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PROGRESS REPORT: [ ] FINAL REPORT [X]

PERIOD COVERED: July 1, 2017 – Sept.30, 2017

DATE SUBMITTED: Oct. 10, 2017

NOTE:

PART ONE contains the Beach Character Monitoring Info. See separate report.

PART TWO contains the Fort Townsend Visitor Survey Report for 2016-2017. There was no PR related to this task.

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Jefferson County Marine Resources Committee

2017 Visitor Survey Data and Summary
Fort Townsend State Park Nearshore Restoration Project
Oct 15, 2017

Overview

Jefferson County Marine Resources Committee (MRC) worked with citizen volunteers to conduct various monitoring activities for the Fort Townsend State Park shoreline restoration project. This was part of a shoreline restoration project sponsored by Northwest Straits Foundation, in partnership with Jefferson MRC and Washington State Parks. The goal for this aspect of the project was to measure any changes in visitor experiences or opinions as a result of a shoreline restoration project, outreach and new interpretive signs.

This report summarizes the work done by volunteers from the Jefferson MRC, Friends of Fort Townsend and WSU Beach Naturalists to conduct pre-construction (2015-2016) and post-construction (2017) visitor surveys.

Here are some highlights:

- Significant increase in visitors thinking access to the beach was easy.
- Slight increase in visitor understanding that overhanging vegetation provides benefits to fish.
- 91% of visitors noticed the signs and 80% said they read some or most of the signs.
- A majority of those who read the signs felt they learned something about why shoreline vegetation supports marine life.
- A majority of those who read the signs said they now understand more about what's happening underwater near the shore.
- There were no significant changes in responses to questions about armoring. In reality, we asked a very simple question about a very complicated topic, where the best answer is probably "it depends on specific site conditions and what you are trying to protect."

Background:

The MRC partnered with NW Straits Foundation and WA State Parks to remove much of a rock bulkhead and landing, and improve pedestrian access to the beach at Fort Townsend State Park. Two interpretive signs about nearshore habitats, bluff erosion and impacts of shoreline armoring were installed in October 2016. We wanted to measure if park visitors thought beach access had improved as a result of the project and if visitors have a better understanding of the impacts of shoreline armoring after completion of the project.

Methods:

Volunteers surveyed park visitors who walked down to the beach area. Surveys were conducted at various times of the day, mostly on weekends. Participants had the option to fill out a written survey on a clipboard or answer questions posed verbally from the surveyor. Most people filled out the survey themselves. If people had questions about the project, volunteers sometimes continued the conversation once a participant completed their survey.

Confidence Levels and Survey Approach:

Rebecca Sero-Lynn, WSU Extension Evaluation Specialist, provided guidance during the development of the survey. In the planning stages, we tried to determine the minimum number of surveys to have some confidence in how the answers reflected this target population, especially since we didn't know how many visitors would actually come to this site at various times. Being able to draw conclusions from a sample survey also depends on the percentage of visitors who agree to take the survey. Researchers usually aim for a confidence level of 95%. using an on-line survey calculator recommended by Dr. Sero-Lynn (https://www.surveysystem.com/sscalc.htm#one), we determined that with a confidence level of 95%, we should aim for 150-200 surveys completed before construction began.

Confidence Intervals (CI) help determine how likely that the responses accurately reflect the sampled population. That number is determined by the percent of the population sampled and the percent of people who selected a given response. In 2016, the 173 pre-construction surveys we collected gave us a **2016 confidence interval (CI)** of **3.3** for the worst-case scenario (if the response was 50/50). In **2017, our confidence interval was 5.5**. This meant that in 2016, if 50% percent of our sample picks a given answer, we can be "sure" that if we had asked the question of the entire relevant population, between 46.7% (50 minus 3.3) and 53.3% (50 plus 3.3) would have picked that answer. If the percentage of responses to a given question is higher than 50% (for example if 75% selected a given option) then the confidence interval is smaller and it's more likely that the answer reflects the general population sampled. (NOTE—this is a correction from the 2016 Fort Townsend Visitor Survey Report.)

In 2017, if 50% percent of our sample picks an answer, we can be "sure" that if we had asked the question of the entire relevant population, between 44.5% (50 minus 5.5) and 55.5% (50 plus 5.5) would have picked that answer. In general, we have limited discussion to general trends, but indicated below when we calculated specific confidence intervals for a given question and its responses. A higher level of statistical analysis is probably needed to accurately compare pre- and post-construction responses, but we noted trends in the following discussion.

Pre-Construction Surveys

The pre-construction visitor surveys were conducted in Aug-Sept 2015 and June-July 2016. Volunteers were stationed at the landing and conducted the surveys during one to two hour shifts. In 2015-16, 173 out of approximately 216 visitors took the surveys.

Post-Construction Surveys

The post-construction visitor surveys were conducted in Aug-Sept 2017. Volunteers were stationed part-way up the hill so they could catch people returning from the beach and see activity on the landing, but not influence sign-reading behavior. Again, volunteers conducted the surveys in one to two hour shifts. In 2017, 89 people out of approximately 123 visitors took the surveys. We also asked

the surveyors to observe the number of visitors stopping at the signs and note how long they spent there. Because the surveyors were also conducting surveys (and probably missed some observations), and the sign observations included kids and adults, the observation numbers are not consistent with total number of visitor asked to complete a survey.

All survey participants were at least 15 years old. Total number of visitors to the site during shift was sometimes difficult to track, as people were coming and going (or were already somewhere on the beach) while the surveyors were also talking to those who were taking the surveys. Best estimates for total adult visitors 15 years and older are provided. Also, some survey participants chose not to answer certain questions, and several had more than one reason for visiting the Park.

The summary of responses is included below. Original survey forms are stored in the MRC office and scanned copies are saved as back up. Data was tallied on spreadsheets by survey date, and written comments were reported, but not counted.

Analysis:

We compared the pre- and post-construction data using the basic confidence level information described above, but a higher level of statistical analysis would probably be useful to improve accuracy of our results.

Post-construction site conditions included changes to beach access and new colorful interpretive signs with two paragraphs of text. A few new questions about the interpretive signs and what people learned were added to the post-construction surveys, which gave us some indications of how many people read the signs and if they felt that they learned something from the signs.

Discussion:

1. **Users:** Most of the summer visitors to the restoration site were here because they were camping or wanted to walk on the beach (both pre- and post-construction).

2. **Beach Access**: The number of people who now considered beach access “very easy” or “easy” was much higher than before construction. (92% vs 50%).

3. **Overhanging Vegetation**: The majority of visitors knew that overhanging vegetation provides benefits to fish, with a slight indication of increased visitor understanding. (70% pre-construction (CI=3.0) increasing to 79% after construction (CI=4.5).

4. **Bluff Erosion is 'Good' or 'Bad':** This was probably a poorly worded question, as a number of people took the initiative to write in "it's natural", rather than pick one of the provided options. The percentage of people who selected "Overall, it's a bad thing" did decrease. (20% pre-construction (CI=2.6) to 14% post-construction (CI=3.8)), but this is not statistically significant.

5. **Forage Fish:** A comparison of pre- and post-construction seems to indicate more people now know about forage fish than before construction (41% before (CI=3.3) and 55% afterwards (CI=5.5). Responses to a second question (Question #6) about the fact that some fish lay eggs on the beach were similar for both years; more people than not knew that some fish lay their eggs on the beach, even though they may not identify them as "forage fish".

6. **Armoring:** There were no significant changes in responses to this question over time. Factoring in the confidence interval, more people still believe that armoring can bury and destroy beach habitat (75% vs 25% pre-construction (CI=2.9) and 71% vs 29% post-construction (CI=5). More people also continue to believe armoring is necessary to protect the shore from erosion (65% vs 35% pre-construction (CI=3.2) and 65% vs 35% post-construction (CI=5.2).

   In reality, we asked a very simple question about a very complicated topic, where the best answer is probably "it depends on specific site conditions and what you are trying to protect." Perhaps our audience understood that. Also, as at least one person noted, the Fort Townsend 'restoration' site provides a mixed message, since the site still has rock armoring to protect the landing and it's hard to see that the armoring was reduced in height and length compared to pre-construction.

7. **Signs:** The 2017 survey included new questions about the interpretive signs. We asked the volunteer surveyors to make some observations about visitors reading the signs and how long they spent doing so. 91% of visitors said they noticed the signs and 80% said they read some or most of the signs. We opted to give people three statements about what they learned and asked them to rate how much they agreed with each statement.

   - Those who read the signs felt that they learned something about why shoreline vegetation supports marine life (50% learned a little and 29% strongly agreed they'd learned something).
   - Those who read the signs said they now understand more about what's happening underwater near the shore (58% learned a little and 23% strongly agreed they now understand more).
   - Those who read the signs also learned more about bulkheads impacting beach habitats and not being "shore-friendly", but not as much as the previous two questions. 40% learned a little and 27% strongly agreed with the statement. This is not surprising, considering the limited information on the signs about this topic, the mixed messages at this site, and the armoring discussion above.

8. **Observing Time Spent Reading the Signs:** In addition to asking people if they read the signs, we also asked surveyors to observe the number of visitors stopping at the signs and to note how long they spent there. It was encouraging to see that 54% of those observed did stop in

front of the signs for more than 10 seconds, with another 7% stopping briefly (less than 10 seconds). One surveyor reported counting 24 people who did not stop to read the signs during his shift, but also noted that 15 of those 24 were kids (likely making a beeline for the beach.) Also, several people told surveyors that they come regularly to the beach, and had looked at the signs before. As a counter-point to this, another surveyor noted that after the visitors completed the survey, they went back down the hill to read the signs. ☺

Data Summary for Pre- & Post Construction
Fort Townsend Visitor Surveys (2015-2017)

Fort Townsend Visitor Survey Aug-Sept 2017

Surveyors: Cheryl Lowe, Wade Crouch, Anna Bachman, Sarah Fisken, Alice Clive

Total people: 89 people participating in the survey, out of roughly 123 qualifying visitors

Questions	2017 TOTALS	% of 2017 total	2016 TOTALS	% of 2016 total
1a. event	15	**16%**	16	**9%**
1b camping	35	**38%**	73	**40%**
1c walk	28	**31%**	62	**34%**
1d. other	13	**14%**	33	**18%**
sub-total	91		184	
2a. V easy	30	**34%**	21	**12%**
2b. Easy	51	**58%**	67	**38%**
write-in "medium"	3	**3%**		
2c difficult	4	**5%**	62	**35%**
2d V.difficult	0	**0%**	8	**5%**
2e. didn't go	0	**0%**	17	**10%**
sub-total	88		175	
3a yes	70	**79%**	124	**70%**
3b no	1	**1%**	9	**5%**
3c. Don't know	18	**20%**	44	**25%**
sub-total	89		177	
4a good thing	36	**39%**	66	**39%**
4b.bad thing	13	**14%**	34	**20%**
4c. Don't know	34	**37%**	70	**41%**
comments "natural"	10	**11%**		
sub-total	93		170	
5a.ff yes	47	**55%**	72	**41%**
5b. Ffno	34	**40%**	96	**55%**
5c. Don't know	5	**6%**	6	**3%**
sub-total	86		174	
6a eggs yes	48	**54%**	94	**54%**
6b. Eggs no	29	**33%**	61	**35%**
6c. Don't know	12	**13%**	20	**11%**
sub-total	89		175	
7a. Armor protects-Tru	50	**65%**	105	**65%**
7a. Armor protects-False	27	**35%**	56	**35%**
sub-total	77		161	
7b Armor healthy beach-Tr	40	**51%**	65	**46%**
7b Armor healthy beach-False	38	**49%**	76	**54%**

sub-total	78			141	
7c Armor buries beach-True		57	**71%**	112	**75%**
7c Armor buries beach-False		23	**29%**	38	**25%**
sub-total	80			150	

BACKGROUND QUESTIONS		**2017**		**2016**	
# femaile		45	51%	86	50%
# male		31	35%	83	48%
not recorded on survey		13	15%	4	2%
sub-total	89			173	

11a 15-24 yrs old		5	6%	17	10%
11b 25-39 yrs old		28	33%	35	20%
11c 40-55 yrs old		29	34%	59	34%
11d 56+ yrs old		24	28%	62	36%
sub-total	86			173	

NEW 2017 QUESTION			
8a signs yes		79	91%
8b signs no		4	5%
8c signs don't remember		4	5%
sub-total	87		
9a read yes most		60	70%
9b read yes some		9	10%
9c No		17	20%
sub-total	86		

Fort Townsend Visitor Survey Aug-Sept 2017 (continued)

NEW 2017 QUESTIONS

	1-nothing	2-not really	3-neutral	4-learned a little	5-strong agree w statement	SUB-TOTALS	1-nothing	2-not really	3-neutral	4-learned a little	5-strong agree w statement
10a-learn shr vegetn	3	3	8	33	19	66	5%	5%	12%	50%	29%
10b-underst underwater	2	2	9	38	15	66	3%	3%	14%	58%	23%
10c-undrst bulkhead impacts	3	3	15	25	17	63	5%	5%	24%	40%	27%

Surveyor Observations about Signs	# of people	% observed	
Didn't stop	24	32%	* 15 of these were kids.
Glanced at it	6	8%	
Stopped < 10 seconds	5	7%	
Longer than 10 seconds	41	54%	
total # observed	**76**		

**Total visitor count here may include children

2017 Written Responses

	Duplicate Comment
1. Why Are You Here? "Other"	
have a picnic	1
place of refuge/serenity	2
relax	1
to see what's here	1
clam digging	1
hike/walk trails	5
see town and mill	1
I love this park.	1
2. Access to the beach	
medium (not easy, not difficult) -not offered as answer option	3
A bit difficult-loose gravel and I'm elderly and cautious	1
4.a. Eroding bluffs [are]:	
It's natural	9
"it's a natural progression of interaction between waves and shoreline"	1
7. Armoring	
Armonring is necessary, but not necessarily healthy.	1
Accept [except] the trying to be natural larmonring on the FT beach	1
10. What you learned	
I knew these things already, so didn't learn anything new...	1
Mixed message	1
General Comments	
[fish lay eggs on beach]: "no, but that's cool"	1
A local/regular visitor who worried that improvements would bring crowds down to this quiet beach was glad to see that numbers of visitors didn't change much.	1
[age group] 78!	1

Photos Of Survey And Interpretive Signs

Visitors taking survey (Lyn Chen and Anne Lowe)

Observing visitors from 2017 surveyor position.

Interpretive sign

Copy of 2017 Volunteer Instructions & Visitor Survey

Jefferson County Marine Resources Committee

2017 Visitor Survey Instructions and Forms
Fort Townsend State Park Nearshore Restoration Project

Overview

Jefferson County Marine Resources Committee (MRC) worked with citizen volunteers to conduct various monitoring activities for the Fort Townsend State Park shoreline restoration project, as part of a shoreline restoration project sponsored by Northwest Straits Foundation, in partnership with Jefferson MRC and Washington State Parks. We are trying to measure if visitors found it easier to get to the beach and/or learned something by reading the signs or learning about it through various outreach efforts over the last year.

Funding for the shoreline restoration was provided by grants to the Northwest Straits Foundation (NWSF) by the Environmental Protection Agency – National Estuary Program (EPA-NEP) through the Puget Sound Marine and Nearshore Grant Program.

Background:

The MRC partnered with NW Straits Foundation and WA State Parks to remove most of a rock bulkhead and landing, and improve pedestrian access to the beach at Fort Townsend State Park. Two new interpretive signs about nearshore habitats, bluff erosion and impacts of shoreline armoring were installed in October 2016. We want to measure if park visitors think beach access has improved as a result of the project and if visitors have a better understanding of the impacts of shoreline armoring after completion of the project.

Methods:

Before the restoration, volunteers surveyed park visitors who came down to the beach area. A similar survey is being conducted now (summer 2017, post-construction). Surveys are being conducted at various times of the day, mostly on weekends.

Participants have the option to fill out a written survey on a clipboard or answer questions posed verbally from the surveyor. Most people fill out the survey themselves. If people have questions about the project, volunteers may continue the conversation once a participant completed their survey.

All survey participants are at least 15 years old. Some survey participants chose not to answer certain questions.

VOLUNTEER INSTRUCTIONS

Fort Townsend State Park Shoreline Restoration
Visitor Survey Questions

Overview

Goal:
Try to measure changes in visitor knowledge as a result of a restoration project, outreach and new interpretive signs.

Background:
We removed much of a large rock bulkhead and improved pedestrian access to the beach at Fort Townsend State Park. Two new interpretive signs about nearshore habitats, bluff erosion and impacts of shoreline armoring were installed in fall 2016. We had articles in the local newspaper before construction along with other outreach activities and a project celebration following construction.

We are conducting a very basic evaluation of park visitor knowledge to see if visitors think that beach access has improved as a result of the project and if visitors have a better understanding of the impacts of shoreline armoring than before we started.

Staging:
Volunteers will survey visitors who come to the beach access area during busy weekends in late summer 2017, a year after installation. A similar survey was conducted at the same beach access area before the project was completed and the interpretive signs installed. Surveys will be conducted both in the morning and in the afternoon, depending on the weekend and the tides.

Volunteers (with name tags) will provide a very brief introduction, "Hi, I'm xxx and I'm helping State Parks with a short visitor survey. May I ask you a few questions?"
Participants are first offered the option to fill out a written survey on a clipboard, but you can also ask the questions verbally if they insist. **BRING at least 3 pencils/pens and several clipboards or something hard to write on. Then you can ask everyone in a couple or group to fill one out at once.**

Volunteers should make sure the visitor circles the gender option at the top of the survey. Volunteers have their own form to record total number of visitors returning from the beach the site while they are there, whether they filled out the survey or not. This form also asks you to record observations about visitors reading the signs.

Only people who are 15 yrs old or older should fill out the form.

NOTES:
Volunteers may continue the conversation if people have questions. This is an opportunity to describe the restoration project (before the construction) and offer information about the various organizations that are involved in the project.

Data Collection Cover Sheet for Surveyors

(Complete each time you are on site)

Surveyor Name: _____
Date: _____
Start time & End Time:_____

Approximate tide height during survey time:

- **_____ high tide (up to the rocks)**
- **_____ medium tide (some beach in front of the rocks)**
- **_____ low tide (lots of beach exposed)**

Total # of visitors coming to the site during your shift (Count only those coming back from the beach during your shift, as we are comparing this # to those filling out the survey):

_____

Interpretive Sign Observations

From the bench, please watch for visitors stopping at one or both interpretive signs. Record below how much time they spend looking at one or both signs (use tally marks to record # of people in each category). For this tally, count all visitors headed to beach or returning for this tally. Don't worry if you miss a few because you are talking to someone.

Didn't stop	**Glanced at it**	**Brief stop (less than 10 seconds)**	**Longer time (more than 10 seconds)**

Other comments/observations:

Photo of Fort Townsend dock (late 1800s?)

Comparison of old and new landing area. Ramp extends in direction of arrow.

2017 Fort Townsend Visitor Survey Male Female Date:

1. What was the main reason why you came to Fort Townsend State Park today?
    a. To attend a gathering or event
    b. To camp overnight at the Park
    c. To walk on the beach
    d. Other: _____

2. On a scale of very easy to very difficult, how much effort did it take to get down to the beach itself? Would you say:
    a. Very easy
    b. Easy
    c. Difficult
    d. Very difficult
    e. I am not/did not go to the beach today because:

    _____

3. Do you think trees and overhanging vegetation along the shoreline provide any benefits to fish?
    a. Yes
    b. No
    c. I don't know

4. When you walk the beach, you may see (have seen) areas where portions of the bluffs are eroding and making sand piles at the base of the bluff. What do you think about this?
    a. Overall, it's a good thing
    b. Overall, it's a bad thing
    c. I don't know
    d. Other comments: _____

5. Have you heard of forage fish?
    a. Yes
    b. No
    c. I don't know

6. Do you know that some fish lay their eggs on the beach during high tides?
    a. Yes
    b. No
    c. I don't know

7. We use the term "armoring" to describe bulkheads, pilings and large rock walls that are built to protect shorelines. Please tell us if you think the following statements about armoring are **true or false**:
    a. Armoring is necessary to protect the shore from erosion T F
    b. Armoring helps keep the beach healthy T F
    c. Armoring can bury and destroy beach habitat T F

8. Did you notice the colorful informational signs located at the beach landing?
    a. Yes
    b. No
    c. I don't remember

9. **IF YES,** did you read one or both of the signs?
    a. Yes, mostly
    b. Yes, some of it
    c. No

10. **IF YOU READ THE SIGNS,** please rate the following statements. **If you did not read them, skip to question #11**.

    a. "I learned something about why shoreline vegetation helps support marine life near the beach."

1	2	3	4	5
Learned nothing	Not really	Neutral	Learned a little	Strongly agree

    b. "I now understand more about what's happening underwater near the shore."

1	2	3	4	5
Definitely not	Not really	Neutral	Learned a little	Strongly agree

    c. "I understand more about how bulkheads and armoring impact beach habitats and are not "shore-friendly".

1	2	3	4	5
Definitely not	Not really	Neutral	Learned a little	Strongly agree

11. Please tell us what age group you belong in:
    a. 15 to 24 years old
    b. 25 to 39 years old
    c. 40 to 55 years old
    d. 56 yrs and older

12. That's the end of our survey. Thank you very much for your help!