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DELIVERABLES FOR TASK NO: **TASK 6.6 March Point Baseline Survey**

PROGRESS REPORT: [] FINAL REPORT [**X**]

PERIOD COVERED: **January 1, 2011 – June 30, 2011**

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Project Update Summary: *March Point Baseline Survey*

Date: June 28, 2011

Project Lead Volunteer: Tim Manns (WSU Skagit County Beach Watchers)

In May and June 2011, Washington State University Skagit County Beach Watchers carried out this year's March Point Baseline Survey. Because the Beach Watchers Coordinator position is vacant, a Beach Watcher volunteer acted as project lead.

Re-locating Transects

On May 23, 2011, Beach Watchers Tom Richards, Mike Mohundro, and Tim Manns used data and notes from past years to re-locate the starting points for the 8 transects which Beach Watchers have been monitoring at March Point along Padilla Bay. From south to north, these include two closely-spaced transects along the feeder bluff for drift cell SK-E-2, two transects south of and two north of the boat launch that was removed last summer, and two transects near the north end of the cell. The Beach Watchers sorted out ambiguities and gaps in the notes and data, improved the marking of the transect start points, and gathered additional photographs, notes, measurements, and GPS readings to ease future field work.

Tesoro Contact

Tim Manns phoned the security staff at Tesoro (360-293-3111) both before the re-location field work in May and before the data collection days in June to inform them of the project. Captain Dave Corrion was very accommodating.

Training

On June 14, 2011, Tim presented a two-hour training at the Anacortes Library for Beach Watcher volunteers. Attendees included two involved with the project in past years and 5 people from this year's Beach Watchers class who were new to this project. Training topics included the purpose of the project, basic drift cell dynamics, equipment, protocols, role assignments, and safety.

Equipment

As in previous years, the transit and stadia rod were borrowed from the Skagit River System Cooperative. We appreciate the help and support of Aundrea McBride, Rich Henderson, and Bruce Brown in loaning this equipment. Most other equipment used for this project belongs to the Skagit County Beach Watchers organization. Efficient completion of data collection also depended on the use of several volunteer's cameras and compass.

Field Work

June 15 and 16 were chosen for the field work because of their minus tides (-2.7 and -2.9), the mandate to complete the work in June, and the availability of volunteers. Re-locating and marking the transect start points in advance, and re-checking the marks the day before field work began, enabled us to begin quickly both days and complete 4 transects each day. Having a sufficient number of volunteers and adequate equipment and forms to put them to work were important factors in completing data collection in two days. Many Beach Watcher volunteers

juggle a wide range of commitments, and fielding a sufficient crew on three consecutive days is generally difficult.

On June 14, fourteen Beach Watchers participated at March Point. Only one had not participated in previous years or attended this year's training. Two volunteers arrived at 8:00 am to establish the first transect with the remainder arriving by 9:10 am and the last ones finishing at 1:45 pm. On June 15, there were again fourteen volunteers, two of whom were not available the previous day. Again two volunteers arrived early to establish the first transect. The remainder of the crew arrived from 9:30 am to 9:50 am, as previously arranged and were assigned to crews. All work at the site was completed by 2:30 pm. In all, 16 volunteers participated in the project. The transects were completed in the following order, from north to south: D2, D1, B4, B2, B3, B1, E1, E2. We noted that it works well to set up the first transect before the other volunteers arrive and have them begin about 1 hour 45 minutes before the low tide.

The transit crew comprised the same 3 volunteers both days, all of whom also participated in 2010: stadia rod holder, transit person, and recorder. Taking elevations went faster than either pebble counts or quadrat work and enabled us to establish a second transect while work on the first transect continued. While data collection was underway, two 50-meter tapes marked each transect. (An unsuccessful attempt was made on June 14 to find the USGS elevational benchmark reportedly in the vicinity of the now-removed boat launch. Tall grass in the vicinity may be obscuring the plate. As in previous years, we did note an Army Corps of Engineers benchmark ("RP-2, March 2008") at the ground surface approximately 2 meters south and a half meter west of the concrete block whose corner is both reference mark 148 and the start point for transect D-1).

A Pebble Count crew of two people alternated the tasks of measuring and recording substrate at representative locations on the upper and lower beach (one of each per transect). When sufficient volunteers were available, two Pebble Count crews were at work at once.

There were up to 3 Quadrat crews working simultaneously, each with one person calling out the data, another recording, and a third preparing the photo documentation board and taking the pictures. When 2 Quadrat crews were fairly close to each other, one photographer was able to serve both. Having sufficient data sheets, clipboards, cameras, etc. to supply all the crews was key to efficiently completing the work in the time which the tide and volunteer availability allowed.

Comments on Methods

It appears that in past years the compass bearing for each transect was not taken with a declination-adjusted compass. To establish a sounder basis for future years, this year we took bearings with the current declination as given by the NOAA National Geophysical Data Center's website (http://www.ngdc.noaa.gov/geomagmodels/Declination.jsp). The declination is now 17 degrees 2 minutes for Anacortes and 16 degrees 55 minutes for Mount Vernon. Working within the limitations of the available compass, we set the declination at 17 degrees and recorded all transect bearings as well as bearings from reference points with this declination. Our goal was to, wherever possible, closely replicate the bearing of last year's transects. In some cases, it was noted last year that transects ran from the start point towards a particular, fixed channel marker.

In these cases, we replicated that orientation and recorded the bearing based on the current declination-adjusted compass. Where last year's transect bearings were not linked to a distant fixed point and the bearing noted last year did not represent a transect reasonably perpendicular to the shoreline (as called for in the protocol), we established a bearing which did achieve this result.

On each survey form, the point at which the transect reached a noticeably reduced gradient was noted. We also noted the point at which eelgrass was first encountered on each transect. Where possible, the survey was continued 20 meters beyond the first eelgrass. On a number of the transects, very sparse eelgrass was followed by recurrence of 100% *Ulva* with no eelgrass for a longer distance than we could survey given the tides and equipment limitations. For example, on Transect B3, the first eelgrass plant was at 77.76 meters. The next approximately 10 meters had very sparse eelgrass and then solid *Ulva* again to the water's edge. A similar pattern was found on Transect B1 with the first eelgrass at 81.30 meters, very sparse eelgrass for the next 2 meters, and then complete coverage by *Ulva* for the remainder of the low beach to the waterline. In both these examples, the eelgrass occurred only where there was standing water while the tide was out.

The same data collection methods were followed as in 2010. Half-meter square quadrats were placed at 0 meters and then every 2 meters. For each quadrat, vegetation was noted at 25 points and then substrate was recorded for the same 25 points. Each quadrat location was photographed before any disturbance of the area. On Transect B2 and others, for many quadrats on the lower beach it was difficult to distinguish between silt and sand in assessing the substrate. On much of the lower beach, there was a thin layer of sand/silt over mixed gravel and cobble.

For each of the 8 transects, one Pebble Count was done within a representative 10-square foot area on the upper beach and one on the lower beach. For each count, one person walked a spiral, periodically reaching down to touch the substrate without looking, then characterizing the substrate according to a key (sand, silt, etc.) or taking the longest linear measurement in the case of pebbles, cobbles, and boulders. One hundred points were recorded for each Pebble Count.

Follow-up and Recommendations

- Several of the transect start points are marked in a relatively permanent manner (e.g. with a nail drilled into a stone or with an attached and numbered metal disk). It would be very helpful to improve some of these and to provide more lasting markings for the others.
- Aundrea McBride stated that she may be able to obtain much more accurate GPS locations for the transect start points than those on hand. While this is good to do, if Beach Watchers are involved in future data collection using these transects, it is most important to make the start points easy to find without advanced equipment to which the volunteers do not have access.
- An updated equipment list has been prepared to support the approach used this year of having multiple teams collecting data simultaneously. Particular attention should be paid to having enough equipment to productively use all potential volunteers, as we did this year. Having enough digital cameras, each with additional batteries, is important. Volunteers were readily willing to use their own cameras in addition to the one belonging to the Beach Watchers program.

- As volunteer time is available this summer, we are labeling and arranging the documentary photos and entering the quadrat and pebble count data as in previous years.

Participants

Beckie Arnold
Chris Brown
Betty Connor
Bill Connor
Elizabeth Cumming-O'Berry
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