



Dunes Climate Ready Grant Update

November 2015-January 2016

DUNES CLIMATE READY GRANT QUARTERLY UPDATE

The Dunes Climate Ready Grant (Coastal Vulnerability and Adaptation Study) is funded by the State Coastal Conservancy's Climate Ready Program. It is designed to further understanding of how climate change will impact Humboldt's coastal dunes and test the effectiveness of different adaptation strategies. As part of the education and outreach component of the grant, quarterly email updates are sent to email subscribers keeping them up to date on the progress of the grant.

Second Quarter Update

November 2015-January 2016

The second quarter of the Dunes Climate Ready Study has been busy with refining survey procedures, training personnel for vegetation assessment, working out equipment bugs, conducting field surveys and planning for the February 27th public meeting. Details of these activities are described below.

Refining Survey Procedures

Survey procedures were refined for monitoring of the 73 transects that were established along a 32-mile stretch of shoreline between the mouth of Little River and Centerville Beach. This total includes 14 transects previously established in January 2012 on Humboldt Bay National Wildlife Refuge. The transects start on the lower beach and extend inland as much as 500 m. As reported in the first quarter [update](#), the length of transects varied based on the width of the dune system, presence of obstructive backdune vegetation, area undergoing management, and extent of morphologic features of interest. As transect locations were finalized, vertical benchmarks were established such that all transects fell within approximately 500 m of a benchmark. A permanent marker was placed at each benchmark and the height of each marker was surveyed in using an RTK GPS over a 4-hour window which yields highly accurate and precise measurements

Vegetation Assessment Training

To prepare for vegetation surveys, staff and volunteers participated in a two-day training on vegetation rapid assessment led by Refuge Ecologist Andrea Pickart. All vegetation samplers were trained to recognize dominant vegetation types such as, *Ammophila*, *Elymus*, *Carpobrotus*, *Cakile*, and Dune mat, and to estimate percent cover of a 1-meter diameter circle using cover classes. All trainees received a training manual and had time to practice the estimation technique with slides inside before going out into the field. They calibrated their estimates through practice in the field until estimates converged.



Vegetation assessment training session.

Initial Surveys Underway

The first survey began on Jan. 4 and is still ongoing. At each transect, an elevation and a vegetation measurement is taken every 2 m in the foredune, and every 4 meters in all other portions of the transect. Staff and volunteers of collaborating agencies with the support of two Research Assistants are conducting the surveys. Each transect requires two personnel, one to operate an RTK rover unit, and one to take vegetation

measurements. The rover unit is used to navigate to each pre-loaded point along the transect. Once the rover operator locates a point, a second person estimates vegetation cover by placing 2 perpendicular 1-m measuring sticks on the ground or the top surface of vegetation centered at the point which represent diameters of a circular plot. Dominant vegetation type is determined, and the mean height and percent cover of vegetation are estimated using size classes to reduce error.

In January, the weather made scheduling survey teams quite challenging, and when combined with the extra foot or so of sea level from El Niño and storm swells, the survey crews' ability to take beach measurements was limited. As in all field work, there were logistical and mechanical issues, and after the third week the number of RTK units available was reduced to one, slowing progress considerably. In spite of this, the survey was half complete by mid February, when some dry weather was finally encountered. We greatly appreciated having Alana Rader, from University of Victoria, join us for the first two weeks of the survey. RTK units were loaned during the first few weeks by Dr. Ian Walker and Dr. Bernard Bauer.



The survey crew with rover and base unit.

North Spit Adaptation/Demonstration Site

At the Adaptation Site, resprouts are continuing to be treated. *Ammophila* piles were burned during a rare dry interval in early February. Because the project was delayed due to unavailability of CCC crews during last summer's fire season, planting may need to be delayed until next fall. University of Victoria Master's student Alana Rader, along with a fellow UVic staff member, completed the post-*Ammophila* removal scan of the site in November. Seeds of dune mat species for replanting have been collected, dried and stored.

El Niño

The El Niño weather has resulted in some dramatic foredune erosion. Escarpments on the foredune exceeding 20 ft have been observed at various sites along the North Spit. Many of these "scarps" have been captured in our surveys, and will allow us to document the foredune recovery process during an El Niño cycle.

Outreach

In November, a guided walk to the adaptation/demonstration site on USFWS property was held. Participants were able to see the treated areas and ask questions about the study. A Public Education and Outreach meeting will be held February 27th, 9-11 am at the Humboldt Coastal Nature Center, 220 Stamps Lane in Manila. The meeting will be facilitated by Roger James and will include a brief presentation with updates about the project as well as time for interactive discussion and questions about the project. A guided walk will be held March 26, 9am to 11 am at the Humboldt Coastal Nature Center to visit the beach grass nursery site and to update the community about the progress of the project. Visit friendsofthedunes.org for more information.

More information about the grant is available on the Friends of the Dunes website or you can sign up for email updates [here](#).

For additional background information visit the following websites:

[Humboldt Bay National Wildlife Refuge](#)

[University of Victoria Coastal Erosion and Dune Dynamics Lab](#)

[State Coastal Conservancy](#)

[Friends of the Dunes](#)



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