

2010 Swinomish *Spartina* Control Program Report

Purpose: To report on the progress of the *Spartina* control effort on the Swinomish Reservation.

Background: *Spartina anglica* (also known as English or common cordgrass), is one of several species of *Spartina* that have become established in Pacific Northwest estuaries. *Spartina anglica* primarily originated in this area from experimental plantings done in Port Susan Bay on Camano Island several decades ago. In the intertidal mudflats and marshes of Puget Sound, *Spartina anglica* is highly invasive. In mudflats it will establish lower in the intertidal than any native emergent vegetation. Once established it expands rapidly, accreting sediment and converting mudflats into thick cordgrass monocultures with steep tidal channels. Within native marsh it typically out-competes native vegetation. *Spartina anglica* provides little habitat for Puget Sound wildlife. Because of its invasiveness and highly deleterious effect on mudflats and salt marshes, *Spartina anglica* is now designated as a Class A Noxious Weed in Washington State, with eradication as a top priority. The Tribe receives a grant from the Washington State Department of Agriculture to assist in *Spartina* control.

The Swinomish Reservation has a large amount of suitable *Spartina* habitat over its several thousand acres of intertidal area. Control has been attempted for many years on numerous infestations within the reservation's boundaries using various techniques. However, controlling *Spartina* infestations of any size has been shown to be problematic without the use of the imazapyr/glyphosate herbicide mixture currently being employed by various agencies in the state.

2. 2010 *Spartina* Control Summary. In 2010 the Noxious Weed Control Program (under Swinomish Environmental Program management), conducted all *Spartina* control work on the Reservation, as well as in two areas adjacent to the Reservation (West Turner's Cove and Culbertson's Salt Marsh.

- a. The tribal noxious weed control technician hired in 2010 became licensed as a Washington State aquatic herbicide applicator, making a total of 2 Swinomish aquatic sprayers.
- b. *Spartina* grant funds from WSDA were used to fund seasonal salary for the weed technician for *Spartina* Control survey and control work, as well as used to purchase program supplies.
- c. The first round of spraying was done in July, in order to prevent the majority of seed production. Lone Tree lagoon was again hand dug, but all other areas where *Spartina* was located were sprayed. 25.1 gallons of spray mixture was used in the first round of spraying, an amount 61 % less than that used in the first round of spraying in 2009.
- d. The second round of spraying was conducted in late August/early September. Plants sprayed during the first round were easy to identify by this point and only a few plants were likely re-sprayed. 11.8 gallons of spray mix were used during the September applications, 67 % less than the amount used in 2009's second round of spraying. Several additional plants were found in Lone Tree lagoon and were manually removed.

- e. All intertidal areas of the Reservation were surveyed and all *Spartina* found was sprayed (except in Lone Tree Lagoon, which was dug). All herbicide applications had a minimum of 4 hours dry time and no precipitation occurred on application days.
- f. Cooperative Efforts: The Tribe assisted WSDA and Skagit County by spraying the off-reservation portion of Turner's Cove and Culbertson's salt marsh in both July and September. People for Puget Sound assisted the Tribe in providing kayak surveys of several remote intertidal areas of the Reservation.

Table A is a comparison between herbicide use in 2009 and 2010. Chart A is a graphical representation of herbicide use since the Swinomish Spray program began in 2008.

Area	2009 July mix (gal)	2009 Sept mix (gal)	2010 July mix (gal)	2010 Aug/ Sept mix (gal)
Casino North Spit	0.75	1.75	2.5	0.7
Kwonesum	7.50	2.75	2.0	2.4
Swadabs Park and Village	4.00	1	1.0	0.25
Shelter Bay	0.50	0.25	0.10	Not done
Boat House Cove	6.50	2.75	3.0	0.75
Causeway	0.25	0.5	0.75	0.2
Shortcut and South	3.50	4.75	1.25	1
Lone Tree Lagoon	dug		dug	dug
Kiket Lagoon		Dug (August 09)	0.1	Not done
Turner' Cove	25.00	9.75	7.5	3.0
Culbertson's Salt Marsh	0.50	2.5	0.5	0.5
North Channel (West)		0.5	0.9	0.1
Padilla Bay Lagoon	16.00	8.25	5.5	2.75
West/South side of Reservation/including islands	0.5	1	No plants found	Not done
Totals	65	36	25.1	11.7

Table A. 2009_2010 Swinomish *Spartina* herbicide application comparison.

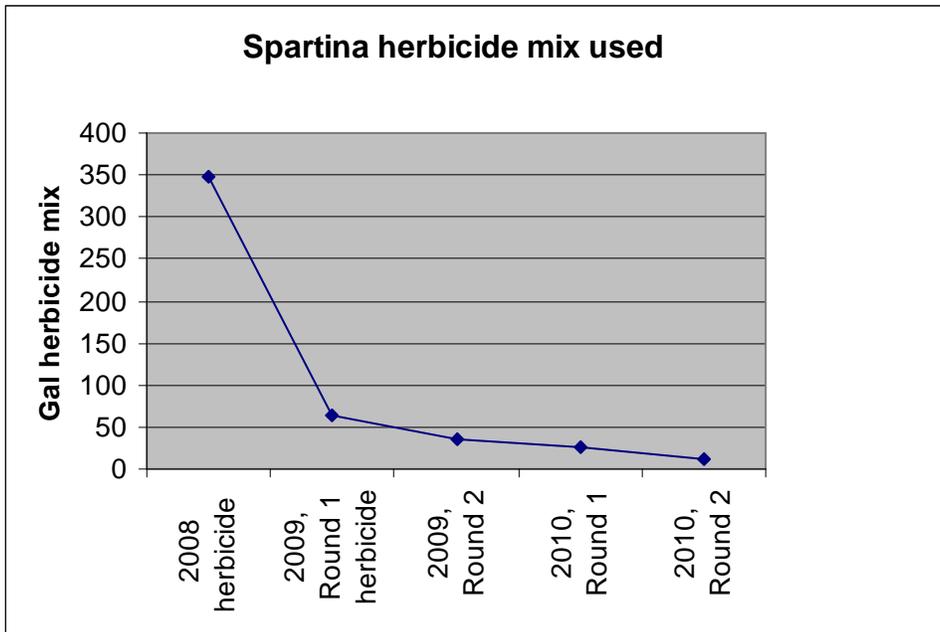


Chart A. Swinomish *Spartina* Control 2008-2010

3. Notes:

- a. In general, *Spartina* in mudflat areas showed the best control from 2009. Reductions in the amount of *Spartina* in salt marsh areas showed substantially less reduction. Significant effort will be required in future years to find remaining *Spartina* plants within heavy marsh.
- b. In the Aglands area along the northern Swinomish Channel, some newly established *Spartina* was found in the pocket estuaries recently constructed, but none was detected west of the tidegates. Many of the brackish channels in the restoration areas west of the self-regulating tidegates contain salt-marsh vegetation and are highly suitable for *Spartina*.
- c. A fair number of plants undiscovered in the July application round came up and set seed prior to the September application. In future seasons we will shorten the period between applications to no more than a month to minimize this problem.
- d. Garmin GPS units provided by the WSDA *Spartina* coordinator were used to individually mark every *Spartina* application point. Points indicate 1 sq. ft or less of *Spartina*. Areas larger than 1 sq. ft were marked using approx 1 point per sq ft. A photo with application points displayed for each of the two application rounds is attached, along with an ESRI shapefile for each application round. 1141 locations were sprayed in round 1, and 741 in round 2.

Swinomish Spartina
July 2010

1141 points

0 2,550 5,100 10,200 Feet

