

PROJECT TITLE: **Northwest Straits Project: Skagit County Marine Resources Committee Action and Administration**

DELIVERABLES FOR TASK NO: **TASK 10: *Spartina* Survey and Removal**

PROGRESS REPORT: ☐

FINAL REPORT ☒

PERIOD COVERED: **July 1, 2010– June 30, 2011**

DATE SUBMITTED: **June 17, 2011**

**Project Summary:** Skagit MRC partnered with People for Puget Sound (PPS) and the Swinomish Tribal Community to identify tribal sites in need of smaller scale manual removal and train volunteers to conduct kayak-based surveys for invasive *Spartina* using established protocol. 32 volunteer kayakers were trained and surveyed over 33 miles of Skagit County shoreline throughout the summer and mapped approximately 71 square meters of *Spartina*. 32 volunteers contributed a total of 184 hours to conduct *Spartina* surveys in Skagit County in 2010.



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PEOPLE FOR PUGET SOUND

COMMUNITY *SPARTINA* EDUCATION AND STEWARDSHIP PROGRAM

2010 FINAL REPORT TO THE  
SKAGIT MARINE RESOURCES COMMITTEE  
Skagit County Contract # C20090564

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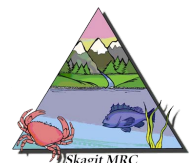


Citizen scientists surveying the Bayview Slough, Skagit County, WA.

Photo: K. O'Connell



NORTHWEST STRAITS  
marine conservation initiative



**INTRODUCTION:** People For Puget Sound has been supporting the Washington State Department of Agriculture's (WSDA) efforts to eradicate invasive *Spartina* grasses from the shores of Puget Sound since 2000. Since 2007, our efforts have focused on recruiting and training volunteer sea kayakers to survey priority shorelines for *Spartina anglica*, which is by far the most prevalent of the 4 species found in Puget Sound. This unique citizen science opportunity is the only region-wide volunteer program for kayakers in the country. The Skagit Marine Resources Committee has supported this groundbreaking work from the beginning, and volunteer sea kayakers have paddled 119 miles while surveying along Skagit County shorelines over 4 survey seasons. This report details the results of 2010 *Spartina* surveys, during which 32 volunteer kayakers surveyed over 33 miles in Skagit County, identifying approximately 71 square meters of *S. anglica*.

**RECRUITMENT:** Volunteer kayakers were recruited through local kayak clubs and from the general public. Training and program announcements were distributed through: Whatcom Association of Kayak Enthusiasts (WAKE), Hole In The Wall Kayak Club (HITW), Washington Kayak Club, Washington Water Trails Association, Olympic Peninsula Paddlers, WSU Beachwatchers, Everett Mountaineers, Olympic Kayak Club, Bellingham Bay Community Boating Center, and others. Additionally, recruitment flyers were posted throughout the region at locations frequented by paddlers. A presentation was also conducted in April 2010 at the monthly meeting of HITW, Skagit County's local kayak club.

**SURVEY METHODS:** Experienced kayakers were invited to attend one of seven training sessions that took place in North Puget Sound, of which three trainings were held in Skagit County. One of these local trainings was led by a volunteer, a program first. Volunteer paddlers received formal training that included information about *Spartina*, proper survey and identification techniques, and kayak safety issues. Each volunteer was given a packet which contained all the necessary forms and guidelines to conduct surveys, including a laminated *Spartina* ID Card with detailed instructions on how to identify the plant in the wild. Surveyors were also provided with ziploc bags for storing leaf and stem samples of any potential *Spartina* specimens that needed to be verified by the project manager.

Surveys were conducted during the daylight tidal window of a +3 to a +9 tide in order to maximize *Spartina* exposure. Surveyors recorded the latitude and longitude of any *Spartina* infestations using a GPS unit and entered this data onto the inventory forms. They also recorded additional relevant information that could aid in location and removal- including estimated patch size, dominant substrate, presence of other vegetation, and other descriptive information. Water-based surveyors were encouraged to beach their craft and proceed on foot whenever possible, however, the project manager has determined with field trials that surveys can be completed successfully from the watercraft when carried out at the appropriate tidal height.

**RESULTS:** In 2010, 27 surveys were conducted in Puget Sound, including 3 staff-led *Spartina* Paddles and 4 volunteer surveys in Skagit County. Table 1 below provides detailed information on locations, dates, and type of all surveys in Skagit County.

**Table 1: 2010 Skagit County *Spartina* Survey Results**

Survey Coverage Section	County	Section Length (miles)	Date	Survey Method	Start Coordinates (UTM Zone 10)		Stop Coordinates (UTM Zone 10)		Survey Type	<i>Spartina</i> Found (m <sup>2</sup> )	Notes*:
					Northing	Easting	Northing	Easting			
Fidalgo Head	Skagit	1.33	6/17/2010	Kayak	523075.887	5371089.9	522075.641	5371758.707	Paddle	No	
Anacortes	Skagit	6.55	6/22/2010	Kayak	528500.546	5374337.34	530631.903	5369848.573	Paddle	No	
Bayview Slough	Skagit	1.49	7/8/2010	Kayak	539468.768	5367236.89	539468.768	5367236.886	Paddle	No	Paddled on N. shore of slough to 538695.57, 5367785.032 and returned to start on S. shore of slough
La Conner 1	Skagit	1.72	7/10/2010	Kayak	536814.711	5359507.65	535760.693	5357823.102	Training	Yes	
Snee Oosh	Skagit	1.64	7/29/2010	Kayak	533953.805	5360674.6	534574.922	5358237.181	Training (volunteer led)	No	
		0.37			534019.681	5359479.42	534019.681	5359479.417			Circumnavigation Big Deadman Is.
		0.14			533840.874	5359074.75	533840.874	5359074.749			Circumnavigation Little Deadman Is.
Hope Island	Skagit	0.27	8/13/2010	Kayak	531354.533	5362410.35	531051.766	5362124.404	Volunteer	No	South shore of Skagit Island
		2.44			531601.233	5361036.68	531601.233	5361036.683		Yes	Cicumnavigation of Hope Island
Guemes and Jack Islands	Skagit	0.82	8/14/2010	Kayak	528434.29	5380781.46	528434.29	5380781.455	Staff	No	Cicumnavigation of Jack Island
		1.59			528148.497	5379292.95	526761.211	5381299.454		No	
Huckleberry Is.	Skagit	0.65	8/21/2010	Kayak	531687.285	5376059.72	531687.285	5376059.717	Staff	No	Cicumnavigation Huckleberry Island
La Conner 2	Skagit	0.68	8/22/2010	Kayak	536832.39	5359326.61	537252.901	5360290.977	Training	Yes	E shore of Swin. Channel
		0.04			537286.542	5360515.25	537292.149	5360582.531		No	E. shore- small section by marina
		0.07			537269.721	5360604.96	537280.935	5360722.701		No	E. shore- small section by marina
		0.46			537308.969	5361014.26	537342.61	5361642.219		No	E. Shore
		1.26			537157.585	5361698.29	537062.269	5359859.252		Yes	w. shore of Swin. Channel
Fidalgo Bay	Skagit	2.45	8/25/2010	Kayak	530625.648	5369850.59	530990.091	5368118.088	Volunteer	No	
Similik Bay	Skagit	5.03	9/15/2010	Kayak	531393.156	5366083.07	532542.201	5363144.366	Volunteer	Yes	Including Kiket Lagoon
Dredge Islands	Skagit	1.46	9/21/2010	Kayak	532744.755	5371800.31	533554.337	5369638.95	Staff	No	Return at high tide along shore
		2.23			534472.359	5369312.15	535371.069	5368034.641		Yes	Cicumnav. Of 4 Dredge Islands located between Start and Stop
Dot and Goat Islands	Skagit	0.13	10/6/2010	Kayak	534363.617	5357983.43	534363.617	5357983.426	Volunteer	No	Cicumnavigation Dot Island
		0.78			534646.515	5357061.91	534671.724	5356526.922		No	W. Shore of Goat Island

\* Survey tracts are complex and are not linear, coordinates represent start and stop points only. See maps for detail of survey paths between coordinates.

For a visual representation of survey coverage, see GIS maps in Appendix 1.

Thirty-two volunteer kayakers participated in *Spartina* surveys in 2010, contributing a total of 184 hours of their time, valued at \$16.54 per hour or \$3043.36. These volunteers surveyed a total of 33.6 miles of Skagit County shoreline, and identified approximately 71 square meters of *Spartina*. This is an increase from 2009, where surveyors located almost 60 square meters of *S. anglica*. This can be attributed mainly to the location this year of a large infestation on the Dredge Islands north of the Swinomish Channel, which was thoroughly inventoried by program staff. This survey will provide an opportunity to document the efficacy of control efforts, as this infestation was treated by Skagit County Noxious Weed staff this summer. We will re-survey in 2011 to see how the infestation responds to herbicide treatment.

Other previously unknown infestations were discovered on Hope Island and in the Swinomish Channel south of La Conner. This large clone is worth mentioning- since it was found in an area that has been extensively surveyed year after year by the Swinomish Tribe's control crew. They stated that this was the largest single clone that they had seen all year- tucked away in a backwater cove where only a kayaker could easily spot it. Stories like this clearly demonstrate the importance of engaging the local kayaking community in these survey efforts. It is also noteworthy that several surveys of previously infested areas came up negative this year. Clones located in 2009 by paddlers along the Snee-Oosh shoreline and on Big Deadman Island have all been successfully eradicated. These absence surveys will become increasingly important in the future, as paddlers are asked to verify the control of some of these hard to reach clones that we identify.

For the first time in a decade of involvement in the eradication effort, no *Spartina* Dig Day was conducted in 2010. There was no appropriate location in Skagit County where large-scale removal was needed this year, a sign that the eradication effort is progressing. People For Puget Sound continues to be on the lookout for larger infestations that could be controlled by volunteers, and we are ready to conduct another Dig Day if the need arises.

**CONCLUSIONS:** The Skagit County Marine Resources Committee has been supporting People For Puget Sound's Community *Spartina* Education and Stewardship Program since 2003. During these years, program staff have trained over 300 people in Skagit County on *Spartina* identification, removal, and survey methods. Since 2007, the program has focused on survey training for kayakers, as these volunteers are especially suited to access the mudflats and outer islands that can be more difficult to survey by traditional methods. In these three years, volunteer paddlers have surveyed 119 miles of shoreline in Skagit County, identifying approximately 253 square meters of invasive *Spartina*.

This year People For Puget Sound volunteer sea kayakers surveyed over 83 miles of shoreline in Puget Sound, including 38.5 miles in Skagit County. Program volunteers continue to demonstrate that Puget Sound's vibrant sea kayaking community has a valuable role to play in the statewide eradication of invasive *Spartina*. This groundbreaking program is the only one of its kind in the country, and shows that sea kayakers, trained as citizen scientists, can contribute to monitoring and research of their local waters. This unique program would not be possible without the ongoing funding from the Skagit MRC. Thank You for this support!

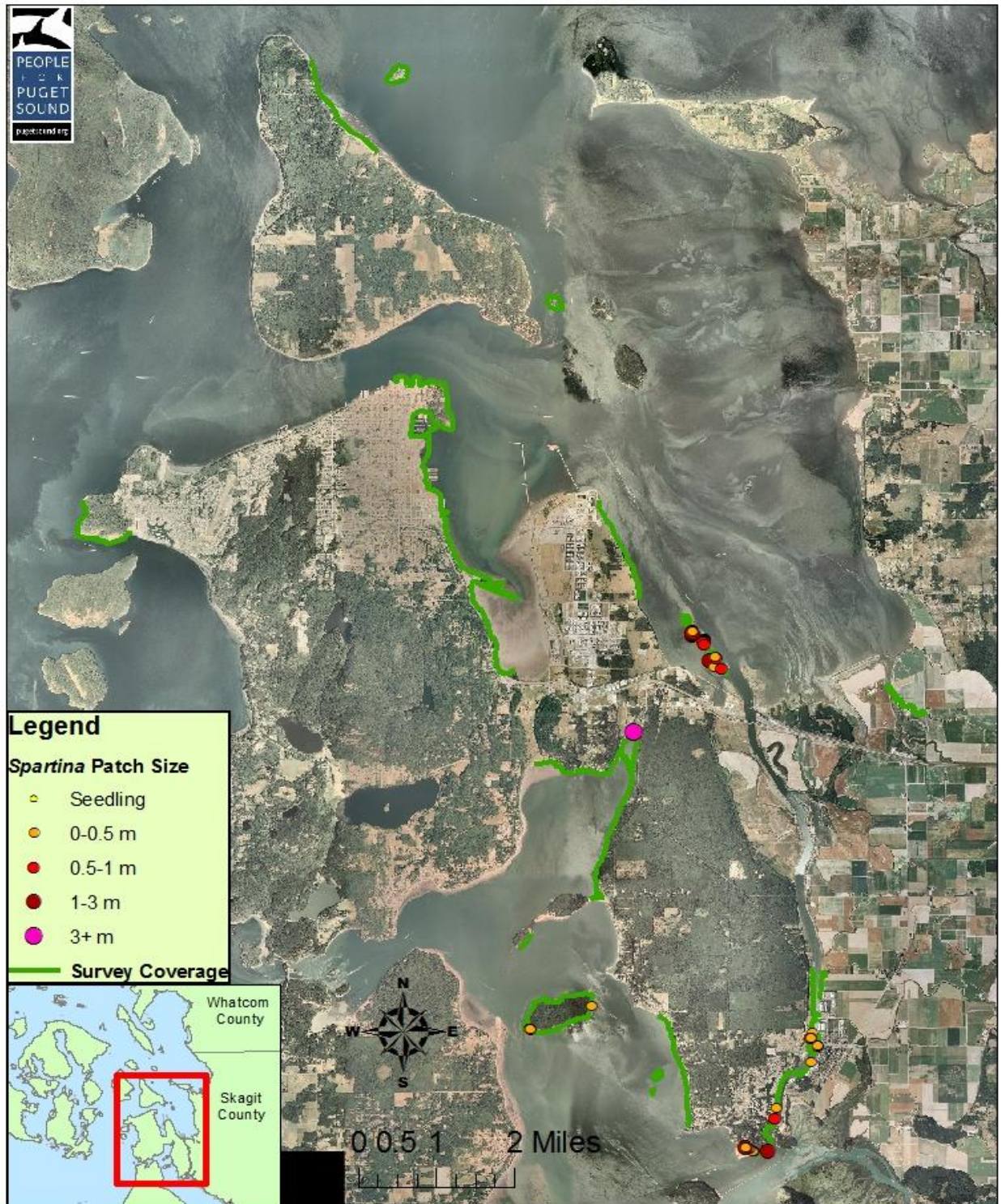
**ATTACHMENTS:**

- Appendix 1: GIS Maps of Survey Coverage, county map and local area maps
- CD with digital copies of all files and survey photos



**APPENDIX 1:**

## **2010 *Spartina* Survey: Skagit County**





# 2010 *Spartina* Survey: Dredge Islands, Skagit County





# 2010 *Spartina* Survey: Swinomish Channel, Skagit County

