014	12:30	8'4"	22:30	5'6"	9:30	48.41498	122.65060	2	5	10	C	5	2	8	1	0	0	880'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41703	122.65186	2	2	15	C	1	2	20	2	0	0	20'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41652	122.65149	2	5	25	C	2	2	30	1	0	0	220'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41609	122.65107	2	5	15	C	3	2	10	1	0	0	420'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41560	122.65086	2	5	18	C	4	2	15	1	0	0	620'	Pete Hasse	Raylene Levi
Bowman Bay	6/3/2014	8:30	5'2"	22:00	8'2"	10:00	48.41510	122.65070	2	5	25	C	5	2	18	1	0	0	820'	Pete Hasse	Raylene Levi
Bowman Bay	7/12/2014	4:00	8'	18:00	8'	8:45	48.41680	122.65160	2	2	25	C	1	2	15	2	0	0	120'	Pete Hasse	Raylene Levi
Bowman Bay	7/12/2014	4:00	8'	18:00	8'	8:50	48.41636	122.65119	2	5	20	C	2	2	10	1	0	0	320'	Pete Hasse	Raylene Levi
Bowman Bay	7/12/2014	4:00	8'	18:00	8'	8:55	48.41584	122.65087	2	5	20	C	3	2	7	1	0	0	520'	Pete Hasse	Raylene Levi
Bowman Bay	7/12/2014	4:00	8'	18:00	8'	9:00	48.41520	122.65066	2	2	15	C	4	2	5	1	0	0	720'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:05	48.41682	122.65167	3	2	30	C	1	2	36	2	0	0	120'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:10	48.41636	122.65125	3	5	40	C	2	2	20	1	0	0	320'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:15	48.41583	122.65096	3	5	33	C	3	2	27	1	0	0	520'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:20	48.41532	122.65076	3	3	35	C	4	2	20	1	0	0	720'	Pete Hasse	Raylene Levi
Bowman Bay	7/27/2014	4:30	6'10"	19:00	8'	9:25	48.41483	122.65062	3	2	48	C	5	2	24	1	0	0	920'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:10	48.41693	122.65176	0	1	0	0	1	1	0	1	0	0	80'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:25	48.41643	122.65127	2	5	50	C	2	2	20	1	0	0	280'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:40	48.41590	122.65095	2	5	52	C	3	2	20	1	0	0	480'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:48	48.41536	122.65073	2	4	46	C	4	2	10	2	0	0	680'	Pete Hasse	Raylene Levi
Bowman Bay	8/8/2014	2:00	7'10"	16:00	7'	9:51	48.41485	122.65054	2	4	58	C	5	2	10	1	0	0	880'	Pete Hasse	Raylene Levi
Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:03	48.41667	122.65003	2	3	40	C	1	2	28	3	0	0	40'	Pete Hasse	Raylene Levi
Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:12	48.40028	122.65002	2	5	44	C	2	2	22	1	0	0	240'	Pete Hasse	Raylene Levi
Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:14	48.40027	122.65002	2	5	48	C	3	2	28	1	0	0	440'	Pete Hasse	Raylene Levi

Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:25	48.40026	122.65001	2	5	50	C	4	2	27	1	0	0	640'	Pete Hasse	Raylene Levi		
Bowman Bay	8/27/2014	6:00	6'8"	18:30	7'8"	9:30	48.40025	122.65001	2	4	55	C	5	2	18	2	0	0	840'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:15	48.41667	122.65003	2	2	45	C	1	2	30	3	0	0	20'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:20	48.40028	122.65003	2	5	42	C	2	2	30	1	0	0	220'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:25	48.40028	122.65001	2	5	50	C	3	2	17	1	0	0	420'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:30	48.40026	122.65001	2	5	48	C	4	2	18	1	0	0	620'	Pete Hasse	Raylene Levi		
Bowman Bay	9/10/2014	5:20	7'2"	17:32	7'7"	9:35	48.40025	122.65001	2	5	35	C	5	2	15	1	0	0	820'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	9:15	48.41667	122.65003	2	2	43	C	1	2	25	2	0	0	120'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	9:30	48.40027	122.65002	2	5	40	C	2	2	20	1	0	0	320'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	9:00	48.40027	122.65002	2	5	38	C	3	2	12	1	0	0	520'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	9:40	48.40026	122.65001	2	5	44	C	4	2	15	2	0	0	720'	Pete Hasse	Raylene Levi		
Bowman Bay	9/24/2014	4:50	6'6"	16:33	7'	10:00	48.40025	122.65001	2	5	50	C	5	2	20	2	0	0	920'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:08	48.41667	122.65002	3	4	40	C	1	2	18	1	0	0	180'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:14	48.40028	122.65002	3	5	36	C	2	2	14	1	0	0	380'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:20	48.40026	122.65002	2	5	40	C	3	2	12	1	0	0	580'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:25	48.40026	122.65001	2	5	36	C	4	2	9	1	0	0	780'	Pete Hasse	Raylene Levi		
Bowman Bay	10/13/2014	9:29	7'5"	18:41	6'9"	13:30	48.40026	122.65001	2	5	36	C	5	2	9	1	0	0	980'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:03	48.41667	122.65003	5	2	30	C	1	2	22	4	0	0	20'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:09	48.40028	122.65002	5	5	40	C	2	2	20	1	0	0	220'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:16	48.40027	122.65002	5	5	25	C	3	2	21	1	0	0	420'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:18	48.40026	122.65001	5	5	36	C	4	2	1	1	0	0	620'	Pete Hasse	Raylene Levi		
Bowman Bay	10/27/2014	8:02	7'6"	17:24	6'4"	12:23	48.40025	122.65001	5	5	35	C	5	2	0	1	0	0	820'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	7:35	48.41667	122.65003	2	3	40	C	1	2	30	1	0	0	120'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	7:50	48.40027	122.65002	2	5	30	C	2	2	27	1	0	0	320'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	8:00	48.40026	122.65002	2	5	30	C	3	2	16	1	0	0	520'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	8:05	48.40026	122.65001	2	5	34	C	4	2	8	1	0	0	720'	Pete Hasse	Raylene Levi		
Bowman Bay	11/4/2014	1:58	6'3"	12:48	7'9"	8:10	48.40025	122.65001	2	4	30	C	5	2	21	1	0	0	920'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:08	48.41668	122.65003	5	3	75	C	1	2	22	2	0	0	20'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:15	48.40027	122.65003	5	5	60	C	2	2	22	1	0	0	320'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:20	48.40027	122.65002	5	5	50	C	3	2	12	1	0	0	420'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:25	48.40027	122.65001	5	5	40	C	4	2	10	1	0	0	680'	Pete Hasse	Raylene Levi		
Bowman Bay	11/19/2014	3:30	6'6"	13:30	8'	8:30	48.40026	122.65001	4	4	35	C	5	2	5	1	0	0	820'	Pete Hasse	Raylene Levi		
Bowman Bay	12/8/2014	7:00	9'	16:00	8'	12:10	48.41697	122.65164	3	1	15	C	1	2	12	2	0	0	100'	Pete Hasse	Raylene Levi		
Bowman Bay	12/8/2014	7:00	9'	16:00	8'	12:19	48.41636	122.65129	3	4	13	C	2	2	10	1	0	0	300'	Pete Hasse	Raylene Levi		
Bowman Bay	12/8/2014	7:00	9'	16:00	8'	12:23	48.41587	122.65097	3	4	8	C	3	2	7	1	0	0	500'	Pete Hasse	Raylene Levi		
Bowman Bay	12/8/2014	7:00	9'	16:00	8'	12:25	48.41534	122.65066	3	4	7	C	4	2	7	1	0	0	700'	Pete Hasse	Raylene Levi		
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	1	15:02	48.41671	122.65158	4	5	60	1000		2	19	1	0	0	0 160'	Pete Hasse	Raylene Levi	
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	2	15:14	48.41621	122.65117	4	5	55	1000	1	2	10	1	B	0	0	0 360'	Pete Hasse	Raylene Levi
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	3	15:20	48.41575	122.65088	4	5	55	1000		2	9	1		0	0	0 560'	Pete Hasse	Raylene Levi
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	4	15:26	48.41522	122.65072	4	5	45	1000	1	2	5	2	B	0	0	0 760'	Pete Hasse	Raylene Levi
Bowman Bay	1/11/2015	8:14	8'1"	18:49	5'4"	5	15:37	48.41468	122.65054	4	4	65	1000		2	7	2		0	0	0 960'	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	1	14:16	48.41706	122.65184	4	3	74	1000	1	2	10	4	V	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	2	14:30	48.41663	122.65143	4	2	78	1000	1	2	12	1	V	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	3	14:45	48.41616	122.65107	4	1	60	1000	1	2	2	1	V	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	4	15:00	48.41568	122.65061	4	1	80	1000	1	2	3	1	V	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	1/25/2015	8:46	8'6"	18:45	6'2"	5	15:10	48.41516	122.65061	4	1	58	1000	1	2	0	1	B	0	0	0	Pete Hasse	Raylene Levi
Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	1	13:01	48.41682	122.65164	4	2	58	1000	1	2	9	2	V	0	0	0 120'	Pete Hasse	Raylene Levi

Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	2	13:09	48.41640	122.65127	3	5	55	1000	1	2	2	1	V	0	0	0	320'	Pete Hasse	Raylene Levi
Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	"	13:16	48.41593	122.65093	4	5	51	1000	1	2	1	1	V	0	0	0	520'	Pete Hasse	Raylene Levi
Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	4	13:33	48.41541	122.65076	2	5	53	1000	1	2	1	1	B	0	0	0	720'	Pete Hasse	Raylene Levi
Bowman Bay	2/8/2015	6:50	7'9"	17:50	6'1"	5	13:26	48.41492	122.65059	3	4	68	1000	1	2	3	1	B	0	0	0	920'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	1	12:37	48.41668	122.65154	4	5	78	1000	1	2	16	1	V	0	0	0	180'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	2	12:45	48.41626	122.65116	4	5	54	1000	1	2	20	1	V	0	0	0	380'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	3	12:55	48.41577	122.65088	3	5	58	1000	1	2	10	1	V	0	0	0	580'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	4	13:02	48.41529	122.65070	4	5	50	1000	1	2	5	1	V	0	0	0	780'	Pete Hasse	Raylene Levi
Bowman Bay	2/22/2015	6:22	8'5"	17:47	7'	5	13:05	48.41479	122.65057	3	5	105	1000	1	2	8	1	V	0	0	0	980'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	1	13:07	48.41682	122.65164	4	2	75	1000	1	2	30	2	V	0	0	0	120'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	2	13:12	48.41637	122.65124	3	5	46	1000	1	2	18	1	B	0	0	0	320'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	3	13:18	48.41587	122.65092	3	5	50	1000	1	2	18	1	V	0	0	0	520'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	4	13:21	48.41538	122.65072	3	5	51	1000	1	2	9	1	V	0	0	0	720'	Pete Hasse	Raylene Levi
Bowman Bay	3/10/2015	7:26	7'4"	19:44	6'4"	5	13:24	48.41485	122.65060	3	5	70	1000	1	2	25	1	V	0	0	0	920'	Pete Hasse	Raylene Levi
NWMP	2/10/2015	8:00	8'2"	20:30	6'	1	13:04	48.49706	122.57255	2	5	15	700	1	2	5	1	B	0	0	0	100' From bi	Pete Hasse	Raylene Levi
NWMP	2/10/2015	8:00	8'2"	20:30	6'	2	13:13	48.49640	122.57299	2	5	15	700	1	2	4	1	B	0	0	0	300'	Pete Hasse	Raylene Levi
NWMP	2/10/2015	8:00	8'2"	20:30	6'	3	13:16	48.49603	122.57335	2	5	6	700	1	2	5	1	B	0	0	0	just w/ft old	Pete Hasse	Raylene Levi
NWMP	2/26/2015	10:00	7'10"	23:59	6'10"	1	15:00	48.49717	122.57221	3	5	10	650	1	2	10	1	B	0	0	0	60'	Pete Hasse	Raylene Levi
NWMP	2/26/2015	10:00	7'10"	23:59	6'10"	2	15:15	48.49677	122.57262	3	5	18	650	1	2	10	1	B	0	0	0	260'	Pete Hasse	Raylene Levi
NWMP	2/26/2015	10:00	7'10"	23:59	6'10"	3	15:20	48.49639	122.57298	3	5	18	600	1	2	8	1	B	0	0	0	460'	Pete Hasse	Raylene Levi
NWMP	2/26/2015	10:00	7'10"	23:59	6'10"	4	15:30	48.49599	122.57341	4	5	12	650	1	2	10	1	B	0	0	0	660'	Pete Hasse	Raylene Levi
NWMP	3/10/2015	8:00	8'	20:30	6'10"	1	11:15	48.49706	122.57240	3	5	25	650	1	2	15	1	B	0	0	0	120' From ra	Pete Hasse	Raylene Levi
NWMP	3/10/2015	8:00	8'	20:30	6'10"	2	11:25	48.49663	122.57000	2	5	25	650	1	2	15	1	B	0	0	0	320'	Pete Hasse	Raylene Levi
NWMP	3/10/2015	8:00	8'	20:30	6'10"	3	11:30	48.49625	122.57319	3	5	20	650	1	2	15	1	B	0	0	0	520'	Pete Hasse	Raylene Levi
NWMP	3/22/2015	6:45	8'9"	18:45	8'	1	14:40	48.49722	122.57217	3	5	20	650	1	2	5	1	B	0	0	0	20'	Pete Hasse	Raylene Levi
NWMP	3/22/2015	6:45	8'9"	18:45	8'	2	14:50	48.49651	122.57288	2	5	12	650	1	2	5	1	B	0	0	0	220'	Pete Hasse	Raylene Levi
NWMP	3/22/2015	6:45	8'9"	18:45	8'	3	14:55	48.49621	122.57317	2	5	9	650	1	2	8	1	B	0	0	0	420'	Pete Hasse	Raylene Levi
NWMP	3/22/2015	6:45	8'9"	18:45	8'	4	15:00	48.49598	122.57339	3	5	12	650	1	2	8	1	B	0	0	0	620'	Pete Hasse	Raylene Levi
Bowman Bay	4/10/2015	7:46	6'5"	21:39	6'9"	1	10:17	48.41673	122.65160	3	2	48	1000	1	2	12	1	V	0	0	0	160'	Pete Hasse	Raylene Levi
Bowman Bay	4/10/2015	7:46	6'5"	21:39	6'9"	2	10:36	48.41628	122.65120	2	5	42	1000	1	2	12	1	S	0	0	0	360'	Pete Hasse	Raylene Levi
Bowman Bay	4/10/2015	7:46	6'5"	21:39	6'9"	3	10:46	48.41579	122.65092	3	5	40	1000	1	2	10	1	V	0	0	0	560'	Pete Hasse	Raylene Levi
Bowman Bay	4/10/2015	7:46	6'5"	21:39	6'9"	4	10:53	48.41528	122.65076	3	4	33	1000	1	2	18	1	S	0	0	0	760'	Pete Hasse	Raylene Levi
Bowman Bay	5/6/2015	5:10	6'9"	19:04	7'5"	1	9:24	48.41688	122.65175	3	2	58	1000	1	2	28	2	S	0	0	0	80'	Pete Hasse	Raylene Levi
Bowman Bay	5/6/2015	5:10	6'9"	19:04	7'5"	2	9:38	48.41644	122.65131	4	5	38	1000	1	2	25	1	V	0	0	0	280'	Pete Hasse	Raylene Levi
Bowman Bay	5/6/2015	5:10	6'9"	19:04	7'5"	3	9:50	48.41594	122.65100	3	5	37	1000	1	2	15	1	S	0	0	0	480'	Pete Hasse	Raylene Levi
Bowman Bay	5/6/2015	5:10	6'9"	19:04	7'5"	4	10:00	48.41539	122.65075	3	5	30	1000	1	2	14	2	V	0	0	0	680'	Pete Hasse	Raylene Levi
Bowman Bay	5/6/2015	5:10	6'9"	19:04	7'5"	5	10:07	48.41482	122.65063	3	3	45	1000	1	2	20	1	V	0	0	0	880'	Pete Hasse	Raylene Levi
Bowman Bay	6/12/2015	0:27	7'9"	13:12	5'	1	14:17	48.41698	122.65184	3	3	12	1000	1	1	2	1	B	0	0	0	40'	Pete Hasse	Raylene Levi
Bowman Bay	6/12/2015	0:27	7'9"	13:12	5'	2	14:29	48.41648	122.65134	3	5	15	1000			1	1	V	0	0	0	240'	Pete Hasse	Raylene Levi
Bowman Bay	6/12/2015	0:27	7'9"	13:12	5'	3	14:36	48.41602	122.65104	3	5	6	1000	1	1	1	1	B	0	0	0	440'	Pete Hasse	Raylene Levi
Bowman Bay	6/12/2015	0:27	7'9"	13:12	5'	4	14:42	48.41551	122.65080	3	5	6	1000			1	1	V	0	0	0	640'	Pete Hasse	Raylene Levi
Bowman Bay	6/12/2015	0:27	7'9"	13:12	5'	5	14:46	48.41495	122.65061	3	4	15	1000			2	1	V	0	0	0	840'	Pete Hasse	Raylene Levi
NWMP	4/12/2015	10:30	6'4"	0:30	7'4"	1	14:30	48.49720	122.57223	2	5	18	650	1	2	12	1	B	0	0	0	40'	Pete Hasse	Raylene Levi
NWMP	4/12/2015	10:30	6'4"	0:30	7'4"	2	14:40	48.49680	122.52650	2	5	15	650	1	2	12	1	B	0	0	0	240'	Pete Hasse	Raylene Levi
NWMP	4/12/2015	10:30	6'4"	0:30	7'4"	3	14:48	48.49636	122.57307	2	5	12	650	1	2	10	1	B	0	0	0	440'	Pete Hasse	Raylene Levi
NWMP	4/12/2015	10:30	6'4"	0:30	7'4"	4	14:55	48.49596	122.73520	3	5	8	650	1	2	12	1	B	0	0	0	640'	Pete Hasse	Raylene Levi
NWMP	4/20/2015	11:00	5'4"	1:00	7'10"	1	14:45	48.49720	122.57222	3	3	20	650	1	2	18	1	B	0	0	0	40'	Pete Hasse	Raylene Levi

NWMP	4/20/2015	11:00	5'4"	1:00	7'10"	2	14:57	48.49678	122.57268	3	5	30	650	1	2	18	1	V	0	0	0 240'	Pete Hasse	Raylene Levi
NWMP	4/20/2015	11:00	5'4"	1:00	7'10"	3	15:05	48.49632	122.57302	3	5	20	650	1	2	18	1	B	0	0	0 440'	Pete Hasse	Raylene Levi
NWMP	4/20/2015	11:00	5'4"	1:00	7'10"	4	15:10	48.49601	122.57350	5	5	5	650	1	2	20	1	V	0	0	0 640'	Pete Hasse	Raylene Levi
NWMP	5/11/2015	10:00	5'8"	0:00	8'	1	11:45	48.49714	122.57221	2	5	29	650	1	2	15	1	B	0	0	0 40'	Pete Hasse	Raylene Levi
NWMP	5/11/2015	10:00	5'8"	0:00	8'	2	11:51	48.49667	122.57271	3	5	30	650	1	2	14	1	B	0	0	0 240'	Pete Hasse	Raylene Levi
NWMP	5/11/2015	10:00	5'8"	0:00	8'	3	12:00	48.49623	122.57309	2	5	17	650	1	2	14	1	B	0	0	0 440'	Pete Hasse	Raylene Levi
NWMP	5/11/2015	10:00	5'8"	0:00	8'	4	12:09	48.49600	122.57337	2	3	14	650	1	2	10	1	B	0	0	0 640'	Pete Hasse	Raylene Levi
NWMP	5/24/2015	9:00	5'4"	23:00	8'2"	1	13:20	48.49728	122.57106	3	4	27	580	1	1	2	1	B	0	0	0 80'	Pete Hasse	Raylene Levi
NWMP	5/24/2015	9:00	5'4"	23:00	8'2"	2	13:40	48.49685	122.57147	3	5	18	780	1	1	2	1	B	0	0	0 280'	Pete Hasse	Raylene Levi
NWMP	5/24/2015	9:00	5'4"	23:00	8'2"	3	13:50	48.49640	122.57188	3		18	980	1	1	2	1	B	0	0	0 480'	Pete Hasse	Raylene Levi
NWMP	6/14/2015	2:45	8'3"	16:30	6'10"	1	11:30	48.49722	122.57214	3	4	12	700	1	4	21	1	B	0	0	0 20'	Pete Hasse	Raylene Levi
NWMP	6/14/2015	2:45	8'3"	16:30	6'10"	2	11:40	48.49677	122.57261	3	4	12	700	1	4	21	1	B	0	0	0 220'	Pete Hasse	Raylene Levi
NWMP	6/14/2015	2:45	8'3"	16:30	6'10"	3	11:50	48.49633	122.57303	3	4	12	700	1	4	21	1	B	0	0	0 420'	Pete Hasse	Raylene Levi
NWMP	6/14/2015	2:45	8'3"	16:30	6'10"	4	12:00	48.49593	122.57346	4	4	10	700	1	4	15	1	B	0	0	0 620'	Pete Hasse	Raylene Levi
NWMP	6/30/2015	3:00	7'9'	17:30	7'2"	1	10:10	48.49690	122.57251	3	5	40	680	1	1	2	1	B	0	0	0 180'	Pete Hasse	Raylene Levi
NWMP	6/30/2015	3:00	7'9'	17:30	7'2"	2	10:20	48.49649	122.57291	3	5	25	1000	1	1	2	1	B	0	0	0 380'	Pete Hasse	Raylene Levi
NWMP	6/30/2015	3:00	7'9'	17:30	7'2"	3	10:30	48.49609	122.57337	4	3	22	550	1	1	2	1	B	0	0	0 580'	Pete Hasse	Raylene Levi

Field Observation Sampling Code

Beach: Sediment character of the upper beach (particle size range in inches)

- 0 = mud (<0.0025)
- 1 = pure sand (0.0025-0.079)
- 2 = pea gravel (0.079-0.31, "fine gravel") with sand base
- 3 = medium gravel (0.31-0.63) with sand base
- 4 = coarse gravel (0.63-2.5) with sand base
- 5 = cobble (2.5-10.1) with sand base
- 7 = boulder (>10.1) with sand base
- 8 = gravel to boulders without sand base
- 9 = rock, no habitat

Uplands: Character of the uplands (up to 1,000 ft from high water mark)

- 1 = natural, 0% impacted (no bulkhead, rip-rap, housing, etc.)
- 2 = 25% impacted
- 3 = 50% impacted
- 4 = 75% impacted
- 5 = 100% impacted

Width: Width of the potential spawning substrate band to the nearest foot. Judged by character of sediment and presence of spawn, when possible.

Length: Length of the beach up to 1,000 feet (500 feet on either side of the station).

Landmark: landmark for determining sample zone where collection occurs

- 1 = down beach from last high tide mark
- 2 = up beach from last high tide mark
- 3 = down beach from second to last high tide mark
- 4 = down beach from upland toe
- 5 = up beach from waterline at the time noted

Sample Zone: Distance of sample zone transect parallel to the landmark, in feet to the nearest ½ foot. Used to determine the tidal elevation of the spawn deposit.

Tidal Elevation: Determined in the office using location and time data provided.

Shading: Shading of spawning substrate zone, averaged over the 1,000 foot station and best interpretation for the entire day and season

- 1 = fully exposed
- 2 = 25% shaded
- 3 = 50% shaded
- 4 = 75% shaded
- 5 = 100% shaded

Sample Type: S=Scoop; V=Visual; B=Bulk; E=Elevation; C=Core; 3=3S-Bulk

Smelt, Sand Lance, Rock Sole: subjective field assessment of spawn intensity apparent to the naked eye:

- 0 = no eggs visible
- L = light, but apparent
- M = medium, readily visible
- H = heavy, broadly abundant
- W = eggs observed in winnow

Photos: Take 6 site photos standing at the center of the site, and record the file number of the 1st photo in the 6 photo series.

***Photo 1:** Completed sample tag

***Photo 2:** Sediment w/ scale at transect

Photo 3: Beach backshore

Photo 4: Beach right

Photo 5: Beach foreshore (towards water)

Photo 6: Beach left

**If multiple samples are collected at a single station, then only photos 1 and 2 need be repeated for each sample.*

****I certify that to the best of my abilities, the surveys recorded on this data sheet and the associated samples were collected and documented in accordance with WDFW approved protocols, and the information I am providing are the true and accurate results of these surveys.**

Lead Signature: _____

Beach	Uplands	Landmark	Shading	Sample Type
0	1	1	1	S
1	2	2	2	V
2	3	3	3	B
3	4	4	4	E
4	5	5	5	C
5				3
7				
8				
9				

Spawn Presence

O
L
M
H
W