



CALIFORNIA
NATIVE PLANT SOCIETY

August 25, 2016

Planning Team Leader
Forest Plan Revision
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Sent via: r5planrevisio@fs.fed.us

**Re: Supplemental Comments on the Draft Environmental Impact Statement for
Revision of the Inyo National Forest Land Management Plan from the California
Native Plant Society**

To the Forest Plan Revision Team:

The California Native Plant Society (CNPS) provide these comments on the Draft Revision of the Inyo National Forest Land Management Plan. The comments we submit herein are in addition to the comments that CNPS and several other organizations have submitted on the Draft Plans and DEIS (see comment letter submitted on behalf of environmental organizations by Susan Britting of Sierra Forest Legacy).

The following comments are specific to Mono County areas and species within the Inyo National Forest, based on the extensive field studies conducted by Ann Howald.

A. SPECIAL HABITATS

Management of Special Habitats will be most effective if these habitats are identified by type, and additional, specific monitoring, management, and restoration guidelines are provided in the Plan. One essential management objective for Special Habitats must be to include their locations in the Geographic Information System for the Inyo National Forest. Examples of Special Habitats of the Inyo NF in Mono County that would benefit from this approach include the following:

Caliche-covered Clay Soil Mounds

Habitat Description

To date, these clay mounds have been found only in the far eastern edge of the Mono Basin (Cedar Hill 7.5' quad, T3N R29E S10). Most of this habitat is located on land administered by the Inyo NF. Initial interpretation by Dr. Greg Stock, Yosemite National Park Geologist, is that these features were formed by hot springs beneath Pleistocene Lake Russell, the larger precursor of present day Mono Lake. The clay mounds are located within sparse Juniper Woodland, and support a unique assemblage of plant species.

Field surveys in 2015 and 2016, both dry years, have identified the following CNPS-designated special status plants, including some designated as SCC by the Inyo NF, that are locally restricted to these clay mounds: *Astragalus kentrophyta* var. *ungulatus* (CNPS 2B.2, State Rank S1), *Eriogonum alexanderae* (CNPS 1B.1, State Rank S1), *Mentzelia torreyi* (CNPS 2B.2, State Rank S2), *Physaria ludoviciana* (CNPS 2B.2, State Rank S1), and *Thelypodium milleflorum* (CNPS 2B.2, State Rank S3?). In August 2016 a taxon new to California, *Oxytropis oreophila* var. *juniperina*, was found on the clay mounds (*Howald 3951*), on Inyo NF-administered lands. This taxon was identified in the field by Arnold Tiehm, Herbarium Curator, University of Nevada, Reno, an authority on high desert plants. The protection status of this taxon has not yet been evaluated by CNPS.

Threats to the clay mound habitat include: off-road vehicles, grazing by wild horses, climate change effects, invasive plants (*Halogeton glomeratus*), and juniper thinning.

Monitoring, Management, and Restoration

Habitat-specific objectives and standards for monitoring, management, and restoration of the clay mounds must be included in the Plan. Monitoring of the clay mounds should include an annual visit to assess the condition of the special status plant populations, including population size, status of individual plants, and threat conditions. The clay mound area is small, and can be evaluated in a single visit of one day.

Management of the clay mounds should include actions to reduce existing threats, such as installing barriers to prevent off-road vehicle access, and controlling invasive plants.

Restoration actions at the clay mounds should be initiated if and when such actions are likely to be effective in remediating disturbances that have an adverse effect on the resources of concern. Specific restoration actions should be site- and disturbance-specific.

Skilled volunteers can be used to assist with monitoring and restoration actions. These are available through collaboration with such entities as: Partners for Plants, CNPS Rare Plant Treasure Hunt, local botanists, etc.

Mono Basin Pumice Flats

Habitat Description

The Mono Basin contains an array of pumice flats (locally, and on some maps, called “sand flats”), mainly to the south and southeast of Mono Lake, and in the vicinity of the Mono Craters. There are some notable outliers, such as Smokey Bear Flat and Crater Flat. Most of these pumice flats are located on Inyo NF land.

Pumice flats occur on level to slightly sloping terrain, and are characterized by open expanses of pumice gravels, which typically are moist a short distance beneath the surface. Surrounding vegetation consists mainly of Jeffrey Pine forest with an understory of sagebrush scrub. The

borders of the flats often support a ring of Lodgepole pines. The pumice flats of the Mono Basin and nearby areas have not been systematically studied. However, many botanists have collected on these flats, and extensive collection records are available on the Consortium of California Herbaria (CCH).

Noteworthy species of the pumice flats are two Plant Species of Conservation Concern, *Lupinus duranii* (CNPS 1B.2, State Rank 2) and *Astragalus monoensis* (CNPS 1B.2, State Rank S2, CA State-listed Rare), both endemic to Mono County. The CCH includes 113 collection records (including duplicates) for *Lupinus duranii*, all from Mono County. There are 66 collection records (including duplicates) in CCH for *Astragalus monoensis*. All but one of these are from Mono County. The collection from Old Dad Mountain, San Bernardino County (*M. Jones s.n.*) is almost certainly misidentified or was actually collected elsewhere. These two species are likely the only plant taxa that are endemic to Mono County, giving added significance to the pumice flat habitat type.

Threats to the pumice flats include: off-road vehicles, invasive plants, and reductions in soil moisture resulting from climate change.

Monitoring, Management, and Restoration

Habitat-specific objectives and standards for monitoring, management, and restoration of pumice flats must be included in the Plan.

Monitoring of the pumice flats should include period visits to selected sites to assess the condition of the special status plant populations, including population size, status of individual plants, and threat conditions. Pumice flats are distributed over a large area, and some individual pumice flats are many acres in size. One monitoring strategy to test would be to monitor a selection of pumice flats annually, with others nearby on a rotating three-year schedule. If significant disturbances or changes are found at flats monitored annually, then those nearby could be added to the monitoring schedule for that year.

Management of the pumice flats should include actions to reduce existing threats, such as installing barriers to prevent off-road vehicle access (already in place in some areas), and controlling invasive plants.

Restoration actions at the pumice flats should be initiated if and when such actions are likely to be effective in remediating disturbances that have an adverse effect on the resources of concern. Specific restoration actions should be site- and disturbance-specific.

Skilled volunteers can be used to assist with monitoring and restoration actions. These are available through collaboration with such entities as: Partners for Plants, CNPS Rare Plant Treasure Hunt, local botanists, etc.

Additional habitat types that should be designated Special Habitats of the Mono County areas of the Inyo NF include:

Unglaciaded Alpine Meadows and Barrens

These above-timberline areas of meadows and rock barrens likely served as isolated refuges for many plants and animals during the glacial periods. They support a diverse array of alpine plant species that are expected to be especially susceptible to the effects of climate change. These include some SCC and other special status plant species. The Dana Plateau is an example of this habitat type. Isolation and access difficulties provide natural protection to these habitats. However, their biological significance should be formally recognized by designating them as Special Habitats.

Stabilized Dunes North of Mono Lake

The ancient shorelines north of Mono Lake are occupied by large expanses of stabilized dunes. Some of these are on lands managed by the Inyo NF. These dunes are rich in small rodents, in both numbers and species, and support an array of SCC and other special status plants, including: *Astragalus pseudodanthus* (CNPS 1B.2, State Rank S2), *Chaetadelpa wheeleri* (CNPS 2B.2, State Rank 2), *Ladeania lanceolata* (CNPS 2B.3, State Rank S2), and *Tetradymia tetrameres* (CNPS 2B.2, State Rank S2). Threats to these dunes include: off-road vehicles, invasive plants, and development. Their biological values qualify them as a type of Special Habitat.

B. INVASIVE PLANTS

Invasive non-native species have been identified as one of the most significant causes of declines in biological diversity worldwide. In recent years, an increasing number of invasive plant infestations have been found in Mono County, including on Inyo NF lands. Problem weeds found on or adjacent to Inyo NF lands at the present time include: *Acroptylon repens*, *Bromus tectorum*, *Centaurea maculosa*, *Cirsium vulgare*, *Halogeton glomeratus*, *Lepidium latifolium*, *Melilotus albus*, *Salsola* spp., *Taraxacum officinale*, *Verbascum thapsus*, and possibly others.

The draft Inyo NF Plan identifies a plan objective of “Within 10 years of approval take action to eliminate non-native species from 300 acres.” (INF Plan, p. 85).

Instead, what is needed is to develop and implement a strategy for identifying and controlling non-native invasive plants over the long term. This strategy should include the following elements:

1. Establish criteria to select the non-native invasive plant species present on the Inyo, or likely to be found there, that pose a significant threat to natural resources.
2. Using the criteria, compile a list of weeds to target for control or eradication. This “target” list should be flexible to accommodate new infestations.

3. Compile existing data from online and other sources, and conduct field surveys to determine the distribution and abundance of target weeds.
4. Map (using GIS) the distribution of target weed infestations.
5. Develop strategies to control target weeds in areas where control is practical and there is clear environmental benefit, e.g. areas of high species diversity such as meadows, fragile habitats such as alpine rock barrens, important rare plant habitat areas, and Special Habitats.
6. Implement control strategies.
7. Follow up with monitoring to determine the effectiveness of the control strategies, and modify as needed to achieve best results over the long term.
8. Use volunteers (e.g., Friends of the Inyo, Sierra Club, CNPS etc.) to assist with mapping, control efforts, and follow up monitoring.

C. SPECIES OF CONSERVATION CONCERN - PLANTS

We believe the following species meet the criteria for Species of Conservation Concern in the Inyo NF, and must be added to the Inyo National Forest list of Plant Species of Conservation Concern:

Astragalus kentrophyta var. *ungulatus* (spiny milk-vetch)

In California, this variety is known from a single population, on caliche-covered clay mounds in the eastern Mono Basin. This habitat should qualify as a Special Habitat for management under the Inyo NF Management Plan. In 2015, individuals of *Astragalus kentrophyta* var. *ungulatus* were documented from BLM land immediately adjacent to Inyo NF-administered land. In 2016, a wetter year, additional individuals of this variety were found in this area, even closer to Inyo NF-administered land, and possible within it. During a 2016 field visit by Arnold Tiehm, who first collected this variety in California in 1998 (*Tiehm 12580* CAS962344), he stated that he remembered collecting the plants from an area on Inyo NF-administered land. In 2016 the total population size was less than 100 individuals.

CNPS: 2B.2

Nature Serve: S1

CNDDDB Element Occurrences: 1, a portion of which is possibly located on Inyo NF-administered land

Threats: Off-road vehicle tracks were observed in 2016 within 5 meters of this occurrence. A wild horse herd frequents this area on a regular basis, trampling and browsing on native vegetation, and leaving large quantities of droppings. In 2015, an infestation of approximately 5000 individuals of the noxious weed *Halogeton glomeratus* was found on the clay mounds in the near vicinity of this population. All observed individuals were hand-pulled before seed production, however, a soil seed bank likely remains. Climate change, and thinning of pinyon-juniper woodlands are additional threats. Very small population size is another threat.

Draba praealta (tall draba)

CNPS: 2B.3

Nature Serve: S3

CNDDDB Element Occurrences: 7 total, 5 of which occur on the Inyo; all EOs are historic (i.e., not confirmed within the last 20 years). Three of these are found on the Dana Plateau, an unglaciated alpine landform with exceptionally diverse alpine vegetation that should qualify as a Special Habitat for management under the Inyo NF Management Plan.

Threats: climate change, which may have comparatively greater impacts on alpine habitats such as those occupied by *Draba praealta*.

Salix nivalis (snow willow)

Salix nivalis is known in California mainly from the Inyo NF, so the Inyo National Forest's management actions will have a significant effect on the future of this species.

CNPS: 2B.3

Nature Serve: S2

CNDDDB Element Occurrences: 9 total, 7 of which occur on the Inyo; 4 EOs on the Inyo are historic.

Threats: Climate change impacts to alpine areas, and trampling by climbers and hikers.

Tetradymia tetrameres (dune horsebrush)

This species has a limited distribution within California. The Consortium of California Herbaria lists 14 collection records for this species, all from Mono County, and most from the dunes along the ancient Mono Lake shorelines on the north side of the lake. Some of these dunes are located within Inyo NF. These dunes should qualify as a Special Habitat for management under the Inyo NF Management Plan.

CNPS: 2B.2

Nature Serve: S2

CNDDDB Element Occurrences: 7 total, of which at least one is on Inyo NF land. All 7 EOs are historic.

Threats: Off-road vehicles, non-native invasive plants, and climate change. New infestations of *Salsoia* sp. were observed in 2015 on dunes with this species, on Inyo NF land.

Thelypodium milleflorum (many-flowered thelypodium)

In 2016 this species was found and documented with a voucher (*Howald 3744*) on Inyo NF-administered land in the eastern Mono Basin, on caliche-covered clay mounds that support at least five SCC and other special status plants. Two colonies were found, one consisting of 4 individuals, and the other of 11 individuals.

CNPS: 2B.2

Nature Serve: S3?

CNDDDB Element Occurrences: 30 total, of which 3 occur in Mono County. One of these is likely based on a mis-identification. None of the EOs include the locations found in 2016, which are on Inyo NF-administered land.

Threats: Off-road vehicle tracks were observed in 2016 near this occurrence. A wild horse herd frequents this area on a regular basis. Browsed individuals of this species were observed in 2016. In 2015, an infestation of approximately 5000 individuals of the noxious weed *Halogeton glomeratus* was found on the clay mounds in the near vicinity of this population. All observed individuals were hand-pulled before seed production, however, a soil seed bank likely remains. Climate change, and thinning of pinyon-juniper woodlands are additional threats. Very small population size is another threat.

Thank you for reviewing and fully considering these comments.

Respectfully,



Greg Suba
Conservation Program Director, CNPS

Protecting California's native flora since 1965

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