Washington Invasive Ranking System

Washington Natural Heritage Program

Arrhenatherum elatius (Tall Oatgrass)

Assessed by
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Ecological Impact Rank: **Moderate** (65)	Confidence: **High** (75)
Management Difficulty Rank: High (72)	Confidence: High (80)
Biological Characteristics of Invasiveness: Moderate (59)	Confidence: High (75)
Concern Related to Distribution and Abundance: High (73)	Confidence: High (70)

Photo Credit: Fred Weinmann 1993 (Burke Herbarium, University of Washington, 2024).

Ranking Notes

Rapid assessment only, based primarily on professional expertise.

Legal Listings

Washington State Weed Board: No

Washington Invasive Species Council: No

Section 1: Distribution and Abundance

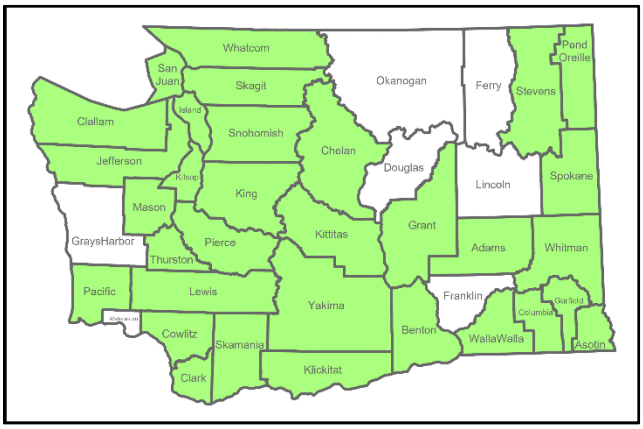

Figure 1. Distribution of counties where *Arrhenatherum elatius* has been documented in Washington State (CPNWH, 2024; EDDMapS, 2024; iNaturalist Community, 2024).

Q1: Current Range Size in Washington

Rating: High

Confidence: Moderate

Arrhenatherum elatius has been documented in 82% of counties in Washington (CPNWH, 2024; EDDMapS, 2024; iNaturalist Community, 2024).

Source: Professional expertise, Herbarium records and other observations

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Q2: Current Trend in Total Range

Rating: Moderate

Confidence: Moderate

Source: Professional expertise

Q3: Proportion of Potential Range Currently Unoccupied

Rating: Moderate

Confidence: Moderate

Source: Professional expertise

Q4: Local Range Expansion or Change in Abundance

Rating: Moderate

Confidence: High

Source: Professional expertise

Q5: Diversity of Ecosystems Invaded

Ecosystem types: Grassland & Shrubland

Rating: Low

Confidence: High

Source: Professional expertise

Section 2: Biological Characteristics

Q6: Aggressive Mode of Reproduction

Rating: Yes

Confidence: High

Source: Professional expertise

Q7: Innate Potential for Long-Distance Dispersal

Rating: No

Confidence: Moderate

Source: Professional expertise

Q8: Potential to be Spread by Human Activities

Rating: Yes

Confidence: High

Source: Professional expertise

Q9: Allelopathy

Rating: No

Confidence: Moderate

Source: Professional expertise

Q10: Competitive for Limiting Abiotic Factors

Rating: Yes

Confidence: High

Source: Professional expertise

Q11: Growth Form

Rating: Yes

Confidence: High

Arrhenatherum elatius is a sod forming grass and grows up to 5 feet tall.

Source: Professional expertise

Q12: Germination Requirements

Rating: No

Confidence: Moderate

Source: Professional expertise

Q13: Invasiveness of Other Plants in Genus

Rating: No

Confidence: High

Arrhenatherum elatius is the only species in this genus established in North America.

Source: Professional expertise

Q14: Shade Tolerance

Rating: Moderate

Confidence: High

Arrhenatherum elatius likes to grow along tree lines where it gets partial shade and hydrologic uplift.

Source: Professional expertise

Q15: Disturbance Tolerance

Rating: Yes

Confidence: High

Arrhenatherum elatius resprouts quickly after burning or grazing.

Source: Professional expertise

Q16: Propagule Persistence

Rating: Unknown

Confidence: Not Rated

Source:

Q17: Palatability

Rating: Yes, plant is unpalatable

Confidence: Moderate

Arrhenatherum elatius was introduced as a pasture grass. This species has a bitter taste to cattle and wildlife does not graze it enough to provide control (Afonin et al., 2016).

Source: Professional expertise

Section 3: Ecological Impact

Q18: Impact on Ecosystem Abiotic Processes

Abiotic Processes: Fire, Light availability

Rating: Moderate

Confidence: Moderate

Source: Professional expertise

Q19: Impact on Ecosystem Structure

Rating: Moderate

Confidence: High

Arrhenatherum elatius transforms bunchgrass to tallgrass sod.

Source: Professional expertise

Q20: Impact on Ecosystem Composition

Rating: High

Confidence: High

Source: Professional expertise

Q21: Impact on Particular Native Species

Rating: Moderate

Confidence: Moderate

Arrhenatherum elatius can crowd out the native host plants that *Castilleja* species prefer. Not all host plants provide equal benefit for *Castilleja* species, and the loss of appropriate host taxa can reduce or prevent reproduction in at least some *Castilleja* (Adler, 2003). Reduction in host plant quality combined with direct competition for space and other resources could make hemiparasitic taxa like *Castilleja* more vulnerable than co-occurring native taxa to invasion by introduced species.

Source: Published research, Professional expertise

Q22: Observed Ability to Invade Undisturbed Ecosystems

Rating: Low

Confidence: Moderate

Arrhenatherum elatius impacts native ecosystems and conservation areas that depend on disturbance. This species has a high impact on Puget prairies, which depend on disturbance; but elsewhere it is a relatively manageable nonnative pasture grass.

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

Arrhenatherum elatius is extremely difficult to manage in grasslands and is not likely to be eradicated completely where it occurs. Annual spraying is required to keep populations under control. Even in

previously managed populations, this species increases in density and range quickly without treatment. Individual plants are fairly resistant to herbicide.

This species also takes advantage of nitrogen fixing plants, particularly Scotch broom (*Cytisus scoparius*). Where these two species co-occur, successful treatment of *Arrhenatherum elatius* requires treatment of the Scotch broom first.

Source: Professional expertise

Q25: Minimum Time Commitment

Rating: High

Confidence: High

Source: Professional expertise

Q26: Impacts of Management on Native Species

Rating: Low

Confidence: Moderate

Grass-specific herbicides minimize impacts on desirable vegetation, except for a couple of native grass species.

Source: Professional expertise

Q27: Inaccessibility of Invaded Areas

Rating: Insignificant

Confidence: High

Source: Professional expertise

Q28: Sociopolitical Implications of Management

Rating: Moderate/Low

Confidence: Moderate

The sheer volume of herbicide required to manage this species could be cause for public concern. People may not understand why this grass is a target for management on a prairie.

Source: Professional expertise

Additional Comments

None

References

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