

Washington Invasive Ranking System

Washington Natural Heritage Program

Lythrum salicaria (Purple Loosestrife)

Assessed by

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Ecological Impact Rank: **Moderate** (63)

Confidence: **Low** (33)

Management Difficulty Rank: High (84)

Confidence: Moderate (60)

Biological Characteristics of Invasiveness: Moderate (60)

Confidence: Moderate (58)

Concern Related to Distribution and Abundance: Moderate (64)

Confidence: Moderate (50)



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Ranking Notes

Lythrum salicaria was assessed by multiple individuals. Range of assessor ratings is provided in parentheses following the final assigned rating.

Legal Listings

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

[Washington Invasive Species Council](#): Yes

Section 1: Distribution and Abundance



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

Q1: Current Range Size in Washington

Rating: High

Confidence: High

Lythrum salicaria is found in 95% of counties in Washington (CPNWH, 2023; EDDMapS, 2023; iNaturalist Contributors, 2023).

Source: Herbarium records and other observations

Q2: Current Trend in Total Range

Rating: Low

Confidence: Moderate

This species is already found in almost all counties in Washington (Munger, 2002).

Source: Informal publication, Professional expertise

Q3: Proportion of Potential Range Currently Unoccupied

Rating: Low (range Insignificant - Low)

Confidence: Moderate (range Moderate - High)

Temperature limits germination in *Lythrum salicaria*. Increasing temperatures may allow this species to germinate more abundantly where it is currently found and allow it to establish in additional locales (Shamsi & Whitehead, 1974).

Source: Published research, Professional expertise

Q4: Local Range Expansion or Change in Abundance

Rating: Moderate

Confidence: Low (range Low - Moderate)

Source: Professional Expertise

Q5: Diversity of Ecosystems Invaded

Ecosystem types: Emergent Open Wetland, Shallow Water Wetland (Aquatic)

Rating: Low

Confidence: Moderate

Lythrum salicaria may sometimes establish in disturbed peatlands.

Source: Professional expertise

Section 2: Biological Characteristics

Q6: Aggressive Mode of Reproduction

Rating: Yes

Confidence: High

Mature *Lythrum salicaria* can produce 2.5 million seeds per established plant in good conditions; even young plants can produce 100,000 seeds (Thompson et al., 1987).

Source: Informal publication, Professional expertise

Q7: Innate Potential for Long-Distance Dispersal

Rating: Yes

Confidence: High

Seedlings are buoyant and can be dispersed along waterways and tiny seeds can be transported by waterfowl and aquatic mammals (Thompson et al., 1987).

Source: Informal publication, Professional expertise

Q8: Potential to be Spread by Human Activities

Rating: Yes

Confidence: Moderate

Lythrum salicaria can be spread by watercraft, irrigation development (Thompson et al., 1987), and horticultural introductions.

Source: Professional expertise, Published research

Q9: Allelopathy

Rating: No

Confidence: Moderate

No evidence was found suggesting this species is allelopathic.

Source: Professional expertise

Q10: Competitive for Limiting Abiotic Factors

Rating: No

Confidence: Moderate



Lythrum salicaria is a fast-growing, competitive perennial that can reproduce its first year and quickly regenerate from root stock but otherwise does not appear particularly aggressive in competing for limiting abiotic factors.

Source: Professional expertise

Q11: Growth Form

Rating: Yes

Confidence: Low

Lythrum salicaria forms dense thickets, but the primary native plants it often competes with (e.g., *Typha*, *Schoenoplectus*) are just as tall and unlikely to be shaded out. A study from the east coast showed no difference in species richness between areas with and without purple loosestrife (Treberg & Husband, 1999).

Source: Published research, Professional expertise

Q12: Germination Requirements

Rating: No

Confidence: High

Germination requires some amount of sunlight to occur and experimental plantings in wetland plots with no disturbance showed no germination (Rachich & Reader, 1999). Seeds can, however, germinate underwater.

Source: Published research, Professional expertise

Q13: Invasiveness of Other Plants in Genus

Rating: Yes

Confidence: High

Lythrum virgatum is also a Class B weed in Washington (NWCB, 2025) and other exotic *Lythrum* species may also be considered invasive.

Source: Informal publication, Professional expertise

Q14: Shade Tolerance

Rating: Low/Insignificant

Confidence: High

Source: Professional Expertise

Q15: Disturbance Tolerance

Rating: Yes

Confidence: Low

One study found 91% of clipped seedlings resprouted within 42 days. Mature plants can resprout from rootstock (Gabor & Murkin, 1990). However, the degree to which this provides a competitive advantage to *Lythrum salicaria* is unclear, as it typically establishes in native communities characterized by highly disturbance-tolerant genera (*Typha*, *Schoenoplectus*, etc.).

Source: Published Research, Professional Expertise

Q16: Propagule Persistence

Rating: >5 years

Confidence: Moderate

One source from Canada suggests seed longevity up to 20 years (Regional District Okanagan-Similkameen, 2006). More conservative assessments have confirmed viability of at least 80% beyond 2-3 years (Shamsi & Whitehead, 1974; Rawinski, 1982). The sheer volume of seeds often leads to seed bank dominance (Welling & Becker, 1993).

Source: Published research, Informal publication, Professional expertise, Thesis

Q17: Palatability

Rating: Yes, plant is unpalatable

Confidence: Moderate

Lythrum salicaria primarily grows in areas with little herbivory pressure from livestock, but studies have shown that muskrats prefer other species such as cattails (*Typha* spp.) (Thompson et al., 1987).

Source: Published research, Professional expertise

Section 3: Ecological Impact

Q18: Impact on Ecosystem Abiotic Processes

Abiotic Processes: Geomorphology, Hydrology, Light availability, Nutrient dynamics

Rating: Moderate (range Low - Moderate)

Confidence: Low

Lythrum salicaria may impact detrital food chains (Grout et al., 1997). A report from the Snake River warns that *Lythrum salicaria* may speed aggradation of gravel bars through increased sedimentation trapping (Dixon & Johnson, 1999).

Source: Published research, Professional expertise

Q19: Impact on Ecosystem Structure

Rating: Moderate (range Low - Moderate)

Confidence: Moderate (range Low - Moderate)

Lythrum salicaria populations can substantially reduce the amount of open water in marshes, or speed the development of aquatic vegetation towards marsh. *Lythrum salicaria* may shift communities from graminoid dominance to forb dominance, but rarely completely replaces characteristic marsh genera like *Typha* and *Schoenoplectus*.

Source: Professional expertise

Q20: Impact on Ecosystem Composition

Rating: Moderate

Confidence: Low (range Low - High)

Information regarding impacts to native plant species composition is contradictory and often based on untested hypotheses (Anderson, 1995; Hager & McCoy, 1998). Research has generally failed to demonstrate *Lythrum salicaria* impacts on native plant diversity and apparent monocultures may have had low species richness to start (Anderson, 1995; Treberg & Husband, 1999). While diversity impacts have not been proven, reductions in cover of dominant native species are readily apparent.

Source: Published research, Professional expertise

Q21: Impact on Particular Native Species

Rating: Low

Confidence: Low

Lythrum salicaria hybridizes with *Lythrum alatum* (native in central and eastern North America)

(Houghton-Thompson et al., 2005), but there are no native *Lythrum* species in Washington. There are many hypotheses regarding *Lythrum salicaria* impacts on various native animal and plant species (e.g., Bury, 1979), but the assessors found no strong evidence for disproportionate impacts on individual species.

Source: Published research, Professional expertise

Q22: Observed Ability to Invade Undisturbed Ecosystems

Rating: Moderate (range Low - High)

Confidence: Moderate

This plant is most pervasive in ecosystems that experience regular disturbance. However, it may establish in relatively low-disturbance ecosystems following one-off events and then persist for very long periods with low-level recruitment (Thompson et al., 1987; Anderson, 1991).

Source: Published research, Professional expertise, Thesis

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 (range Moderate - High)

Confidence: High

Once strongly established, control of *Lythrum salicaria* is “expensive, intrusive, and difficult” (Thompson et al., 1987; Munger, 2002). Reintroduction is very likely along waterways that are not comprehensively treated.

Source: Published research, Professional expertise

Q25: Minimum Time Commitment

Rating: Moderate



Confidence: Moderate

This species resprouts readily and the seed bank is difficult to exhaust (Welling & Becker, 1993).

Source: Published research, Professional expertise

Q26: Impacts of Management on Native Species

Rating: Moderate

Confidence: Moderate

In very small populations mechanical (hand pulling) may be the most effective removal strategy, though care must be taken to leave behind any vegetative fragments that can resprout. In larger, established populations herbicide is often recommended. This poses little threat to monocots but is damaging to dicots. Most of dominant, diagnostic native species are monocots in the ecosystems where *Lythrum salicaria* poses a threat.

Source: Professional expertise

Q27: Inaccessibility of Invaded Areas

Rating: Moderate

Confidence: Moderate

A substantial proportion of populations are in wetland riparian areas that are difficult to access.

Source: Professional expertise

Q28: Sociopolitical Implications of Management

Rating: Moderate/Low (range Insignificant - Moderate/Low)

Confidence: Moderate

Lythrum salicaria can be a food source for honeybees. It is no longer commonly promoted as an ornamental plant (Thompson et al., 1987).

Source: Published research, Professional expertise

Additional Comments

The Fire Effects Information System provides an excellent review of the state of knowledge regarding *Lythrum salicaria*, although information is only current as of 2002 (Munger, 2002).

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