

Table 11. Challenges for Species of Greatest Conservation Need plants.

Priority challenges relevant to Species of Greatest Conservation Need plants.

Common Name	Challenges	Category
Alkali Wildrye	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Barneby's Clover	Drought leads to low seed production, decreased pollination, and dieback and cover decreases with reduced precipitation (Handley and Tronstad 2021). Encroachment of nonnative plant species and associated herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Blowout Beardtongue	Vegetation encroachment and dune stabilization, which can reduce habitat suitability if wind disturbance is not sufficient. Excessive herbivory. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Cedar Rim (Desert) Thistle	Herbicide treatments and release of biocontrol insects intended to control related nonnative plant species. Mechanical ground disturbance and associated crushing, and road development. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Specimen review needed
Colorado Butterfly Plant	Vegetation encroachment due to removal of natural disturbances. Habitat disturbance, including changes to hydrology, mechanical ground disturbance, and uprooting, and herbicide treatments in hay fields that support this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Colorado Tansyaster	Mechanical ground disturbance and associated crushing, trampling, introduction of nonnative plant species, and associated herbicide treatments. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented?
Comb-hair Draba	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Reconcile Strank with RM treatment (FNA treatment is pending)
Desert Glandular Phacelia	Mechanical ground disturbance and associated erosion and crushing, increased nonnative plant species, and associated herbicide treatments. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	
Desert Yellowhead	Mechanical ground disturbance and associated erosion and crushing, trampling, introduction of nonnative plant species, and associated herbicide treatments. Drought can lead to poor seed set. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented

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Dorn's (Tunp Range) Twinpod	Mechanical ground disturbance and associated erosion and crushing, trampling, road maintenance, introduction of nonnative species, and associated herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Dropleaf Buckwheat	Mechanical ground disturbance and associated crushing, trampling, introduction of nonnative plant species, and associated herbicide treatments. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented?
Dubois (Plains) Milkvetch	Mechanical ground disturbance and associated crushing, herbicide treatment, and road expansion. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Genetics status of Bighorn Basin in question
Farrar Moonwort	Increased canopy cover and shading in response to changing fire regimes. Mechanical ground disturbance and associated crushing, herbicide treatment, and road expansion/maintenance. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Foothill Milkvetch	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Fremont Bladderpod	Mechanical ground disturbance and associated crushing, trampling, road development and maintenance, introduction of nonnative plant species, and associated herbicide treatment (Heidel and Handley 2004). Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Gibbens' Beardtongue	Trampling, herbivory, mechanical ground disturbance, road construction and use, habitat disturbance, invasion by nonnative plant species, and associated herbicide treatment. Prolonged droughts can lead to erosion in the species' habitat, population declines, and decreased seed germination. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Grassyslope Sedge	Trampling, herbivory, mechanical ground disturbance, road construction and use, habitat disturbance, invasion by nonnative plant species, and associated herbicide treatment. Prolonged droughts can lead to erosion in the species' habitat, population declines, and decreased seed germination. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Grassyslope Sedge	Drought leads to poor flowering and health. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Is this dup. entry in error? Does another species belong here?
Green River (Low) Greenthread	Mechanical ground disturbance, soil compaction, trampling, mortality from road widening, invasion by nonnative plant species, and associated herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Survey results pending

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Hairy Greenthread	Mechanical ground disturbance, invasion by nonnative plant species, and associated herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Hyattville (Starveling) Milkvetch	Mechanical ground disturbance and associated crushing and erosion, and road maintenance. Utah juniper is encroaching and degrading habitat. Population size declines with drought. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Kirkpatrick's (Spiked) Ipomopsis	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Laramie (Alpine) Clover	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Laramie Columbine	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Large-fruited Bladderpod	Mechanical ground disturbance and associated crushing, and road maintenance. Drought impacts include decreased flowering, seed production, and recruitment and potential extirpation. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Long-awned Alkali Wildrye	Mechanical ground disturbance and crushing, and trampling. Factors that affect the water table of this species' dune habitat. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Meadow Milkvetch	Factors that impact the water table. Mechanical ground disturbance and associated crushing. Impacted by invasion of salt-tolerant nonnative plant species and associated herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Mystery (Biennial) Wormwood	Trampling and grazing by feral horses. Loss, degradation, or fragmentation of habitat associated with hydrological changes, road development, changes to the plant community, and soil pollution. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented; may warrant taxonomic review
Owl Creek Miner's Candle	Mechanical ground disturbance and associated crushing, and road development. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented

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Parasol Bladderpod	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Payson's Draba	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented?
Payson's Milkvetch	Vulnerable to invasion of nonnative plant species and associated herbicide treatment. Intolerant of increasing competition from grasses and sagebrush and changes in fire regimes. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Fire specialist; well-documented?
Prairie Dodder	Dodders are mistakenly considered agricultural weeds as a group and may be vulnerable to eradication efforts. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Precocious Milkvetch	Mechanical ground disturbance and associated crushing, road maintenance, and habitat loss, degradation, and fragmentation. Vulnerable to erosion. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Prostrate (Low) Bladderpod	Mechanical ground disturbance and associated crushing, road construction, trampling, introduction of nonnative species, and associated herbicide treatment. Drought leads to fruit abortion and reduced vigor. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well documented; check WY contribution rank
Ross' Bentgrass	Human trampling of vegetation may allow the native <i>Agrostis scabra</i> to outcompete this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Sessileflower (Indian) Springparsley	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Check taxonomy w/ RM
Shoshonea	Mechanical ground disturbance and associated crushing. Forest succession and changes to fire regimes from fire management and subsequent increases in bark beetle activity. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Slender Spiderflower	Invasion, plant community changes, and the replacement of this species with a more common congener after mechanical ground disturbance (Heidel 2015). Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Small (Fremont County) Rockcress	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented

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Smallheaded Townsend Daisy	Mechanical ground disturbance, human trampling, and road maintenance leading to soil compaction and habitat degradation or loss. Vulnerable to encroachment by native shrubs due to changes in fire regimes. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Smooth Summer Milkvetch	Mechanical ground disturbance and crushing and road maintenance activities such as herbicide treatment. Mortality increases in drought years. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Snow Indian Paintbrush	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Stemless Beardtongue	Mechanical ground disturbance and associated crushing, invasion of nonnative plant species, and road maintenance activities such as herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Tapertip Desertparsley	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented
Teton Wirelettuce	Vulnerable to the spread of nonnative plant species and associated herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Thickleaf Bladderpod	Vulnerable to increasing invasion of nonnative plant species and vulnerable to associated herbicide treatment. Mechanical ground disturbance and crushing. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Thickleaf Pepperweed	Mechanical ground disturbance and associated crushing, invasion of nonnative plant species, and road maintenance activities such as herbicide treatment. Factors that affect the water table can eliminate portions of this species' alkaline habitat. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Trelease's Milkvetch	Mechanical ground disturbance and associated crushing, invasion of nonnative plant species, and road maintenance activities such as herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Ute Ladies' Tresses	Suppression of natural disturbances, competition with nonnative plant species, and herbicide and pesticide drift. Factors that affect the species' necessary hydrological regime. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented

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Whitebark Pine	Impacted by blister rust and mountain pine beetle outbreaks. Young trees may succumb to fire but medium thickness bark offers some fire resistance. Vulnerable to succession from changes in fire regime. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Winward's Goldenweed	Insufficient knowledge of how challenges affect this species. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented?
Woodrush Sedge	Excessive herbivory. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Not well-documented; check WY contribution rank
Woolly (Common) Twinpod	Mechanical ground disturbance, invasion by nonnative plant species, and associated herbicide treatment. Human trampling, introduction of nonnative plant species, and associated herbicide treatment. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented
Wyoming Tansymustard	Drought leads to population declines. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented?
Yellowstone Sand Verbena	Human trampling, mechanical ground disturbance, road construction, and erosion. Insufficient funding and resources available for conservation of this species (e.g., habitat improvement, research, monitoring).	Well-documented

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