Spartina Eradication Program
2017 Progress Report

Washington State Department of Agriculture
Survey and removal efforts in late fall facilitate location of small plants such as these *Spartina anglica* finds from November, 2016 in Kitsap County. Once native saltmarsh vegetation begin to die back in late fall, detecting small intermixed plants in outlier populations becomes more likely.

Cover photo (Snohomish County)

Other photos provided by (WDFW & WSDA)

Cover: Puget Sound Conservation Corps clipping seed heads before treating a large Spartina find, summer 2017.
WSDA has made every effort to ensure accuracy in compiling data and maps for this report. However, because much of the information comes from outside sources, WSDA cannot guarantee that it is without errors or omissions.

2017 SPAR TINA ERADICATION PROGRAM PROGRESS

Washington State Department of Agriculture
# Table of Contents

Executive Summary ....................................................................................................................1  
Spartina Eradication Program .....................................................................................................4  
  WSDA Spartina Program ........................................................................................................4  
  Budget ...................................................................................................................................5  
Spartina Status by Species .........................................................................................................6  
Spartina Eradication Effort by County .......................................................................................7  
  Pacific County ........................................................................................................................7  
  Grays Harbor County .............................................................................................................10  
  Snohomish County ................................................................................................................12  
  Island County .........................................................................................................................14  
  Skagit County .........................................................................................................................16  
  Whatcom County ...................................................................................................................18  
  San Juan County ....................................................................................................................19  
  Clallam County .....................................................................................................................20  
  Kitsap County ........................................................................................................................21  
  Jefferson County ....................................................................................................................22  
  Pierce County .........................................................................................................................23  
  King County ............................................................................................................................24  

## Concepts or definitions used in this report:

**Solid Acres**
A measure of how many acres a dispersed population would occupy if all *Spartina* plants were grouped together.

**Affected Acres Treated**
A measure of how many acres had one or more *Spartina* occurrence points.

**Spartina Occurrence Point**
A record of a *Spartina* find or infested location, each occurrence point typically represents a single *Spartina* plant or a small group of plants.

**Survey/Treatment Lap**
Refers to a single detailed survey of all susceptible habitat in the referenced area.

**Surveyed Acres**
A measure of how many acres were surveyed for *Spartina*, a minimum of once, during a given year.

**Site Eradication Criteria**
Requires that six consecutive negative survey events occur over the course of three or more years. Also specifies that a maximum of two qualifying negative survey events can occur in any year.
Executive Summary

The Washington State Department of Agriculture (WSDA) serves as the lead state agency for the eradication of invasive *Spartina* (RCW 17.26). WSDA facilitates the cooperation of local, state, federal, and tribal governments, universities, and private landowners responsible for the success of the program. From a statewide high of over 9,000 solid acres infested in 2003, the program has reduced *Spartina* to 3.9 solid acres as of 2017. While that is a 99.6 percent reduction in total acres statewide, it does not tell the full story of this problem. These final acres are a collection of individual plants and small clones spread along thousands of miles of shoreline in the Puget Sound, around the Olympic Peninsula, and estuaries along Washington State’s Pacific Coast.

*Spartina*, commonly known as cordgrass, is an aggressive noxious weed that has severely disrupted the ecosystems of native saltwater estuaries in Washington State. Left unchecked, *Spartina* out-competes native vegetation and converts mudflats and estuaries into monotypic, higher elevation *Spartina* meadows. As a result, important salmon, shorebird and waterfowl habitats are lost, the threat of flooding is increased, and the state’s shellfish industry is severely impacted.

The coming years will be pivotal as the cooperators continue to survey the vast intertidal waters of Washington State to find and eradicate the remaining infestations. WSDA remains confident that with continued program support, eradication can be achieved. Figure 1 depicts continuing reductions to solid acres of *Spartina* statewide and documents successful eradication of 57 sites.

Figure 1: Solid acres of *Spartina* continue to decline as eradication success increases. The blue line depicts the reduction in solid acres of *Spartina* since 2003. The red line depicts successful eradication of 57 of the 176 historically infested sites tracked by the program.
**Pacific County**
During the 2017 treatment season, Pacific County cooperators located and treated 0.31 solid acres of *Spartina* (435 occurrence points). The treatment program experienced an 18 percent decrease from the 0.38 solid acres treated in Pacific County during the 2016 season. The cooperators remain confident that totals will continue to decrease in the coming years.

**Grays Harbor County**
In 2017, the Grays Harbor cooperators found and treated 0.015 solid acres of *Spartina*. Of this total, 0.015 solid acres were *S. alterniflora* (22 points) and 0.00062 solid acres were *S. densiflora* (23 points). This is a 46 percent decrease from the approximate 0.028 solid acres treated during the 2016 season. Due to the effectiveness of the last two treatment seasons, WSDA expects continued reductions in 2018.

**Puget Sound Counties**
In 2017, approximately 3.6 solid acres of *Spartina* representing over 10,000 occurrence points and over 18,000 individual plants, were treated in the Puget Sound. This effort resulted in a 45 percent decrease from the 6.6 solid acres treated in 2016. 2017 saw the last known infestations in King and Pierce Counties eradicated. With the continued dedication of the cooperators and consistent program support the Puget Sound will see many additional sites eradicated in the coming years.

**2017 Trends**
In 2017, project partners inspected over 80,000 acres of saltwater estuaries and more than 750 miles of shoreline in 12 counties for evidence of *Spartina*. As part of this effort the cooperators found and recorded over 11,000 *Spartina* occurrence points representing over 19,000 individual plants. This eradication program is an unprecedented success story; however, the remaining plants and small *Spartina* clones will be the most difficult and time consuming to find and eradicate.

As funding has been reduced over the years, the cooperators have joined to leveraged resources and conduct cooperative survey and treatment efforts. This practice of strategically blending teams to achieve program goals has become necessary as funding has been reduced. Future eradication success will require ongoing collaboration of this sort. Indispensable to the 2017 cooperative effort were the DNR funded Puget Sound Corps crews made available in Skagit, Snohomish and Island counties. At current funding levels, the cooperators are able to deliver a viable, but slowed, eradication program.

An encouraging development in 2017 is the nine additional *Spartina* infestations declared eradicated (Fig. 2). This brings the total number of previously infested sites eradicated as of 2017 to 57, or 32 percent of the 176 *Spartina* sites currently tracked by the program. The number of sites is expected to increase in 2018 as the project partners continue to adopt and refine this metric.

With continued program support, 90 percent of Washington State’s known *Spartina* sites can be eradicated in the next fifteen years.
Figure 2: Distribution of invasive *Spartina* sites in Washington State, 2017.
In 2017, the WSDA *Spartina* Eradication Program worked collaboratively with partner agencies to continue *Spartina* eradication.

WSDA hired, equipped, and managed personnel to survey and treat infestations in Whatcom, San Juan, Clallam, Jefferson, King, Pierce and Kitsap counties. WSDA assisted the Swinomish, Suquamish, Makah, Puyallup, and Tulalip tribal communities and the noxious weed control boards in Skagit, Snohomish, and Island counties with eradication work. We worked cooperatively with Washington Department of Fish and Wildlife (WDFW), Washington State Department of Ecology (Ecology), and the U.S. Fish and Wildlife Service (USFWS) in Puget Sound and Grays Harbor County. We also worked cooperatively with the Department of Natural Resource (DNR), WDFW, USFWS, The Nature Conservancy (TNC), the Shoalwater Bay Tribe, Pacific County, the aquaculture industry, and Washington State University (WSU) on infestations in Pacific County.

WSDA continued to administer the Ecology National Pollutant Discharge Elimination System (NPDES) general permit required for *Spartina* eradication activities.

WSDA provided resources through interagency agreements, cost-share agreements, and contracts with state and local government agencies. WSDA organized and facilitated the exchange of *Spartina* eradication information through regional planning meetings. The department also continued to explore more efficient and cost-effective ways to eradicate *Spartina* with partner agencies.

In 2017, WSDA continued to allocate funding for resources and *Spartina* work crews in counties with the majority of the infestations. In Willapa Bay, $110,000 was designated for Pacific County to continue their survey, treatment and weed board involvement. In the Puget Sound, WSDA provided resources totaling $175,500 by entering into agreements with the noxious weed control boards in Skagit, Island, Whatcom, and Snohomish counties, the Swinomish Tribal Community, DNR and WDFW. WSDA staff participated in field activities throughout the control season and facilitated coordination meetings to ensure contract priorities were addressed. WSDA continued working with WDFW, DNR, WSU, and USFWS to explore the potential restoration of once-infested tidelands to functional habitat.

An opportunity was provided to the Puget Sound partners during the 2017 summer *Spartina* survey season for the return of Puget Sound Corps (PSC) crews. DNR was able to fund PSC crews who assisted with a variety of projects including *Spartina* survey and eradication. Whether they worked directly in the field with *Spartina* crews or along rivers on the knotweed project, their contribution to the Puget Sound effort took pressure off the county and state crews and contributed to the *Spartina* effort in 2017. All of the project partners who worked with the PSC crews appreciated the opportunity.
WSDA allotted $1.53 million of the appropriation from the Aquatic Lands Enhancement Account (ALEA) for statewide *Spartina* activities during the 2017-2019 biennium. Table 2 describes how WSDA allocated funds to conduct *Spartina* survey and eradication activities.

### Table 2: WSDA *Spartina* Budget Activity – FY18 and FY19

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**Notes for Table 2:**
1. WSDA Eradication and Coordination Activities: Expenses include WSDA eradication, survey, permitting, salaries and benefits, herbicide, equipment, travel, legal fees, public notification, and other goods and services.
2. Purchased Services: WSDA interagency agreements and intergovernmental agreements to accomplish *Spartina* eradication goals.

Other agencies received additional funding for *Spartina* activities during the 2017-2019 biennium. This funding is provided from ALEA, federal agreements, grants and other sources. Table 3 documents these additional funds, as reported to WSDA.

### Table 3: Other Agencies *Spartina* Budget Activity – FY18 and FY19

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<th>Fiscal Year 2019 (July 1, 2018 thru June 30, 2019) (USFWS Refuge funding follows Federal fiscal period)</th>
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Spartina Status by Species

*S. alterniflora* (Smooth Cordgrass or Saltmarsh Cordgrass) has been found in Pacific, Grays Harbor, Skagit, and Clallam counties. This species was unintentionally introduced to Pacific County (Willapa Bay) during the late 1800s where it spread to more than 8,500 solid acres by 2003. The extent of the infestation in Willapa Bay spurred one of the largest and most successful estuarine eradication programs in the nation’s history. Through dedicated funding and aggressive eradication efforts by local, state, and federal agencies, less than 0.33 solid acres of *S. alterniflora* remained in all affected counties during 2017.

*S. anglica* (Common Cordgrass) was introduced to Snohomish County in 1961 and the infestation increased to a peak of more than 1,000 acres by 1997. This introduction quickly spread to Skagit and Island counties and to a lesser extent the counties of Whatcom, San Juan, Clallam, Jefferson, King, Pierce and Kitsap. Of these four species of *Spartina*, *S. anglica* is currently the most abundant and accounts for 90 percent of Washington State’s infestation. In 2017, approximately 3.6 solid acres of *S. anglica* remained in the infested counties of Washington State.

*S. densiflora* (Dense-Flowered Cordgrass) is an aggressive South American species discovered at Bills Spit in Grays Harbor and at Race Lagoon in Island County in the fall of 2001. This species exhibits bunchgrass type growth and blends in well with the native saltmarsh flora making survey and treatment difficult. Winter and spring surveys conducted north of Bills Spit to the mouth of the Humptulips River have contributed to the decline of *S. densiflora* solid acresages in Grays Harbor. During extensive winter surveys conducted in 2017, approximately 0.00062 solid acres (27 ft²) of *S. densiflora* was manually removed.

*S. patens* (Saltmeadow Cordgrass) also known as salt marsh hay, is a species of cordgrass native to the Atlantic Coast and was discovered in the 1990s at Dosewallips State Park (Jefferson County) on Hood Canal. *S. patens*, like *S. densiflora*, exhibits physical characteristics that blend in well with the native salt marsh flora making survey and treatment difficult. Historically, Dosewallips has contained the only known infestation of *S. patens* in Washington State. During the 2013 season, the WSDA survey crew discovered a second infestation of *S. patens* on Hood Canal across from Naval Base Kitsap-Bangor. There was 0.0086 acres (374 ft²) of *S. patens* treated across both sites in 2017.
**Spartina Eradication Effort by County**

**Pacific County**

In 2017, the Pacific County cooperators collectively located 435 *Spartina alterniflora* occurrence points and treated 0.31 solid acres. This is a 67 percent decrease from the 1,338 occurrence points and an 18 percent decrease from the 0.38 solid acres treated during the 2016 season. These decreases may be explained by several preceding years of elevated treatments and amplified surveys within the most heavily infested areas of Willapa Bay. Figures 4 and 5 identify where eradication efforts occurred.

The Willapa Bay Treatment Program requires the cooperation of many different organizations. WSDA provides resources, equipment, and herbicide to Pacific County. DNR, WDFW, USFWS, Pacific County, TNC and the Shoalwater Bay Tribe all provide crews that are responsible for treatment of their areas of responsibility. The cooperators meet throughout the treatment season in order to maintain communication regarding the progress of eradication efforts.

The recent reductions in *Spartina* occurrence points and total acreage treated in Pacific County has provided evidence that continued pressure in the upper salt marsh habitat has reduced seed production in the most challenging areas. This is reflected in the 67 percent decrease in occurrence points and only 18 percent decrease in acreage from the previous year. The likelihood of locating the remaining plants in the bay will increase as they grow, becoming more visible among native vegetation. This has been witnessed in Grays Harbor where nearly all the plants located were mature clones with no indication of viable seed in the area. As the smaller, more isolated populations throughout the bay are extinguished, cooperators will focus resources where the last *Spartina* holdouts exist.

After the 2017 treatment season, it has become apparent that permission to treat infestations on private land in Willapa Bay will have increasing impacts on bay-wide reductions. Of the 0.31 solid acres of *Spartina* in Pacific County during the 2017 treatment season, 0.15 acres existed on private land where permission was not granted for the treatment of the plants, amounting to roughly half of the total *Spartina* found in the bay. In the future, as the infestation continues to be reduced in surrounding areas of the bay, untreated populations left on private lands will represent a larger portion of the total. The eradication of *S. alterniflora* in Pacific County is dependent upon the treatment of the infestations remaining on private land. WSDA and Pacific County will continue to pursue permission to eradicate *Spartina* on these private lands.

WSDA anticipates the cost of conducting *Spartina* eradication in Pacific County in 2018 and beyond will decrease. As the Pacific County infestation approaches eradication, survey effort at individual sites can be reduced. Once a site has been declared eradicated, survey effort will drop to a single detailed, annual survey/monitoring lap. With this plan in effect, funding and resources can gradually transition to the most heavily infested Puget Sound counties while maintaining adequate resources in Pacific County to complete *Spartina* eradication. WSDA projects that less than 0.2 solid acres of *Spartina* will be present in Pacific County during the 2018 treatment season (Fig. 3).
Figure 3: Solid acres of *Spartina* in Pacific County by year, based on WSDA estimates. The blue line (with diamond points) represents the historic area of *Spartina* since 2003. The red line (with square point) represents the projected *Spartina* area through 2018.

Figure 4: 2017 North Willapa Bay *Spartina* treatment sites.
Figure 5: 2017 South Willapa Bay *Spartina* treatment sites.
Grays Harbor County

In 2017, crews from DNR, WDFW, and WSDA completed two survey laps of Grays Harbor. The crews found and treated approximately 640 ft² (0.015 solid acres) of *Spartina* within Grays Harbor County (Fig. 7). Of this total, 613 ft² (0.014 solid acres) were *S. alterniflora* and 27 ft² (0.00062 solid acres) were *S. densiflora*. This is a decrease from the 1236 ft² (0.028 solid acres) of *Spartina* treated in 2016. Figure 7 shows the survey sites within Grays Harbor County, the John’s River and Hoquiam survey sites were declared eradicated at the end of the season. There were 22 *S. alterniflora* plants treated in Grays Harbor, most of which were mature clones. The treatment of these clones should lead to significant reductions in the future. After extensive winter, late summer, and fall surveys in Grays Harbor no *Spartina* was found outside of known infested areas. All known infestations were treated in 2017, and there were no *S. alterniflora* located during late season surveys. The overall infestation of *S. alterniflora* has been reduced to 0.015 solid acres from a high of over ten solid acres in 2005 and the infestation of *S. densiflora* has been reduced to 0.00062 solid acres from a high of 0.28 solid acres in 2009. This is a reduction of over 99 percent for each species.

WSDA projects that less than 0.008 solid acres of *Spartina* will be present in Grays Harbor County during the 2018 treatment season (Fig. 6). In order to be most efficient, two surveys of Grays Harbor shoreline will be completed at strategic times throughout the year. One survey will be completed during the winter into early spring within the areas traditionally infested by *S. densiflora* while native vegetation lies dormant. The second survey will be conducted during late summer and early fall. The focus of this survey will be locating *S. alterniflora* in the upper salt marsh as the surrounding plant life begins to senesce. This tactical approach will maximize survey efforts in Grays Harbor during the 2018 treatment season.

![Figure 6: Solid acres of *Spartina* in Grays Harbor County by year, based on WSDA estimates. The blue line (with diamond points) represents the historic area of *Spartina* since 2005. The red line (with square point) represents the projected *Spartina* area through 2018.](image-url)
Figure 7. *Spartina* distribution *S. alterniflora* (blue) and *S. densiflora* (yellow), Grays Harbor County, 2017.
Snohomish County

In 2017, the largest *Spartina* infestation in Washington State was located in Snohomish County. The Snohomish County Noxious Weed Control Board (SCNWCB), WDFW, WSDA, DNR, TNC, Skagit County and the Tulalip Tribes found and treated 1.82 solid acres (5,315 occurrence points and 10,339 individual plants) of *Spartina anglica* in 2017 (Fig. 9). This is a 57 percent decrease from the 4.2 solid acres treated in 2016. WSDA provided Snohomish County $45,000 for *Spartina* eradication activities in 2017.

The reduced levels of *Spartina* found in 2016 and 2017 are linked to increased staff and funding provided to the Puget Sound effort beginning in 2013. The increased staffing and funding allowed for expanded surveys resulting in new finds and successful control. In 2017, WSDA provided additional funding to the WDFW Puget Sound crew and DNR provided Puget Sound Corps (PSC) crews, equipment, and DNR staff.

WSDA continued to facilitate and participate in numerous cooperative treatment days in 2017. Cooperative treatments have become the norm in Snohomish County, on any given day two to three agencies will work the same area combining their resources, crews and equipment to accomplish program goals. PSC crews participated in cooperative efforts throughout the summer. All of the project partners who worked with the PSC crews appreciated the opportunity.

The majority of the *Spartina* infestation in Snohomish County was treated by WDFW (0.96 solid acres) and SCNWCB/WSDA (0.76 solid acres). The majority of this *Spartina* was contained within the South Skagit Bay area. SCNWCB and WSDA also worked closely with the Tulalip Tribes to treat *Spartina* infesting Tulalip Bay, Big Flats, Quilceda Creek and other culturally significant areas. Continued cooperation from the Tulalip Tribes will be essential to eradicating *Spartina* from Snohomish County. In addition, TNC participated in a cooperative treatment of *S. anglica* within their 4,100 acres saltmarsh located in the Port Susan Bay Preserve south of Stanwood.

For the 2018 treatment season, WSDA will assist the Snohomish County partners in the survey of problematic areas and areas accessible only by watercraft. WSDA will continue to facilitate and participate in cooperative efforts with the partnering agencies in the most heavily infested areas. Continuing participation from DNR staff and PSC crews will be a great assistance to the Snohomish County effort. Furthermore, Snohomish County is working to contract an Earth Corps crew to assist in late summer. This multi-agency cooperative effort will provide the necessary coverage and detail needed to continue the steady progression towards eradicating *Spartina* from Snohomish County (Fig. 8).
Figure 8: Solid acres of *Spartina* in Snohomish County by year, based on WSDA estimates. The blue line (with diamond points) represents the historic area of *Spartina* since 2003. The red line (with square point) represents the projected *Spartina* area through 2018.

Figure 9: 2017 Snohomish County *Spartina* distribution.
Island County

In 2017, Island County contained Washington State’s second largest Spartina infestation. Island County, PSC crews, WDFW, and WSDA participated in the Island County effort. Island County Noxious Weed Control Board (ICNWCB) and WDFW treated the majority of the Spartina controlled in Island County. A total of 1.3 solid acres of Spartina anglica representing 3,965 occurrence points and 6,869 individual plants was found and treated in 2017 (Fig. 10). This represents a 35 percent decrease from the 2 solid acres treated in 2016. The reduction seen in 2017 is the reward for the effective and detailed surveys conducted in recent years. WSDA provided Island County $45,000 for Spartina eradication activities in 2017.

Throughout 2017, the Puget Sound cooperators planned and executed effective multi-agency treatments. WSDA provided funding to WDFW to survey and treat the most heavily infested areas of the county. DNR provided funding for PSC crews to assist with control efforts. All of the project partners who worked with the PSC crews appreciate the opportunity.

ICNWCB and its contractor Wildlands Management controlled the major Spartina infestations and seed sources on Whidbey Island in 2017. They combined to treat 0.52 solid acres of Spartina throughout Island County in 2017. This is an increase from the 0.36 acres treated in 2016. This increase is the result of improved access to both Hancock Lagoon and Crescent Harbor on Whidbey Naval Air Station. Access to these infestations has been limited in the past. Maintaining communication between ICNWCB and the Navy will be key to future access to these sites.

WDFW treated a total of 0.78 solid acres in Island County in 2017. This represents a 54 percent decrease from the 1.7 solid acres treated in 2016. The majority of the 2017 Island County Spartina infestation occurred in and around Emericks and Prices Islands (Fig. 11). For 2018, these areas will require significant support and resources in order to meet eradication objectives.

In addition, Island County contains Puget Sound’s only known infestation of Spartina densiflora in Race Lagoon located on Whidbey Island. No Spartina densiflora was located at this site in 2017.

![Figure 10: Solid acres of Spartina in Island County by year, based on WSDA estimates. The blue line (with diamond points) represents the historic area of Spartina since 2003. The red line (with square point) represents the projected Spartina area through 2018.](image)
Figure 11: 2017 Island County *Spartina* distribution.
Skagit County

In 2017, Skagit County contained the third largest infestation of *Spartina* in Puget Sound. Approximately 0.41 solid acres (17,860 ft²) of *Spartina anglica* representing 1,377 occurrence points and 1,425 individual plants was found and treated in 2017 by the Skagit County Noxious Weed Control Board (SCNWCB), Ecology, WDFW, WSDA, and the Swinomish Tribal Community (Fig. 12). This represents a 20 percent increase from the 0.33 solid acres treated in 2016. This increase can be explained by one of the most detailed survey and treatment efforts to date. WSDA provided $40,000 to SCNWCB and $3,500 to the Swinomish Tribal Community for *Spartina* eradication activities in 2017.

Survey and treatment efforts by SCNWCB occurred throughout Skagit County (Fig. 13). Nearly, 1500 more acres of salt marsh, mudflat and estuarine habitat were surveyed in 2017 compared to 2016. This increase is mainly attributable to crew experience conducting similar surveys and having more crew members available throughout the field season. WSDA provided airboat, Marsh Master and crew assistance to SCNWCB in 2017 to survey and treat difficult to reach areas of the county. For 2018, WSDA will continue to provide equipment and crews to assist the SCNWCB in eradication efforts.

The Swinomish Tribal Community engaged in *Spartina* control on their lands in 2017. Two thorough rounds of survey and treatment were completed. The 2017 season saw an increase in total *Spartina anglica* found and treated, from 0.08 solid acres (3615 ft², and 470 occurrence points) in 2016 to 0.12 solid acres (5314 ft² and 320 occurrence points) in 2017. This increase is the result of the tribal crew documenting cooperative treatment efforts conducted both on and off the Reservation. The Swinomish Tribal Community’s continued cooperation and treatment efforts are essential to eliminate *Spartina* from Skagit County.

Ecology has controlled *Spartina* on their Padilla Bay Estuarine Research Reserve since 1996. Two species of *Spartina* have historically infested Padilla Bay, *Spartina anglica* and *Spartina alterniflora*. During the 2017 treatment season, Ecology found and dug approximately five small *S. anglica* plants, while no *S. alterniflora* was found.
Figure 13: 2017 Skagit County *Spartina* distribution by species.
Whatcom County

In Whatcom County, *Spartina anglica* clones were discovered within the Lummi Nation’s Reservation in 2010. In 2011, a cooperative effort was initiated with the Lummi Nation, the Whatcom County Noxious Weed Control Board (WCNWCB), People for Puget Sound, and WSDA. With the cooperation of the Lummi Nation, survey and removal (digging) efforts were conducted thru 2016. The use of herbicide treatments on Lummi Nation lands has been discussed intermittently. However, perceived permitting challenges and herbicide concerns have derailed past discussions.

In 2017, surveyors found an infestation expanded by 276 percent over 2016 levels. Surveyors located 72 individual clones totaling 813 ft² and removed 2,163 seed heads. Two small plants were removed by digging as most of the infestation has quickly expanded to the point where digging no longer represents a viable control alternative. The WCNWCB is working with the Lummi Nation to have permitting for herbicide treatments in place by spring/summer 2018. No *Spartina* was found outside of the Lummi Flats area during the 2017 survey.

WSDA and the WCNWCB will continue to assist the Lummi Nation in the survey and treatment of *Spartina* located within their estuaries. In 2017, WSDA provided $2,000 to the WCNWCB to survey potential *Spartina* habitat located within the County. Figure 14 depicts the 2017 distribution of *Spartina* in Whatcom County including site names.

![Figure 14: 2017 Whatcom County Spartina distribution by species.](image-url)
San Juan County

Approximately 0.001 solid acres or 44 ft² of Spartina anglica was treated in San Juan County in 2017. All of this Spartina was located within active survey sites on San Juan and Lopez Islands, including Fisherman’s Bay and Spencer Spit on Lopez Island along with Argyle Lagoon, Low Point, and White Point on San Juan Island. This represents a slight increase from the 41 ft² treated in 2016 where all of the Spartina treated was found in Argyle Lagoon.

In 2018, WSDA will continue to assist the San Juan County Weed Board in the survey and treatment of all vulnerable habitat located within the county. The WSDA Survey Crew will also complete shoreline survey on north Orcas Island and the surrounding islands. Figure 15 depicts the 2017 distribution of Spartina in San Juan County including site names.

Figure 15: 2017 San Juan County Spartina distribution by species.
**Clallam County**

In 2017, WSDA continued to work with the Clallam County Noxious Weed Control Board, USFWS, and the Makah Tribe to conduct surveys and control *Spartina* in Clallam County. These cooperators played an important role in all aspects of integrated weed management from consent to control work during the treatment season.

Clallam County infestations were located in 2007 during aerial and shoreline surveys. Two species of *Spartina* totaling approximately one acre were discovered. *Spartina alterniflora* was found on the Sooes and Waatch rivers while *Spartina anglica* was located at Salt Creek, Dungeness Spit and the Pysht River. Multiple surveys and treatments of each site since 2007 have greatly reduced the *Spartina* infestation in Clallam County.

During the 2017 survey season, the WSDA crew found four plants and removed 10 square feet of *Spartina alterniflora* from the Waatch River site. The Gibson Spit site will move to monitor after three consecutive years of negative surveys. Figure 16 depicts the distribution of *Spartina* in Clallam County including site names.

In 2018, thorough ground and kayak surveys of all vulnerable *Spartina* habitat in Clallam County is recommended. With continued control efforts during the upcoming years, WSDA looks forward to a countywide *Spartina* eradication.

*Figure 16: 2017 Clallam County *Spartina* distribution by species.*
Kitsap County

In Kitsap County, approximately 0.0017 of a solid acres (75ft²) of *Spartina anglica* (42 occurrence points) was manually removed in 2017. WSDA and the Suquamish Tribe worked together to treat the largest known infestation in the central Puget Sound located at Doe-Kag-Wats, where new fall survey protocols have contributed to recent finds (See Page ii). With continued dedication to the effort, eradication appears attainable (Fig. 17). Additionally, the Manzanita Bay site met Eradication Criteria (Fig. 18).

For 2018, the WSDA crew will continue to survey the estuarine habitat of Kitsap County to ensure that no new outlying infestations exist. There will also be an active site added to the list for the upcoming treatment season. WSDA crew members discovered a large clone, estimated at 600ft², on east Bainbridge Island in an area known as Murden Cove. The plant was discovered, during a kayak survey, late in the 2017 season near the back of the estuary. WSDA will seek landowner permission to treat this new find in 2018.

![Figure 17: Doe-Kag-Wats infestation history.](image1)

![Figure 18: 2017 Kitsap County *Spartina* distribution by species.](image2)
Jefferson County

WSDA continues to work with the Jefferson County Noxious Weed Board, U.S. Navy, Washington State Parks, and private landowners to conduct surveys and control *Spartina* in Jefferson County.

Two species of *Spartina* infest Jefferson County, *S. anglica* and *S. patens*. Volunteer surveys in the 1990s revealed scattered infestations of *S. anglica* at several locations within the county. *S. patens* was discovered in the 1990s at Dosewallips State Park on Hood Canal by The Evergreen State College professor Dave Milne while on a field trip with his class. An additional *S. patens* site was discovered by WSDA crews in 2013 across from the Bangor Naval Base. Multiple visits to all known sites over the last several years have led to a vast reduction of *Spartina* within the county.

In 2017, surveys yielded 9 *Spartina* occurrence points totaling approximately 375 ft² (0.086 acres) treated within Jefferson County. Of this total, WSDA crews treated approximately 323 ft² of *S. patens* on both public and private land just north of Dosewallips State Park. An additional 51 ft² of *S. patens* was treated by WSDA crews at the Bangor West site. There was also 1 ft² *S. anglica* removed from the Walan Point site (Fig. 19).

In 2018, continued shoreline surveys in Jefferson County are recommended. Additionally, continued landowner support to the north and south of Dosewallips State Park and the Bangor Naval Base will be crucial in the effort to eradicate *S. patens* from Washington State.

![Figure 19: 2017 Jefferson County *Spartina* distribution by species.](image-url)
Pierce County

*Spartina anglica* was discovered for the first time in Pierce County in 2010 at Squally Beach/Commencement Bay along the Hylebos Waterway in the Port of Tacoma. At this time, approximately 60 ft² (0.0014 solid acres) of *Spartina* was manually removed by crews from WSDA and WDFW. In 2011, WSDA crews conducted three rounds of survey at the site, finding and removing 18 ft² (0.0004 solid acres) of *Spartina*. Two survey/treatment laps were conducted in 2012 where 6 ft² (0.00014 solid acres) were manually removed. In 2013 and 2014, two rounds of survey were conducted where 2 ft² of *anglica* was removed. After multiple trips to the site in 2015, 2016, and 2017, no *Spartina* has been found. In 2016 and 2017, extensive surveys of surrounding habitat were conducted and no *Spartina* was found. With these results the Squally Beach survey site will move to the monitor site list in 2018, adding Pierce County to the list of eradicated counties. WSDA will continue to cooperate with the Pierce County Noxious Weed Control Board and the Puyallup Tribe to survey the vulnerable habitat in Pierce County. Figure 20 depicts the location of the Squally Beach, Pierce County site.

![Figure 20: 2017 Pierce County Spartina distribution by species.](image)
King County

Historically, small infestations of *S. anglica* were found on Vashon Island near Rabs Lagoon, Point Heyer, Gorsuch Road and Fern Cove. Following the 2013 treatment season, the county was declared “eradicated.” However, in 2014, surveys conducted by WSDA crews at Point Heyer revealed 3 ft² of *Spartina*. Since then the site has been negative during multiple surveys in 2015, 2016, and now 2017, when no plants were found on three trips to the area. In 2018, Point Heyer will be reclassified as a monitor site and King County will be considered eradicated. WSDA and King County Noxious Weed Control Board will continue to monitor the estuarine habitat of King County to ensure that no new infestations occur. Figure 21 depicts the 2017 distribution of *Spartina* in King County including site names.

Figure 21: 2017 King County *Spartina* distribution by species.