

Washington Invasive Ranking System

Washington Natural Heritage Program

Spartina alterniflora (Smooth Cordgrass)

Assessed by

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Ecological Impact Rank: **High** (83)

Confidence: **Moderate** (58)

Management Difficulty Rank: High (84)

Confidence: High (70)

Biological Characteristics of Invasiveness: Moderate (69)

Confidence: High (67)

Concern Related to Distribution and Abundance: Insignificant (20)

Confidence: High (80)



Photo Credit: Zoya Akulova 2009, used under Creative Commons license (CalPhotos, 2024).

Ranking Notes

Rapid assessment only, based primarily on professional expertise.

Legal Listings

[Washington State Weed Board](#): List A, Washington State quarantine list

[Washington Invasive Species Council](#): Yes

Section 1: Distribution and Abundance

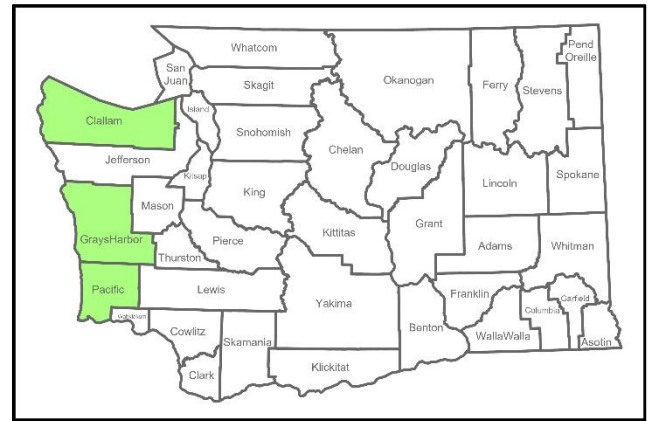


Figure 1. Distribution of counties where *Spartina alterniflora* has been documented in Washington State (CPNWH, 2023; EDDMapS, 2023; iNaturalist Contributors, 2023).

Q1: Current Range Size in Washington

Rating: Low

Confidence: High

Spartina alterniflora is documented from 8% of counties in Washington State (CPNWH, 2023; EDDMapS, 2023; iNaturalist Contributors, 2023).

Source: Professional expertise, Herbarium records and other observations

Q2: Current Trend in Total Range

Rating: Insignificant

Confidence: High

A long term (30+ years) eradication program has been successful in mostly eradicating this species. There are still a few spots in Willapa Bay where it is found (CPNWH, 2023).

Source: Professional expertise, Herbarium records

Q3: Proportion of Potential Range Currently Unoccupied

Rating: High

Confidence: High

Spartina eradication efforts have reduced its acreage in Washington from >9,000 acres (in 2003) to approximately 4 acres (in 2023). While successful, this means that at least 99% of its potential range is currently unoccupied.

Source: Professional expertise, Herbarium records

Q4: Local Range Expansion or Change in Abundance

Rating: Insignificant

Confidence: High

Millions of dollars have been spent to eradicate this plant over the past 30 years.

Source: Professional expertise

Q5: Diversity of Ecosystems Invaded

Ecosystem types: Coastal Brackish Tidal Wetland, Marine Seagrass & Kelp Bed

Rating: Low

Confidence: Not Rated

This species mostly occupies mudflats and saltmarshes. It competes with eelgrass, but mostly *Nanozostera japonica* (Japanese eelgrass).

Source: Professional expertise

Section 2: Biological Characteristics

Q6: Aggressive Mode of Reproduction

Rating: Yes

Confidence: High

This species produces abundant seed and can reproduce from floating rhizomes.

Source: Professional expertise

Q7: Innate Potential for Long-Distance Dispersal

Rating: Yes

Confidence: High

Seed and rhizomes travel throughout water bodies with currents and tides.

Source: Professional expertise

Q8: Potential to be Spread by Human Activities

Rating: Yes

Confidence: High

Seed can travel via mud on boots or clothing. Plants were likely spread to the west coast via oyster packing material.

Source: Professional expertise

Q9: Allelopathy

Rating: No

Confidence: Moderate

Source: Professional expertise

Q10: Competitive for Limiting Abiotic Factors

Rating: Unknown

Confidence: Not Rated

Source:

Q11: Growth Form

Rating: Yes

Confidence: High

This species grows in dense swards.



Source: Professional expertise

Q12: Germination Requirements

Rating: Yes

Confidence: High

This species germinates in open mudflat and openings in saltmarsh.

Source: Professional Expertise

Q13: Invasiveness of Other Plants in Genus

Rating: Yes

Confidence: High

Spartina anglica (introduced from Europe) and *S. densiflora* (introduced from Chile) are present in Washington (Weinmann et al., 2002) and considered invasive (NWCB, 2025).

Source: Professional Expertise, Herbarium records

Q14: Shade Tolerance

Rating: Low/Insignificant

Confidence: Low

This species likely does not tolerate shade.

Source: Professional expertise

Q15: Disturbance Tolerance

Rating: No

Confidence: Moderate

All salt marsh plants are typically disturbance tolerant and this species does not appear to gain a competitive advantage from disturbance.

Source: Professional expertise

Q16: Propagule Persistence

Rating: <5 years

Confidence: Low

The assessor estimates seed persistence of 4–5 years and 1–2 years for rhizomes.

Source: Professional expertise

Q17: Palatability

Rating: Yes, plant is unpalatable

Confidence: High

Elk will eat this species rarely, when accessible, but herbivory is not a practical control for this species.

Source: Professional expertise

Section 3: Ecological Impact

Q18: Impact on Ecosystem Abiotic Processes

Abiotic Processes: Geomorphology, Hydrology, Light availability

Rating: Moderate

Confidence: Moderate

This species has significant impacts on wave energy and sedimentation rates in intertidal ecosystems.

Source: Professional expertise

Q19: Impact on Ecosystem Structure

Rating: High

Confidence: High

The impact this species has on ecosystem structure is high on mudflats and moderate in salt marshes. It takes over mudflats, displacing shorebirds and invertebrate foraging habitat.

Source: Professional expertise

Q20: Impact on Ecosystem Composition

Rating: High

Confidence: Moderate

This species shades diatoms, micro algae and eelgrasses and changes mudflats to high marsh through accumulation of silt. It also displaces salt marsh species.

Source: Professional expertise

Q21: Impact on Particular Native Species

Rating: Not Rated

Confidence: Not Rated

Source:

Q22: Observed Ability to Invade Undisturbed Ecosystems

Rating: Moderate

Confidence: Moderate

This species is not as competitive in established saltmarsh vegetation as it is in more frequently flooded sites, such as mudflats.

Source: Professional expertise

Q23: Observed Ability to Invade Naturally Disturbed Ecosystems

Rating: Yes

Confidence: High

Source: Professional expertise

Section 4: Management Difficulty

Q24: General Management Difficulty

Rating: High

Confidence: High

It took over thirty years and millions of dollars to control this plant. Siltation on plants interferes with herbicide efficacy.

Source: Professional expertise

Q25: Minimum Time Commitment

Rating: High

Confidence: High

See comments in Q24

Source: Professional expertise

Q26: Impacts of Management on Native Species

Rating: Moderate

Confidence: Moderate

Herbicides used to treat this species are non-selective and also kill native saltmarsh vegetation.

Source: Professional expertise

Q27: Inaccessibility of Invaded Areas

Rating: Moderate

Confidence: Moderate

Tides, mud, and channels make treating this plant very time-consuming and difficult. Airboats and other watercraft are nearly prerequisites for treatment.

Source: Professional expertise

Q28: Sociopolitical Implications of Management

Rating: Moderate/Low

Confidence: Moderate

Oyster growers and others from the public have objected to herbicide use in Willapa Bay and elsewhere.

Source: Professional expertise

Additional Comments

None

References

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