

BEFORE THE SECRETARY OF THE INTERIOR

**PETITION TO LIST THE TALL WESTERN PENSTEMON (*Penstemon hesperius*) UNDER THE
ENDANGERED SPECIES ACT AND CONCURRENTLY DESIGNATE CRITICAL HABITAT**



Tall western penstemon (*Penstemon hesperius*)

Photo by: Roger T. George (2016)

**CENTER FOR BIOLOGICAL DIVERSITY
NATIVE PLANT SOCIETY OF OREGON**

December 3, 2020

NOTICE OF PETITION

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Pursuant to Section 4(b) of the Endangered Species Act (“ESA”), 16 U.S.C. § 1533(b); Section 553(e) of the Administrative Procedure Act, 5 U.S.C. § 553(e); and 50 C.F.R. § 424.14(a), the Center for Biological Diversity and Native Plant Society of Oregon hereby petition the Secretary of the Interior, through the United States Fish and Wildlife Service (“FWS,” “Service”), to protect the tall western penstemon (*Penstemon hesperius*) as endangered under the ESA.

FWS has jurisdiction over this petition. This petition sets in motion a specific process, placing definite response requirements on the Service. Specifically, the Service must issue an initial finding as to whether the petition “presents substantial scientific or commercial information indicating that the petitioned action may be warranted.” 16 U.S.C. § 1533(b)(3)(A). FWS must make this initial finding “[t]o the maximum extent practicable, within 90 days after receiving the petition.” *Id.*

Petitioners also request that critical habitat be designated for the tall western penstemon concurrently with the species being listed, pursuant to 16 U.S.C. § 1533(a)(3)(A) and 50 C.F.R. § 424.12.

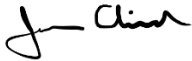
Petitioner the Center for Biological Diversity (“Center”) is a nonprofit, public interest environmental organization dedicated to the protection of imperiled species and the habitat

and climate they need to survive through science, policy, law, and creative media. The Center is supported by more than 1.7 million members and online activists throughout the country. The Center works to secure a future for all species, great and small, hovering on the brink of extinction. Petitioner the Native Plant Society of Oregon is dedicated to the enjoyment, conservation, and study of Oregon's native plants and habitats. Founded in 1961, the Native Plant Society of Oregon has 10 chapters across the state and was instrumental in establishing an Endangered Species Act for the state. The Center and the Native Plant Society of Oregon submit this petition on their own behalf and on behalf of their members and staff with an interest in protecting the tall western penstemon and its habitat.

Submitted this 3rd day of December, 2020.



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Executive Summary

Penstemon hesperius, the tall western penstemon, is one of the rarest vascular plants in the Pacific Northwest. This unusually tall penstemon species exists today in just five known populations, narrowly distributed from southwestern Washington to northwestern Oregon. Its vivid purple-blue flowers, perched high atop its long stems, makes the tall western penstemon a distinctive and beautiful presence in the region's rare ecologically intact wet prairies.

The tall western penstemon's historic wetland habitat was almost completely lost or severely degraded due to extensive agricultural and urban development throughout the Portland-Vancouver metro area. Today, the tall western penstemon remains threatened throughout its range by ongoing urban and suburban development, habitat degradation, competition from non-native species, and the ever-compounding impacts of climate change.

In Washington, the tall western penstemon is listed as an endangered species by the Washington Natural Heritage Program. In Oregon, the species is categorized as threatened with extinction throughout its range by the Oregon Biodiversity Information Center (ORBIC). At the federal level tall western penstemon is designated as a Species of Concern by the U.S. Fish and Wildlife Service Region 1. While these designations recognize that the tall western penstemon is at a high risk of extinction throughout its range, none provide any significant protections to ensure the survival of the species. Only protection as an endangered species under the Endangered Species Act can prevent the extinction of the tall western penstemon.

Introduction

Once thought extinct, the tall western penstemon is unique among in the genus for its tall stems, layering vegetative propagation growth habit, and wetland habitat. The species, with its vibrant tubular purple-blue flowers, is narrowly distributed from southwestern Washington to northwestern Oregon. It was first collected in 1825 near present-day Vancouver by David Douglas who described a "handsome tall plant, 2 ½ to 3 feet high; on rising bluffs, in marshy grounds" (Douglas 1914 p. 124). Dr. Morton Peck designated this tall form of penstemon as a distinct species in 1932 and named it *Penstemon hesperius* (Peck 1932 p. 152-153).

Since its formal recognition as a species, the tall western penstemon's wetland habitat has been significantly degraded or eradicated by extensive agricultural and urban development throughout the Portland-Vancouver metro area. No new observations of the tall western penstemon were recorded for nearly 75 years. It was presumed extinct until 2008 when Rachel Roberts and penstemon expert Ginny Maffitt rediscovered the species on the Tualatin River National Wildlife Refuge in the greater Portland metro area of northwestern Oregon (Christy & Maffitt 2018 p. 8). Since its rediscovery, a few other populations of tall western penstemon have been located in the metro area on both sides of the Columbia River (Christy & Maffitt 2018 p. 10).

The tall western penstemon is designated as endangered in Washington by the Washington Natural Heritage Program. In Oregon, the species is categorized as a List 1 species by ORBIC, which means it is threatened with extinction throughout its entire range, is among the taxa most at risk, and

should be the highest priority for conservation action. However, these designations do not confer any formal legal protection. The tall western penstemon is threatened throughout its range by the direct and indirect effects of ongoing urban development, habitat degradation, climate change, and competition from non-native species. Without the protections of the Endangered Species Act, the tall western penstemon is at high risk of extinction.

Natural History

Description

There are approximately 250 recognized species of *Penstemon*, a genus of perennials forbs and subshrubs to shrubs entirely confined to North America. Penstemons are common throughout the western United States and are prized for their tall, showy clusters of flowers. Penstemons have opposite, entire or toothed leaves and several stalked flowers or flower clusters borne in the axils of the upper leaves or leaflike bracts. Although *Penstemon* flowers come in a wide variety of colors – from white to pink, red, purple, or blue – they are all characterized by a tubular corolla formed by the fusion of five petals. Penstemons have four fertile, pollen-producing anthers, with a fifth anther modified into a sterile tongue-shaped appendage called a staminode (Freeman 2019 p. 82). Penstemons are commonly known as beardtongues because this staminode is hairy in many species.

The tall western penstemon, *Penstemon hesperius*, is a perennial forb with bright purple-blue flowers in the tubular shape characteristic of the genus. However, unlike other *Penstemon* species, *Penstemon hesperius* is adapted to wetland habitats and is unusually tall, with published descriptions indicating stem heights of 2-4 feet (Christy & Maffitt 2018 p. 11). In his identification of tall western penstemon as a distinct species, Peck described it as follows:

A well-marked species, taller than any other herbaceous form hitherto known from Oregon. Its discovery is the more interesting from the fact that Pentstemons [sic] are rare in northwestern Oregon. The habitat is also remarkable (Peck 1932 p. 152-153).

Penstemon hesperius also has an atypical layering vegetative propagation growth habit. It spreads laterally by layering, rooting at the nodes and forming mats up to 6 feet in diameter (Christy & Maffitt 2018 p. 11). The fruit is a many-seeded capsule (Freeman 2019 p. 82).



Penstemon hesperius measuring 55" tall, an unusual height for Penstemons and the feature that gives this species its common name of tall western penstemon.

Photo by: Roger T. George (2016)

Taxonomy

The tall western penstemon is a member of Plantaginaceae (plantain) family and the genus *Penstemon*. As noted above, *Penstemon hesperius* was first recognized as a distinct species in 1932 by Peck due to its unusually tall stems, vegetative layering growth habit, and wetland habitat (Peck 1932 p. 152-153). In the years that followed, Peck's designation continued to be recognized as valid in several evaluations of the genus (Keck 1945, Abrams and Ferris 1951, Peck 1961). However, the species was later synonymized with more montane taxon, first under *Penstemon rydbergii* var. *varians* (Cronquist 1959) and then *Penstemon rydbergii* var. *oreocharis* (Cronquist et al 1984).

For nearly 75 years, there were no field observations of *Penstemon hesperius* and it was presumed extinct. In 2008, the species was rediscovered in Oregon (Christy & Maffitt 2018 p. 8). While the tall *Penstemon* from northwestern Oregon and southwestern Washington share morphological and habitat characteristics with *Penstemon rydbergii* var. *oreocharis*, these taxa differ in height, size, geographical range, elevation, and habitat. Indeed, *Penstemon* experts Dr. Craig Freeman (2019) and Dr. Noel Holmgren (2018) examined the recently rediscovered specimens and independently concluded that *Penstemon hesperius* was distinct from *Penstemon rydbergii* and worthy of resurrection at the specific rank (Christy & Maffitt 2018 p. 16).

Habitat

The tall western penstemon is adapted to Cove silty clay loam soils in seasonally wet lowland meadows and streambanks. It is further restricted to floodplain habitats below 500 feet west of the Cascade Range and in the western Columbia River Gorge. *Penstemon hesperius* occurs in both brushy meadow and open riparian forest (Christy & Maffitt 2018 p. 12). However, the present meadow habitat was historically wet prairie that has been largely modified by 150 years of grazing, hydrological alteration, and agricultural and urban development.

The tall western penstemon has several known plant community associates. In wetter habitats, it is closely associated with native sedges such as slenderbeak sedge (*Carex athrostachya*), greensheath sedge (*Carex feta*), slough sedge (*Carex obnupta*), and fox sedge (*Carex vulpinoidea*). In drier meadow sites, tall western penstemon is found along with encroaching black hawthorn (*Crataegus douglasii*), Oregon ash (*Fraxinus latifolia*), cluster rose (*Rosa pisocarpa*), rose spirea (*Spiraea douglasii*), and common snowberry (*Symphoricarpos albus*), and an herb layer composed primarily of exotic species. In riparian forest habitat it is mostly associated with Oregon ash (*Fraxinus latifolia*) and Oregon white oak (*Quercus garryana*), with a shrub layer of black hawthorn (*Crataegus douglasii*), Pacific ninebark (*Physocarpus capitatus*), rose spiraea (*Spiraea douglasii*), and common snowberry (*Symphoricarpos albus*), and an herb layer including slough sedge (*Carex obnupta*), Mexican hedgenettle (*Stachys mexicana*), and exotic reed canary grass (*Phalaris arundinacea*) (Christy & Maffitt 2018 p. 12-13).

Life History

Penstemon hesperius reproduces underground through vegetative layering propagation (Maffitt 2012 p. 52). It spreads laterally by layering, rooting at the nodes and forming mats up to 6 feet in diameter (Christy & Maffitt 2018 p. 11). As Maffitt observed of tall western penstemon found in Washington County, Oregon:

There is one presumably ancient patch of plants which measures 19' x 27'—unheard of for any member of Subgenus *Penstemon*. In cutting back the 8' tall invasive reed canary grass choking the area, it was hard to find areas between the patches that was lacking in new growth (Maffitt 2012 p. 52).

The shape and color of penstemon flowers are the result of adaptations to attract pollinators. Diverse flower types reflect differences in animal pollinators. For the approximately four-fifths of penstemon species with white, blue, or purple flowers, the principal pollinators are bees and the wasp *Pseudomasaris vespoides* (Kimball & Wilson 2009 p. 20).

Although not necessarily long-lived, *Penstemon hesperius* germinates with relative ease, with an approximately 30% germination rate after wintering outside in a pot or in the ground at an elevation of 350 feet (G. Maffitt, personal communication, August 25, 2020). Monitoring of existing populations is necessary to detect changes in population size and habitat suitability and to elucidate basic life history characteristics, such as longevity of reproductive plants, survivorship of seedlings, and the significance of asexual reproduction.

Current and Historic Distribution

Tall western penstemon is endemic to the northern Willamette Valley in Oregon and the greater Vancouver area in Washington. Existing populations are found only in Washington County in Oregon and in Clark County in Washington (ORBIC 2019). Historically, the species may also have occurred in Clackamas and Multnomah Counties in Oregon and Skamania County in Washington (Fertig 2020). In 1930, Peck collected the species from a “boggy meadow” in Gaston, Oregon and noted that the species “occurred plentifully” (Peck 1932 p. 153.)

Today, there are five known populations of tall western penstemon (Christy & Maffitt 2018 p. 10). There is one extant population in Washington which occurs solely within the Lacamas Prairie Natural Area Preserve (Washington State Department of Natural Resources 2019 p. 22). In a 2018 survey, staff observed 75-100 plants at Lacamas Prairie Natural Area Preserve (Fertig 2020). In Oregon, four small populations have been observed, two located in the Tualatin River National Wildlife Refuge (Bump Unit and Brenner Unit) and two in Metro’s Quamash Prairie Natural Area and Penstemon Prairie Natural Area (Consortium of Pacific Northwest Herbaria).

Existing surveys of tall western penstemon have focused on publicly owned wetlands in the Portland Metro area (Maffitt 2012 p. 53). Additional surveys are needed to evaluate appropriate potential habitat in the Portland-Vancouver metro region, including along the Columbia River west of the mouth of the Gorge.

Conservation Status and Warranted ESA Protection

The ESA is a “comprehensive scheme with the ‘broad purpose’ of protecting endangered and threatened species.” *Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 698 F.3d 1101, 1106 (9th Cir. 2012) (quoting *Babbitt v. Sweet Home*, 515 U.S. 687, 698 (1995)). Congress’ plain intent in enacting the ESA was “to halt and reverse the trend toward species extinction.” *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978). In doing so, the ESA requires that “all Federal departments and agencies *shall* seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of [these] purposes.” 16 U.S.C. § 1531(c)(1) (2012). Endangered and threatened species are “afforded the highest of priorities.” *Tenn. Valley Auth.*, 437 U.S. at 174. Endangered species are species that are “in danger of extinction throughout all or a significant portion of its range,” and threatened species, species that are “likely to become endangered species within the foreseeable future” and are listed for protection pursuant to section 4 of the ESA. 16 U.S.C. § 1532(6), 1532(20), 1533.

The tall western penstemon is recognized as vulnerable or needing protection by international, state and local entities. It has a NatureServe ranking of G1, indicating it is critically imperiled and at high risk of extinction (NatureServe 2020). It likewise has a state ranking of S1, indicating the species is critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences (NatureServe 2020). NatureServe notes that *Penstemon hesperius* is known only from the lower Willamette Valley in Oregon and one site in adjacent Washington and that its habitat is limited and threatened by urban and suburban development (NatureServe 2020).

At the state level, the tall western penstemon is designated as an endangered species in Washington (Washington State Department of Natural Resources 2019 p. 22). In Oregon, the tall

western penstemon is considered a List 1 species by ORBIC. List 1 contains taxa that are threatened with extinction or presumed to be extinct throughout their entire range. These are the taxa most at risk and should be the highest priority for conservation action (ORBIC 2019). These designations recognize the high risk of extinction for this species, but do not confer any formal legal protection. Despite its clear recognition as an endangered species by Washington and Oregon, the tall western penstemon faces ongoing threats and lacks adequate regulatory protections from extinction.

The ESA defines an endangered species as “any species which is in danger of extinction throughout all or a significant portion of its range” and a threatened species as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The tall western penstemon clearly meets the definition of endangered as defined under the act. Although known populations occur on publicly owned lands with varying degrees of protection and management, the tall western penstemon is highly imperiled and needs protection under the ESA to ensure its survival.

The ESA states that a species shall be determined to be endangered or threatened based on any one of five factors (16 U.S.C. § 1533 (a)(1)): 1) the present or threatened destruction, modification, or curtailment of its habitat or range; 2) overutilization for commercial, recreational, scientific, or educational purposes; 3) disease or predation; 4) the inadequacy of existing regulatory mechanisms; and 5) other natural or manmade factors affecting its continued existence. The primary threats to the tall western penstemon are factors one, four, and five. The tall western penstemon is threatened throughout its range by rapid ongoing urban and suburban development, habitat degradation, climate change, and competition from non-native species. The best available science demonstrates that the tall western penstemon is in danger of extinction throughout its range. A prompt decision to move forward with listing the tall western penstemon based on this petition is crucial to ensure this plant does not go extinct.

Threats

The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Habitat Loss

Habitat loss or development of wetland sites is a threat throughout the range of the tall western penstemon. While the historic abundance and distribution of the tall western penstemon is unknown, it was likely greater than at the present time. Historically, wet prairie habitat that could potentially have supported the tall western penstemon comprised approximately 10 percent of the Willamette Valley at an estimated 137,277 ha (339,219 ac) (Christy and Alverson 2011, pp. 100-101). Wet prairie currently occupies approximately 1.5 percent of its historic extent, at 2,024 ha (5,001 ac) (Christy and Alverson 2011, pp. 100-101). Wet prairies are one of Oregon and Washington’s rarest wetland types, having been reduced by nearly 99% since 1850 (The Intertwine Alliance 2012 p. 40). Most wet prairies have been drained, farmed, or overrun by exotic reed canarygrass (*Phalaris arundinacea*) (The Intertwine Alliance 2012 p. 40).

Conversion to agriculture has been the largest driver of loss of prairie habitats in the Willamette Valley (Johannessen et al. 1971, p. 296; Hulse et al. 2002, pp. 78-81). Approximately 50 percent of the modern Willamette Valley is in agricultural production (Morlan et al. 2011, p. 11). Residential, commercial, and infrastructure development have also contributed to the decline in wet prairie (Hulse et al. 2002, p. 78-81).

Many historical wetlands were eliminated altogether through drainage, fill, or submergence. The rate of wetland loss has slowed in recent decades due partly to Oregon and Washington's removal-fill permitting process (The Intertwine Alliance 2012 p. 41). However, ongoing development and land uses continue to threaten and degrade important wetland habitats, causing them to be filled, dredged, or drained. For example, urban growth can degrade wetlands by increasing the amount of pollutants carried through runoff. Likewise, proximity to urban growth can increase the risk of invasive species becoming introduced and established. Diversion of surface water and groundwater withdrawal are other major causes of wetlands degradation in urban areas. These activities – which occur throughout the range of the tall western penstemon – can result in mortality of individuals, loss of habitat, and loss of genetic connectivity between remaining populations.

The tall western penstemon is particularly susceptible to habitat loss and degradation because of urban development because current surveys have documented its presence only in urban natural areas: Lacamas Prairie in Washington and Tualatin River National Wildlife Refuge and Quamash Prairie in Oregon. These natural areas are all surrounded by developed urban or suburban environments. Continued growth in the region is expected to increase development-related stressors on rare plant species like the tall western penstemon.

The rate of urban development in the Portland-Vancouver region has rapidly increased in recent decades, with no sign of slowing down. The population of the city of Vancouver, Washington grew by 10.4% between 2010 and 2019 (U.S. Census Bureau 2019). The population of Portland, Oregon grew by 12.2% (U.S. Census Bureau 2019). Although this growth is unlikely to have direct impacts on habitat, it is likely to have indirect impacts through hydrologic changes, stormwater runoff and pollution, and the introduction of invasive and exotic species.

Additionally, the destruction of wet prairie habitats and rapid urbanization throughout the region has resulted in the increased isolation and fragmentation of the remaining habitat patches, which has likely resulted in smaller population sizes, loss of genetic diversity, reduced gene flow among populations, disruption of metapopulation structure, and increased susceptibility to local population extirpation caused by stochastic events.

Invasive Species

Invasive species play a large role in altering the landscape and fundamental ecosystem processes, decreasing biodiversity, and damaging infrastructure. In an urbanized and fragmented area, invasive species pose a particularly acute threat to remaining habitats. Non-native plants that are introduced unintentionally, as horticultural species, or for agricultural purposes pose a fundamental threat to native and sometimes rare plant populations. Species such as reed canarygrass (*Phalaris arundinacea*) readily out-compete natives in riparian and floodplain areas along the Willamette and Columbia rivers (The Intertwine Alliance 2012 p. 65).

Maffitt describes “8’ tall invasive reed canary grass choking the area” during a search for *Penstemon hesperius* in Washington County, Oregon (Maffitt, G. 2012 p. 52). Reed canarygrass grows in large single species stands and can totally dominate wetlands and riparian areas (Weilhoefer 2019 p. 159-160). As a result, native plants are unable to compete, leading to significant reductions in biodiversity (Tualatin Soil and Water Conservation District 2016).

Meadow foxtail (*Alopecurus pratensis*) is another invasive plant that has been found to spread in large montane meadow complexes and wet areas, to the detriment of native plants. It forms dense swards that allow few other grasses and herbaceous species to thrive with it. (CABI 2020). Competition from non-native plants, such as European blackberry (*Rubus bifrons*) and Canada thistle (*Cirsium arvense*), may also be a threat to tall western penstemon at Lacamas Prairie (Fertig 2020 p. 1).

Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Penstemon species in general are highly prized for horticultural purposes, and collection of wild specimens or seeds for private gardens is a potential issue. Overutilization pushes imperiled species towards extinction, especially in conjunction with other threats. It is unknown the extent to which overutilization impacts the tall western penstemon specifically, but given its limited geographic range, attractive appearance, and low population numbers, any utilization for commercial, recreational, scientific, or educational purposes could pose a serious threat.

Other Natural or Manmade Factors Affecting its Continued Existence

Climate Change

Human activities have increased global average temperatures 0.8-1.2°C above pre-industrial levels with a trend of about 0.2°C per decade due to past and current emissions (Intergovernmental Panel on Climate Change 2018 p. 4). At current emissions rates, global temperatures will increase by 1.5°C between 2030-2052, resulting in further sea level rise, increased incidence of severe weather events, and loss of ecosystems (Intergovernmental Panel on Climate Change 2018 p. 4, 8).

In the Pacific Northwest, temperature increases of 3 to 6°C (5.4 to 10.8°F) are predicted by the end of the 21st century. Winter precipitation is predicted to increase, but higher summer temperatures are expected to cause increased evapotranspiration, resulting in drier soil during the growing season (Bachelet et al. 2011, p. 414). Because the tall western penstemon is a hydrologically sensitive species, reduced soil moisture could stress individuals and populations.

Climate change is expected to impact freshwater wetlands in all geographic regions of the world. A changed climate will alter hydrology and impair functionality through increased temperatures, drought or flooding events, and CO₂ increases. These changes will impact the ability of wetlands to provide crucial ecosystem services such as carbon storage, biodiversity support, wildlife habitat and water quality. The negative impacts of climate change will exacerbate the impacts of other threats, including invasive species and increased development. This is likely to increase the risk of endemic species extinctions (Moomaw 2018 p. 188).

Disease or Predation

Little information exists regarding the prevalence of plant disease or predation for the tall western penstemon which presents an additional unknown for the long-term survival of the species. Diseases can hasten a species decline when populations are small or genetically homogeneous (Willi et al. 2006 p. 450).

The Inadequacy of Existing Regulatory Mechanisms

The existing regulatory mechanisms are wholly inadequate to protect the tall western penstemon from extinction. Although it is recognized by state and international entities as a critically imperiled species, the tall western penstemon has no formal legal protection to ensure its survival. As described above, it has a NatureServe ranking of G1 – Critically Imperiled, which is defined as a very high risk of extinction or collapse due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors. (NatureServe 2020). The species has a state ranking of S1 – Critically Imperiled, which is defined as a very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors. (NatureServe 2020).

In Washington, the tall western penstemon is designated as endangered by the Washington Natural Heritage Program (Washington State Department of Natural Resources 2019 p. 22). In Oregon, ORBIC has designated tall western penstemon as a List 1 species, which means it is threatened with extinction throughout its entire range (ORBIC 2019). Again, while these designations recognize the high risk of extinction for this species, they provide no practical protection for the species.

Although the tall western penstemon itself has no formal legal protections, its five known populations occur exclusively on publicly owned lands managed as natural areas. The largest extant population of tall western penstemon occurs in Washington and is found within the Lacamas Prairie Natural Area Preserve, which is managed as a Natural Area Preserve and Natural Resource Conservation Area by the Washington State Department of Natural Resources (Washington State Department of Natural Resources 2019 p. 22). Natural Area Preserves protect priority species and high-quality ecosystems, and Natural Resources Conservation Areas often contain priority species or ecosystems, but also offer access to low-impact public uses. Both types of areas also provide opportunities for education and research. (Washington State Department of Natural Resources).

In Oregon, four small populations have been observed, two located on Tualatin River National Wildlife Refuge lands (Bump Unit and Brenner Unit) and two in Metro Natural Areas (Quamash Prairie Natural Area and Penstemon Prairie Natural Area) (Consortium of Pacific Northwest Herbaria, 2020). The Tualatin River National Wildlife Refuge is managed by the U.S. Fish and Wildlife Service according to the Tualatin River National Wildlife Refuge Comprehensive Conservation Plan (CCP). Although tall western penstemon is not listed as a refuge species, it benefits from wetland restoration activities under the CCP. The Quamash Prairie and Penstemon Prairie Natural Areas are managed by Metro, a regional governmental entity in the Portland metropolitan area.

While the tall western penstemon is offered some limited protection by merit of its existence on publicly-owned lands and natural areas, it remains vulnerable to the pressures of urban development, habitat loss and degradation, invasive species, and the ever-growing impacts of climate change. Further, existing surveys of tall western penstemon have been limited to publicly owned lands.

Additional comprehensive in-the-field surveys employing existing data sources such as soil maps and GIS modelling are clearly needed to evaluate appropriate potential habitat in the Portland-Vancouver metro region, including along the Columbia River downstream of the Columbia River Gorge. These threats are not adequately addressed by any of the tall western penstemon's current designations. The only adequate regulatory mechanism available to ensure the continued survival of the tall western penstemon is protection as an endangered species under the ESA.

Request for Critical Habitat Designation

We urge the Service to designate critical habitat for the tall western penstemon concurrent with its listing. Critical habitat as defined by Section 3 of the ESA is: (i) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the provisions of section 1533 of this title, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) the specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species (16 U.S.C. § 1532(5)).

Congress recognized that the protection of habitat is essential to the recovery and/or survival of listed species, stating that: "classifying a species as endangered or threatened is only the first step in ensuring its survival. Of equal or more importance is the determination of the habitat necessary for that species' continued existence... If the protection of endangered and threatened species depends in large measure on the preservation of the species' habitat, then the ultimate effectiveness of the Endangered Species Act will depend on the designation of critical habitat." H. Rep. No. 94-887 at 3 (1976).

Critical habitat is an effective and important component of the ESA, without which the tall western penstemon's chance for survival significantly diminishes. Petitioners therefore request that the Service propose critical habitat for the plant concurrently with its listing.

Conclusion

In this petition, we have carefully assessed the best scientific and commercial information available regarding the historic, present, and future threats faced by the tall western penstemon and have determined that the species is in danger of extinction throughout its range. The ESA requires that the Service promptly issue an initial finding as to whether this petition "presents substantial scientific or commercial information indicating that the petitioned action may be warranted." 16 U.S.C. § 1533(b)(3)(A).

There is no question that protecting the tall western penstemon is warranted under the act as it is imperiled by 1) the present or threatened destruction, modification, or curtailment of its habitat or range; 4) the inadequacy of existing regulatory mechanisms; and 5) other natural or manmade factors affecting its continued existence – including the loss of habitat, aggressive urbanization, and climate change. There are no existing regulatory mechanisms which are adequate to protect the tall western penstemon. The Service must act promptly to protect this species and to designate critical habitat in order to prevent its extinction and protect its disappearing habitat. Listing the tall western penstemon

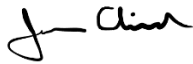
as endangered is the only way to ensure the continued existence of this rare and beautiful Pacific Northwest species.

Please contact Quinn Read by phone at 206-979-3074 or by email at qread@biologicaldiversity.org if you have any questions or need any clarification on the above information.

Sincerely,



Quinn Read
Oregon Policy Director
Center for Biological Diversity



Jason Clinch
Rare and Endangered Plants Committee Chair
Native Plant Society of Oregon

References

- Abrams, L. & R.S. Ferris. 1951. Illustrated flora of the Pacific states. Vol. 3. Stanford University Press, Stanford, California. 866 pp.
- Bachelet, D., B.R. Johnson, S.D. Bridgham, P.V. Dunn, H.E. Anderson, B.M. Rogers. 2011. Climate Change Impacts on Western Pacific Northwest Prairies and Savannahs. *Northwest Science*. 85(2):411-429
- CABI. 2020. Invasive Species Compendium. Datasheet report for *Alopecurus pratensis* (meadow foxtail). Available from: <https://www.cabi.org/isc/datasheet/4361>.
- Christy, J.A. and V. Maffitt. 2018. Documentation of *Penstemon hesperius* Peck. *Bulletin of the American Penstemon Society* **77**:8-18.
- Christy, J.A. 2017. Final Project Report to American Penstemon Society Special Projects Grants Program. Identity of *Penstemon hesperius*. *Newsletter of the American Penstemon Society* **11**:14-16.
- Christy, J.A., and E.R. Alverson. 2011. Historical Vegetation of the Willamette Valley, Oregon, circa 1850. *Northwest Science* **85(2)**:93-107.
- Consortium of Pacific Northwest Herbaria. 2020. Specimen Database. Available from: <https://www.pnwherbaria.org/data/search.php> (accessed August 13, 2020).
- Cronquist, A. 1959. *Penstemon*. Pp. 365-411 in: C.L. Hitchcock, A. Cronquist, M. Ownbey & J.W. Thompson. *Vascular plants of the Pacific Northwest*. Vol. 4. University of Washington Press, Seattle. 510 pp.
- Cronquist, A., A.H. Holmgren, N.H. Holmgren, J.L. Reveal, and P.K. Holmgren. 1984. *Intermountain Flora, Vascular Plants of the Intermountain West, U.S.A.* Volume 4 subclass Asteridae (except Asteraceae). New York Botanical Garden, Bronx, NY. 573 pp.
- Douglas, D. 1914. *Journal kept by David Douglas during his travels in North America, 1823-1827*. Reprint of edition published by Royal Horticultural Society. Antiquarian Press, New York. 364 pp.
- Fertig, W. 2020. *Penstemon Hesperius* Species Summary. WA Natural Heritage Program. (Unpublished document).
- Freeman, C. 2019. *Penstemon*. pp. 82-255. In: *Flora of North America* Editorial Committee. *Flora of North America North of Mexico*. Volume 17 Magnoliophyta: Tetrachondraceae to Orobanchaceae. Oxford University Press, New York. 737 pp. Available from <http://beta.floranorthamerica.org/Penstemon>.
- Hitchcock, C.L. and A. Cronquist. 1973. *Flora of the Pacific Northwest, an illustrated manual*. University of Washington Press, Seattle, WA. 730 pp.
- Hitchcock, C.L. and A. Cronquist. 2018. *Flora of the Pacific Northwest, an illustrated manual, second edition*. Edited by D.E. Giblin, B.S. Legler, P.F. Zika, and R.G. Olmstead. University of Washington Press and Burke Museum of Natural History and Culture, Seattle, WA. 882 pp.
- Hitchcock, C.L., A. Cronquist, and M. Ownbey. 1959. *Vascular Plants of the Pacific Northwest Part 4 Ericaceae through Campanulaceae*. University of Washington Press, Seattle, WA. 510 pp.
- Holmgren, N.H. 1984. *Penstemon*. *Intermountain Flora* **4**:370- 454.
- Holmgren, N.H. 2017. *Penstemon*—update to 1984 treatment in *Intermountain Flora*, volume 4. *Intermountain Flora* **7**: 161-197.
- Holmgren, N.H. 2018. *Penstemon*. In revised *Flora of the Pacific Northwest*. University of Washington, Seattle. (In preparation).
- Hulse, D, S. Gregory, and J. Baker, eds. 2002. *Willamette River Basin Planning Atlas: Trajectories of Environmental and Ecological Change*. Pacific Northwest Ecosystem Research Consortium.

- Oregon State University Press. Corvallis, Oregon. 178 pp. Available from http://www.fsl.orst.edu/pnwerc/wrb/Atlas_web_compressed/PDFtoc.html.
- Intergovernmental Panel on Climate Change. 2018. Global Warming of 1.5°C. Page 34. Summary for Policymakers, Special Report. Incheon, Republic of Korea. Available from: <http://www.ipcc.ch/report/sr15/>.
- The Intertwine Alliance. 2012. Biodiversity Guide for the Greater Portland-Vancouver Region. A. Sihler, editor. The Intertwine Alliance, Portland, OR. Available from: <https://www.theintertwine.org/alliance/resources-and-reports>
- Johannessen, C.L., W.A. Davenport, A. Millet, and S. McWilliams. 1971. The Vegetation of the Willamette Valley. *Annals of the Association of American Geographers* **61**:286-302.
- Keck, D.D. 1945. Studies in *Penstemon* VIII. A cytotaxonomic account of the section *Spermunculus*. *American Midland Naturalist* **33**:128-206.
- Kimball S. and P. Wilson. 2009. The Insects That Visit Penstemon Flowers. *Bulletin of the American Penstemon Society* **68**:20-27.
- Maffitt, G. 2012. The Tualatin Basin Penstemon Revisited. *Bulletin of the American Penstemon Society* **71**:48-53.
- Maffitt, G. 2017. The Mystery of *Penstemon hesperius*. *Newsletter of the American Penstemon Society* **11**:12-13.
- Moomaw, W.R., Chmura, G.L., Davies, G.T. et al. 2018. Wetlands in a Changing Climate: Science, Policy and Management. *Wetlands* **38**:183–205.
- Morlan J.C., E.F. Block, J.L. Miner, and W.N. Kirchner. 2011. Oregon Study Finds Continued Loss of Freshwater Wetlands. *National Wetlands Newsletter* **33**(3):11-15.
- NatureServe. 2020. *Penstemon hesperius*. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, VA. U.S.A. Available from: https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.961340/Penstemon_hesperius (accessed August 14, 2020).
- Oregon Biodiversity Information Center. 2019. Rare, Threatened and Endangered Vascular Plant Species of Oregon. An excerpt of the Rare, Threatened, and Endangered Species of Oregon publication. Portland State University. Available from: <https://inr.oregonstate.edu/sites/inr.oregonstate.edu/files/2019-rte-vascs.pdf>
- Peck, M.E. 1932. More new plants from Oregon. *Torreyana* **32**:147-153.
- Peck, M.E. 1961. A manual of the higher plants of Oregon. 2nd edition. Binford & Mort, Portland, Oregon. 936 pp.
- Tualatin Soil and Water Conservation District. 2016. Reed canarygrass. Available from: <https://tualatinswcd.org/species/reed-canarygrass/>.
- United States Census Bureau. 2019. Vancouver, Washington QuickFacts. Available from: <https://www.census.gov/quickfacts/vancouvercitywashington> (Accessed August 13, 2020).
- United States Census Bureau. 2019. Portland, Oregon QuickFacts. Available from: <https://www.census.gov/quickfacts/portlandcityoregon> (Accessed August 13, 2020).
- United States Department of Agriculture Natural Resources Conservation Service. 2003. Penstemon, Plant Guide. Available from: https://plants.usda.gov/factsheet/pdf/fs_penst.pdf
- United States Fish and Wildlife Service. 2013. Tualatin River National Wildlife Refuge Comprehensive Conservation Plan. Available from: https://www.fws.gov/refuge/Tualatin_River/what_we_do/planning.html

- Washington State Department of Natural Resources. 2019. 2019 Washington Vascular Plant Species of Special Concern. Washington Natural Heritage Program Report Number: 2019-04. Page 22.
- Washington State Department of Natural Resources. Natural Areas Brochure. Available from: https://www.dnr.wa.gov/publications/amp_na_brochure.pdf?xv0xge.
- Weilhoefer, C.L., Williams, D., Nguyen, I. et al. 2017. The effects of reed canary grass (*Phalaris arundinacea* L.) on wetland habitat and arthropod community composition in an urban freshwater wetland. *Wetlands Ecology and Management* **25**:159–175.
- Willi Y, Van Buskirk J, Hoffmann AA. 2006. Limits to the Adaptive Potential of Small Populations. *Annual Review of Ecology, Evolution, and Systematics* **37**:433–458.