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FINAL REPORT ☒

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Forage Fish Surveys

Introduction

In 2016 Clallam MRC joined the Northwest Straits Commission's forage fish monitoring efforts. Three Clallam MRC members and the project coordinator participated in a day long training provided by Washington Department of Fish and Wildlife (WDFW). Between October 2016 and March 2018 Clallam MRC conducted monthly surveys at two locations - Pitship Point adjacent to John Wayne Marina and at a public beach near Old Town east of Dungeness River. In April 2018 the sampling efforts were discontinued at these two sites and sampling was initiated at Cline Spit. These three sites are considered index sites by WDFW (Figure 1).



Figure 1. Sampling locations near Sequim, 2017-18.

In April 2017 the sampling effort was expanded to include monthly sampling at two sites on Ediz Hook. The sites were selected by the Lower Elwha Tribe in an effort to document forage fish spawning in the newly restored area along the inside of the spit. Since sampling commenced the sediment along the inside of the spit has coarsened and as a result the sampling locations have been moved progressively

further to the west (Figure 2).

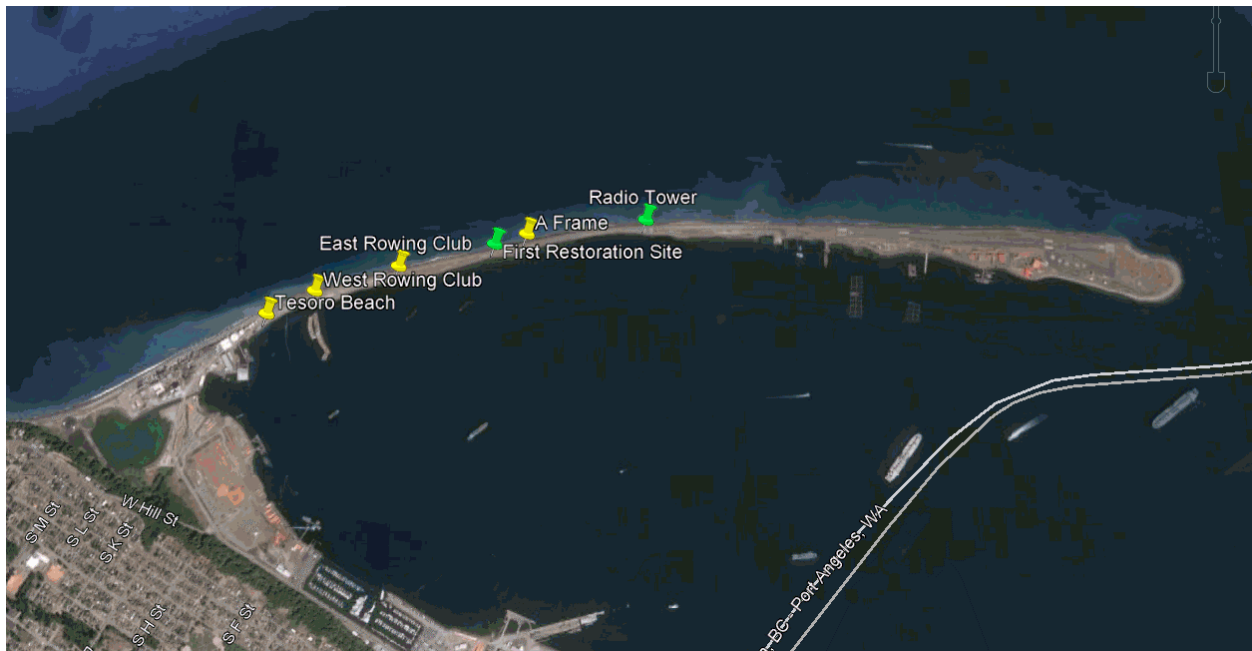


Figure 2. Sampling locations on Ediz Hook, 2017-18. Yellow sites are active and green sites are inactive (Google Earth map).

The effort was expanded again in July 2017 to include monthly sampling at two sites on the beach east of the Elwha River mouth. Lower Elwha tribal members have seen forage fish along this beach and the sampling effort may document if they are spawning in this area (Figure 3). All three sites are active; however, most of the sampling has taken place at the river mouth and East Beach Lake.



Figure 3. Locations of three restoration monitoring sites at Elwha Beach, Clallam County (Google Earth map).

In July 2018 Clallam MRC participated in the intensive biannual sampling event conducted by WDFW. The Clallam MRC members surveyed 10 beaches between Old Town near Sequim and Crescent Beach west of Port Angeles and collected samples at 9 of these beaches. All samples have been submitted to WDFW for laboratory analysis.

Results

The WDFW conducts the laboratory analysis of most of the samples collected by all the participating MRCs. Table 1 summarizes the results of the three index sites and the restoration sites. No eggs were found at either Pitship or Old Town in the sampling period of October 4, 2017 to March 20, 2018. Surf smelt eggs were found at Cline Spit in the months of April through July, 2018. Surf smelt, sand lance and rock sole eggs were found at different locations along Ediz Hook between February and June, 2018. Laboratory analysis of samples collected in July, August and September 2018 are in transit to the WDFW laboratory.

Table 2 summarizes the results of the intensive sampling event in July 2018. A couple of surf smelt eggs were found at Pitship and Dungeness Bluff.

Photos of the successful spawning beaches are shown in Figure 4. The photos were taken on the sampling days.

Table 1. Summary of WDFW laboratory analysis and database information on samples collected by Clallam MRC members and volunteers

Survey Date	Location	Beach Station	Sample	Field Sheet	Lab Sheet Sample	Photos	WDFW QAQC	Surf Smelt	Sand Lance	Rock Sole	Comments
10/4/2017	Elwha Beach	1	1	Y	Y	Y	Y	0	0	0	Elwha Mouth
10/4/2017	Elwha Beach	2	1	Y	Y	Y	Y	0	0	0	Angeles Point
10/4/2017	Ediz Hook	1	1	Y	Y	Y	Y	0	0	0	A frame
10/4/2017	Ediz Hook	2	1	Y	Y	Y	Y	0	0	0	Restoration
10/17/2017	Pitship Point	1	1	Y	Y	Y	Y	0	0	0	
10/17/2017	Old Town	1	1	Y	Y	Y	Y	0	0	0	
11/16/2017	Elwha Beach	1	1	Y	Y	Y	Y	0	0	0	Elwha Mouth
11/16/2017	Elwha Beach	2	1	Y	Y	Y	Y	0	0	0	East Beach Lake
11/16/2017	Ediz Hook	1	1	Y	Y	N	Y	0	0	0	A frame
11/16/2017	Ediz Hook	2	1	Y	Y	N	Y	0	0	0	East Row Club
11/29/2017	Pitship Point	1	1	Y	Y	Y	Y	0	0	0	
11/29/2017	Old Town	1	1	Y	Y	Y	Y	0	0	0	
12/11/2017	Pitship Point	1	1	Y	Y	Y	Y	0	0	0	
12/11/2017	Old Town	1	1	Y	Y	Y	Y	0	0	0	
12/13/2017	Ediz Hook	1	1	Y	Y	N	Y	0	0	0	A frame
12/13/2017	Ediz Hook	2	1	Y	Y	N	Y	0	0	0	East Row Club
1/23/2018	Pitship Point	1	1	Y	Y	Y	Y	0	0	0	
1/23/2018	Old Town	1	1	Y	Y	Y	Y	0	0	0	
1/24/2018	Ediz Hook	1	1	Y	Y	Y	Y	0	0	0	A frame
1/24/2018	Ediz Hook	2	1	Y	Y	Y	Y	0	0	0	East Row Club
1/24/2018	Elwha Beach	1	1	Y	Y	Y	Y	0	0	0	Elwha Mouth
1/24/2018	Elwha Beach	2	1	Y	Y	Y	Y	0	0	0	East Beach Lake
2/20/2018	Pitship Point	1	1	Y	Y	Y	Y	0	0	0	
2/20/2018	Old Town	1	1	Y	Y	Y	Y	0	0	0	
2/21/2018	Ediz Hook	1	1	Y	Y	Y	Y	0	0	5	A frame
2/21/2018	Ediz Hook	2	1	Y	Y	Y	Y	0	0	1	East Row Club
2/21/2018	Elwha Beach	1	1	Y	Y	Y	Y	0	0	0	Elwha Mouth
2/21/2018	Elwha Beach	2	1	Y	Y	Y	Y	0	0	0	East Beach Lake
4/19/2018	Cline Spit	1	1	Y	Y	Y	Y	1	0	0	

Table 1. Summary of WDFW laboratory analysis and database information on samples collected by Clallam MRC members and volunteers

Survey Date	Location	Beach Station	Sample	Field Sheet	Lab Sheet Sample	Photos	WDFW QAQC	Surf Smelt	Sand Lance	Rock Sole	Comments
5/16/2018	Cline Spit	1	1	Y	Y	Y	Y	230	0	0	
6/4/2018	Cline Spit	1	1	Y	Y	Y	Y	362	0	0	
3/19/2018	Ediz Hook	1	1	Y	Y	Y	Y	0	0	4	A frame
3/19/2018	Ediz Hook	2	1	Y	Y	Y	Y	2	0	0	West Row Club
3/20/2018	Old Town	1	1	Y	Y	Y	Y	0	0	0	Last time
3/20/2018	Pitship Point	1	1	Y	Y	Y	Y	0	0	0	Last time
4/17/2018	Ediz Hook	1	1	Y	Y	Y	Y	0	0	0	A frame
4/17/2018	Ediz Hook	2	1	Y	Y	Y	Y	0	0	0	West Row Club
5/15/2018	Ediz Hook	1	1	Y	Y	Y	Y	0	0	0	A frame
5/15/2018	Ediz Hook	2	1	y	Y	Y	Y	0	0	0	West Row Club
6/19/2018	Ediz Hook	1	1	Y	Y	Y	Y	1	0	0	W Row Club
6/19/2018	Ediz Hook	2	1	Y	Y	Y	Y	11	11	0	Tesoro Beach
7/18/2018	Cline Spit	1	1	Y	Y	Y	Y	224	0	0	
7/30/2018	Ediz Hook	In transit to WDFW laboratory									W Row Club
7/30/2018	Ediz Hook										Tesoro Beach
7/30/2018	Elwha Beach										Elwha Mouth
7/30/2018	Elwha Beach										East Beach Lake
8/9/2018	Cline Spit										
8/14/2018	Ediz Hook										A Frame
8/14/2018	Ediz Hook										Tesoro Beach
8/14/2018	Elwha Beach										Elwha Mouth
8/14/2018	Elwha Beach										East Beach Lake
9/11/2018	Cline Spit										
9/24/2018	Ediz Hook										W Row Club
9/24/2018	Ediz Hook										Tesoro Beach
9/24/2018	Elwha Beach	In transit to WDFW laboratory									Elwha Mouth
9/24/2018	Elwha Beach										East Beach Lake

Table 2. Summary of surf smelt eggs present during the intensive sampling in July by Clallam MRC members and volunteers

Survey Date	Location	Beach Station	Sample	Field Sheet	Lab Sheet Sample	Photos	WDFW QAQC	Surf Smelt	Sand Lance	Rock Sole	Comments
7/17/2018	Hollywood Beach	1	1	Y	Y	Y	Y	0	0	0	
7/17/2018	Rayonier	1	1	Y	Y	Y	Y	0	0	0	
7/17/2018	Salt Creek Beach	1	1	Y	Y	Y	Y	0	0	0	
7/17/2018	Crescent Beach	1	1	Y	Y	Y	Y	0	0	0	
7/18/2018	3 Crabs	1	1	Y	Y	Y	Y	0	0	0	
7/18/2018	Old Town	1	1	Y	Y	Y	Y	0	0	0	
7/18/2018	Pitship Point	1	1	Y	Y	Y	Y	1	0	0	
7/18/2018	Dungeness Landing	1	1	Y	Y	Y	Y	0	0	0	
7/18/2018	Dungeness Bluff	1	1	Y	Y	Y	Y	1	0	0	

Figure 4. Photos of successful spawning beaches. The photos were taken on the sampling days.



March 19, 2018 Ediz Hook A Frame



March 19, 2018 Ediz Hook West of Rowing Club



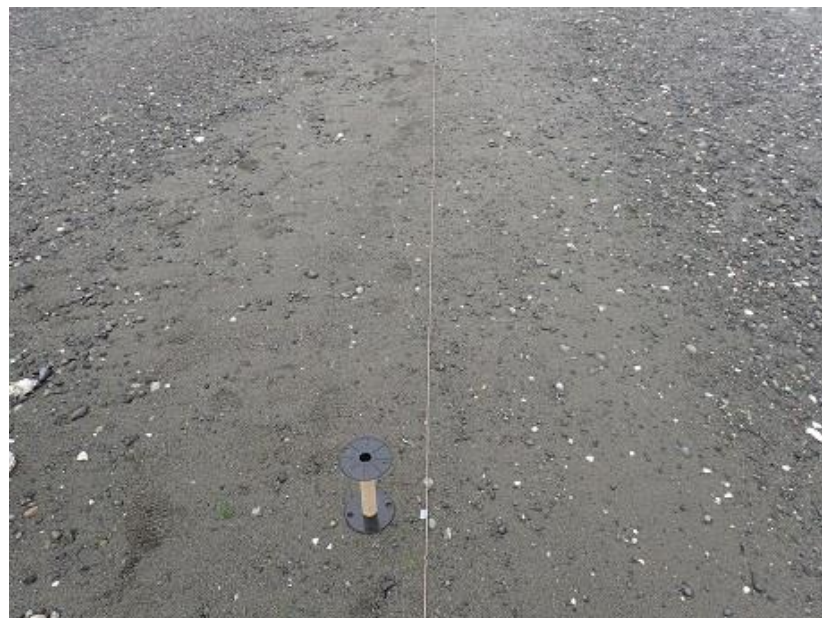
June 19, 2018 Ediz Hook West of Rowing Club



June 19, 2018 Ediz Hook Tesoro Beach



Cline Spit April 19, 2018



Cline Spit May 16, 2018



Cline Spit June 4, 2018



Cline Spit July 18, 2018



Pitship July 18, 2018



Dungeness Bluff July 18, 2018