

Washington Invasive Ranking System

Washington Natural Heritage Program

Juncus effusus ssp. *effusus* (Common Rush)

Assessed by

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Ecological Impact Rank: **Low** (50)

Confidence: **Moderate** (42)

Management Difficulty Rank: Low (49)

Confidence: Low (10)

Biological Characteristics of Invasiveness: High (87)

Confidence: High (76)

Concern Related to Distribution and Abundance: High (76)

Confidence: High (70)



Photo Credit: *Juncus effusus* ssp. *effusus*. Barbara L. Wilson 2016, used under Creative Commons license (iNaturalist Community, 2024).

Ranking Notes

Some taxonomists do not distinguish subspecies in the *Juncus effusus* aggregate (e.g., Brooks & Clemants, 2019), but experts in the Pacific Northwest find that characteristics of *Juncus effusus* ssp. *effusus* are reliably different from native subspecies of *J. effusus* (Zika, 2003).

Subspecies-level information about *J. effusus* ssp. *effusus* was generally not available, though information from Europe likely addresses this

subtaxon. Information from the eastern U.S. likely addresses *Juncus effusus* ssp. *solutus*, which is also introduced in the western U.S., but found in wetter habitats than *J. effusus* ssp. *effusus* (Zika, 2003).

Legal Listings

[Washington State Weed Board](#): No

[Washington Invasive Species Council](#): No

Section 1: Distribution and Abundance

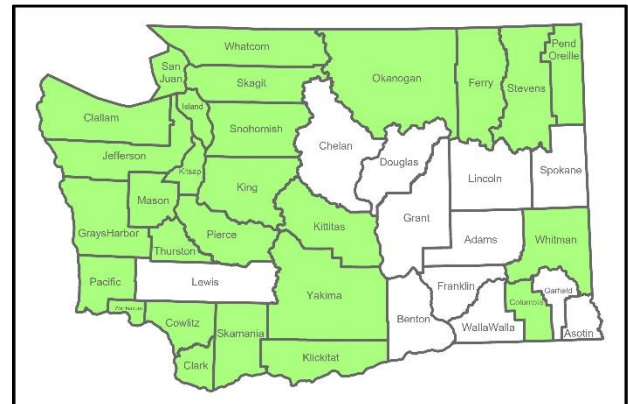


Figure 1. Distribution of counties where *Juncus effusus* ssp. *effusus* has been documented in Washington State (CPNWH, 2023; EDDMapS, 2023; iNaturalist Contributors, 2023).

Q1: Current Range Size in Washington

Rating: High

Confidence: High

Juncus effusus ssp. *effusus* is known from 27 of 39 (69%) counties in Washington State (CPNWH, 2023; EDDMapS, 2023; iNaturalist Contributors, 2023).

Source: Herbarium records and other observations

Q2: Current Trend in Total Range

Rating: Moderate

Confidence: High

Juncus effusus ssp. *effusus* does not appear to be as abundant in the Columbia Plateau or Okanogan ecoregions as it is elsewhere in Washington (CPNWH, 2023; iNaturalist Contributors, 2023), suggesting potential ecological constraints to expansion in those ecoregions. Based on herbarium records and other observations, much of the expansion into the Cascades and east side of the Olympic Peninsula appears to have occurred in the last 20 years (CPNWH, 2023; iNaturalist Contributors, 2023).

Source: Herbarium records and other observations

Q3: Proportion of Potential Range Currently Unoccupied

Rating: Low

Confidence: Moderate

Juncus effusus ssp. *effusus* is known from 27 of 39 (69%) counties in Washington State (CPNWH, 2023; iNaturalist Contributors, 2023). Based on habitat needs and potential adaptability (Arslan et al., 2019), it seems likely that this species could still expand to new counties in Washington, but that expansion in drier areas like the Columbia Plateau may be constrained by availability of appropriate habitat.

Source: Published research, Herbarium records and other observations

Q4: Local Range Expansion or Change in Abundance

Rating: Moderate

Confidence: Moderate

In the last 10 years, local range and abundance of *Juncus effusus* ssp. *effusus* is expanding mainly west of the Cascades. Some increase in local abundance and range has also occurred in northeastern Washington in the Canadian Rockies ecoregion in the last 20 years (CPNWH, 2023; iNaturalist Contributors, 2023).

Source: Herbarium records and other observations

Q5: Diversity of Ecosystems Invaded

Ecosystem types: Emergent Open Wetland, Bogs & Fens, Forested Wetland

Rating: Moderate

Confidence: Moderate

Juncus effusus is found in a wide range of wetlands, including wet meadows and pastures, marshes, seeps, lakeshores, wet woodlands and riparian areas, disturbed fens and bogs, and other disturbed wet areas (McCorry & Renou, 2003; Zika, 2015; Arslan et al., 2019; Brooks & Clemants, 2019). *Juncus effusus* is most successful in acidic and somewhat nutrient-rich soils. This taxon is not found in permanently submerged areas and likely relies on fluctuating water tables (McCorry & Renou, 2003). This taxon is found in shallow peat and on the edges of healthy bogs and fens, but generally only invades disturbed (e.g., drained, mined, and/or grazed) bogs and fens (McCorry & Renou, 2003).

Source: Published research, Informal publication, Flora of North America and Jepson eFlora treatments

Section 2: Biological Characteristics

Q6: Aggressive Mode of Reproduction

Rating: Yes

Confidence: High

Juncus effusus reproduces by seed and short rhizomes and grows rapidly above and below ground (Ervin & Wetzel, 2000; Arslan et al., 2019). Seeds are abundant and disperse readily (Arslan et al., 2019). One source found that *J. effusus* could produce up to 8 million



seeds per yard (Lazenby, 1955), while other sources suggest 8,500 seeds per fertile stem, or 4 million seeds per square meter (McCorry & Renou, 2003). Seeds are the primary source for colonization by this taxon and germination rates are typically relatively high (Lazenby, 1955; McCorry & Renou, 2003). Established populations can maintain and expand themselves through rhizomes (McCorry & Renou, 2003).

Source: Published research, Informal publication

Q7: Innate Potential for Long-Distance Dispersal

Rating: Yes

Confidence: Moderate

Juncus effusus produces abundant small seeds that are dispersed readily by wind, animals, and water (Lazenby, 1955; Neff & Baldwin, 2005). Seeds are dispersed by wind relatively short distances, but likely travel further by water and animal dispersal. Seeds have been found in areas where adult plants are not present, suggesting at least some capability for long-distance dispersal (McCorry & Renou, 2003).

Source: Published research, Informal publication

Q8: Potential to be Spread by Human Activities

Rating: Yes

Confidence: High

Juncus effusus seeds can be dispersed by machinery and other human activities (McCorry & Renou, 2003). This taxon has also been studied for use in phytoremediation and is used in constructed wetlands built to treat wastewater (Arslan et al., 2019). Non-native subspecies are often mistakenly introduced to restoration sites (T. Ramm-Granberg, pers. comm. 2025).

Source: Published research, Informal publication, Professional expertise

Q9: Allelopathy

Rating: Yes

Confidence: Low

Juncus effusus produces several secondary compounds that are potentially allelopathic (Ervin & Wetzel, 2000). Senesced culms are slow to decay, also indicating potential for allelopathic effects. In a greenhouse study from Alabama, researchers found that *J. effusus* leachate could reduce germination of *J. effusus* seeds and survival of *J. effusus* seedlings but had no effect on germination or survival of other species tested. Researchers did find a slight reduction in chlorophyll production in one of the other species tested, but evidence was not strong enough to support or rule out allelopathy in this species (Ervin & Wetzel, 2000).

Source: Published research

Q10: Competitive for Limiting Abiotic Factors

Rating: Yes

Confidence: Moderate

Once established, *Juncus effusus* is an effective competitor. European populations of *J. effusus* have high genetic diversity in the portions of the genome associated with stress responses, likely helping this taxon tolerate a wide range of conditions (Arslan et al., 2019). Rapid growth, particularly underground, suggest *J. effusus* is highly competitive for soil resources (Ervin & Wetzel, 2000). Physiological adaptations also allow this taxon to obtain oxygen from saturated soils (Arslan et al., 2019). *Juncus effusus* remains green and photosynthetically active throughout the winter, at least at its base, even at latitudes further north than Washington (Ervin & Wetzel, 2002; McCorry & Renou, 2003).

Juncus effusus seedlings are much less tolerant of competition than mature plants. A 1955 study from Wales found that competition with other species reduced both the number of seeds that germinated and seedling survival, likely due to reduced light availability (Lazenby, 1955). Competition may have also reduced flowering in *J. effusus* in this study.

Source: Published research, Informal publication

Q11: Growth Form

Rating: Yes

Confidence: High



Juncus effusus frequently grows as dense tussocks. The natural growth form of this taxon (arched culms) can greatly reduce light availability below its canopy (Ervin & Wetzel, 2002). A study in Alabama on the effects of shading by *J. effusus* found that when culms were held upright to allow more light through their canopy, the diversity and biomass of other species increased compared to areas where *J. effusus* was unmanipulated (Ervin & Wetzel, 2002). Grasses were not significantly affected by shading from this species, but forbs were. Vegetation surveys found almost no other species growing in *J. effusus* tussocks (Ervin & Wetzel, 2002). However, *Juncus effusus* is only an effective competitor for light after it has established. Seedlings are poor competitors for light (Lazenby, 1955).

Source: Published research

Q12: Germination Requirements

Rating: No

Confidence: High

Juncus effusus establishment likely relies on a high number of seeds germinating in bare soil patches (Lazenby, 1955).

Source: Published research

Q13: Invasiveness of Other Plants in Genus

Rating: Yes

Confidence: High

No *Juncus* species occur on formal invasive lists in Washington (NWCB, 2024; Washington Invasive Species Council, 2024) and the Washington Natural Heritage Program has not previously considered any species or subtaxa to be invasive for the purposes of Ecological Integrity Assessments (Rocchio & Ramm-Granberg, 2022; Rocchio et al., 2024). A literature search found research on several species of *Juncus* considered invasive outside their native range (e.g., Ellery Mayence et al., 2010; Moe et al., 2013). *Juncus effusus* ssp. *effusus* is considered a weed (or native increaser) in at least part of its native range (Ireland and Great Britain), as well as in New Zealand (McCorry & Renou, 2003).

Source: Published research, Informal publications

Q14: Shade Tolerance

Rating: Moderate

Confidence: Low

Juncus effusus usually grows in full sun, but established plants grows well in partial shade and tolerate full shade (McCorry & Renou, 2003). Shading can prevent germination of *J. effusus* seed (as can desiccation) (Ervin & Wetzel, 2000).

Source: Published research, Informal publication

Q15: Disturbance Tolerance

Rating: Yes

Confidence: High

Experiments have found the *Juncus effusus* is an early colonizer of disturbed wetlands. Research in Europe found that while seedlings may not tolerate disturbance, competition, or drought (Lazenby, 1955), disturbance can allow buried *J. effusus* seeds to germinate (Ervin & Wetzel, 2000). Observations from Ireland are common in trampled areas in wetlands (e.g., trails or places where animals gather). Soil disturbance from grazing promotes establishment of *J. effusus* in wet pastures. Established plants are resilient to trampling, grazing, and mowing (McCorry & Renou, 2003).

Source: Published research, Informal publication

Q16: Propagule Persistence

Rating: >20 years

Confidence: High

Juncus effusus seed sink in water, allowing them to establish persistent seed banks. *Juncus effusus* seeds are long-lived in the seed bank, and populations have resurfaced after old beaver dams have failed (Ervin & Wetzel, 2000). One source reported *J. effusus* seeds could remain viable for more than 60 years (Lazenby, 1955).

Source: Published research



Q17: Palatability

Rating: Yes

Confidence: High

When found in pastures, *Juncus effusus* tussocks are obviously ungrazed (Brooks & Clemants, 2019). This taxon is regarded as a weed in Ireland, Great Britain, and New Zealand in part because it is unpalatable and has low nutritional value (McCorry & Renou, 2003).

Source: Informal publication, Flora of North America treatment

Section 3: Ecological Impact

Q18: Impact on Ecosystem Abiotic Processes

Abiotic Processes: Light availability, Chemistry

Rating: Moderate

Confidence: Low

A competition study in Alabama found that established *Juncus effusus* plants could reduce species richness and biomass by shading (Ervin & Wetzel, 2002). In Ireland, this species can also shade out young plantation trees in disturbed peatlands (McCorry & Renou, 2003).

Juncus effusus can affect biogeochemical cycles, and is capable of either increasing or decreasing methane production from wetlands, depending on conditions (Arslan et al., 2019). This taxon has also been tested for use in restoration, and a literature search found many studies on potential phytoremediation uses for *J. effusus*, (e.g., Syranidou et al., 2017; Peng et al., 2018; Zhang et al., 2019). These impacts could potentially be beneficial to the ecosystems in which this plant occurs in Washington.

Source: Published research, Informal publication

Q19: Impact on Ecosystem Structure

Rating: Low

Confidence: Low

Juncus effusus can occasionally outcompete tree seedlings, though this may only occur where the

conditions for tree establishment are marginal (McCorry & Renou, 2003).

Source: Informal publication, Professional expertise

Q20: Impact on Ecosystem Composition

Rating: Moderate

Confidence: High

Juncus effusus can reduce community composition and diversity through competition for light (Ervin & Wetzel, 2002).

Source: Published research, Professional expertise

Q21: Impact on Particular Native Species

Rating: Unknown

Confidence: Not Rated

No information was found regarding potential effects of *Juncus effusus* ssp. *effusus* on individual native species. Future research on impacts to native *Juncus effusus* subspecies would be valuable.

Source:

Q22: Observed Ability to Invade Undisturbed Ecosystems

Rating: Low

Confidence: Moderate

Juncus effusus relies on disturbance to create suitable substrate for establishment. Field staff have only observed high cover of *Juncus effusus* ssp. *effusus* in highly disturbed ecosystems (T. Ramm-Granberg, pers. comm. 2025). However, this taxon's long-lived seedbank may allow it to take advantage of one time disturbances to establish in mid- and late-successional habitats (Lazenby, 1955; Ervin & Wetzel, 2000; McCorry & Renou, 2003).

Source: Published research, Informal publication

Q23: Observed Ability to Invade Naturally Disturbed Ecosystems

Rating: Yes

Confidence: High



Juncus effusus requires bare substrate for seeds to germinate. This taxon has multiple dispersal methods, maintains a persistent seedbank, and regularly establishes in disturbed areas (Lazenby, 1955; Ervin & Wetzel, 2000; McCorry & Renou, 2003).

Source: Published research, Informal publication

Section 4: Management Difficulty

Q24: General Management Difficulty

Rating: Moderate

Confidence: Low

Since the non-native subspecies of *Juncus effusus* was only recently recognized, there is little information regarding its management in the Pacific Northwest. In Ireland, *Juncus effusus* treatment frequently involves mowing, herbicide, and draining wetlands, with the goal of promoting agriculture (including tree plantations and grazing). Restoration of degraded wetlands may also help control *Juncus effusus*. In particular, restoring the hydrology of wetlands with historically long hydroperiods will help exclude this taxon (McCorry & Renou, 2003).

Source: Informal publication

Q25: Minimum Time Commitment

Rating: High

Confidence: Moderate

In Ireland, herbicide treatments have temporarily removed *Juncus effusus* populations within a year, but don't resolve the ecological conditions that allow this taxon to establish (McCorry & Renou, 2003). Other management techniques (e.g., manipulating wetlands or changing pasture management) can take several years (McCorry & Renou, 2003). Propagule persistence suggests that this taxon likely requires ongoing management due to the long life of the seed bank.

Source: Informal publication

Q26: Impacts of Management on Native Species

Rating: Low

Confidence: Low

Herbicide treatments can be relatively targeted for *Juncus effusus* (McCorry & Renou, 2003), allowing some reduction to impacts on co-occurring native species. Other techniques (e.g., hydrological restorations) could have higher negative impacts on native species in the short term, though restoration efforts are likely beneficial to most native species in the long term.

Source: Informal publication

Q27: Inaccessibility of Invaded Areas

Rating: Low

Confidence: Low

Juncus effusus ssp. *effusus* is fairly widespread in Washington, but many of the observations appear to be in accessible areas (CPNWH, 2023; iNaturalist Contributors, 2023). However, given that seeds can be dispersed by animals as well as wind and water, it is possible that some populations are in areas that are difficult to access.

Source: Herbarium records and other observations

Q28: Sociopolitical Implications of Management

Rating: Insignificant

Confidence: Low

Objections to treatment of this species seem unlikely, beyond potential questions about using herbicide in wetlands.

Source: Professional expertise

Additional Comments

None

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